NOTICE OF SPECIAL MEETING
OF THE
SOUTH ORANGE COUNTY WASTEWATER AUTHORITY

PROJECT COMMITTEE 2/PROJECT COMMITTEE 15 JOINT MEETING

January 23, 2025

9:00 a.m.

NOTICE IS HEREBY GIVEN that a Special Meeting of the South Orange County Wastewater Authority (SOCWA) Joint Project Committee 2/Project Committee 15 Meeting was called to be held on **January 23, 2025, at 9:00 a.m.** SOCWA staff will be present and conducting the meeting at the SOCWA Administrative Office located at 34156 Del Obispo Street, Dana Point, California.

THE SOCWA MEETING ROOM IS WHEELCHAIR ACCESSIBLE. IF YOU REQUIRE ANY SPECIAL DISABILITY RELATED ACCOMMODATIONS, PLEASE CONTACT THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY SECRETARY'S OFFICE AT (949) 234-5452 AT LEAST TWENTY-FOUR (24) HOURS PRIOR TO THE SCHEDULED MEETING TO REQUEST SUCH ACCOMMODATIONS. THIS AGENDA CAN BE OBTAINED IN ALTERNATE FORMAT UPON REQUEST TO THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY'S SECRETARY AT LEAST TWENTY-FOUR (24) HOURS PRIOR TO THE SCHEDULED MEETING. MEMBERS OF THE PUBLIC HAVE THE OPTION TO PARTICIPATE IN AND MAY JOIN THE MEETING REMOTELY VIA VIDEO CONFERENCE FOR VISUAL INFORMATION ONLY (USE ZOOM LINK BELOW) AND BY TELECONFERENCE FOR AUDIO PARTICIPATION (USE PHONE NUMBERS BELOW). THIS IS A PHONE-CALL MEETING AND NOT A WEB-CAST MEETING, SO PLEASE REFER TO AGENDA MATERIALS AS POSTED ON THE WEBSITE AT WWW.SOCWA.COM. ON YOUR REQUEST, EVERY EFFORT WILL BE MADE TO ACCOMMODATE PARTICIPATION. FOR PARTIES PARTICIPATING REMOTELY, PUBLIC COMMENTS WILL BE TAKEN DURING THE MEETING FOR ORAL COMMUNICATION IN ADDITION TO PUBLIC COMMENTS RECEIVED BY PARTIES PARTICIPATING IN PERSON. COMMENTS MAY BE SUBMITTED PRIOR TO THE MEETING VIA EMAIL TO ASSISTANT SECRETARY DANITA HIRSH AT DHIRSH@SOCWA.COM WITH THE SUBJECT LINE "REQUEST TO PROVIDE PUBLIC COMMENT." IN THE EMAIL, PLEASE INCLUDE YOUR NAME, THE ITEM YOU WISH TO SPEAK ABOUT, AND THE TELEPHONE NUMBER YOU WILL BE CALLING FROM SO THAT THE COORDINATOR CAN UN-MUTE YOUR LINE WHEN YOU ARE CALLED UPON TO SPEAK. THOSE MAKING PUBLIC COMMENT REQUESTS REMOTELY VIA TELEPHONE IN REAL-TIME WILL BE ASKED TO PROVIDE YOUR NAME, THE ITEM YOU WISH TO SPEAK ABOUT, AND THE TELEPHONE NUMBER THAT YOU ARE CALLING FROM SO THE COORDINATOR CAN UN-MUTE YOUR LINE WHEN YOU ARE CALLED UPON TO SPEAK. ONCE THE MEETING HAS COMMENCED, THE CHAIR WILL INVITE YOU TO SPEAK AND ASK THE COORDINATOR TO UN-MUTE YOUR LINE AT THE APPROPRIATE TIME.

AGENDA ATTACHMENTS AND OTHER WRITINGS THAT ARE DISCLOSABLE PUBLIC RECORDS DISTRIBUTED TO ALL, OR A MAJORITY OF, THE MEMBERS OF THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY PROJECT COMMITTEE 2 AND PROJECT COMMITTEE 15 IN CONNECTION WITH A MATTER SUBJECT FOR DISCUSSION OR CONSIDERATION AT AN OPEN MEETING OF THE PROJECT COMMITTEE 2 AND PROJECT COMMITTEE 15 ARE AVAILABLE FOR PUBLIC INSPECTION IN THE AUTHORITY ADMINISTRATIVE OFFICE LOCATED AT 34156 DEL OBISPO STREET, DANA POINT, CA ("AUTHORITY OFFICE") OR BY PHONE REQUEST MADE TO THE AUTHORITY OFFICE AT 949-234-5452. IF SUCH WRITINGS ARE DISTRIBUTED TO MEMBERS OF THE PROJECT COMMITTEE 2 AND PROJECT COMMITTEE 15 LESS THAN TWENTY-FOUR (24) HOURS PRIOR TO THE MEETING, THEY WILL BE AVAILABLE IN THE RECEPTION AREA OF THE AUTHORITY OFFICE AT THE SAME TIME AS THEY ARE DISTRIBUTED TO THE PROJECT COMMITTEE 2 AND PROJECT COMMITTEE 15 AND SENT TO ANY REMOTE PARTICIPANTS REQUESTING EMAIL DELIVERY OR POSTED ON SOCWA'S WEBSITE. IF SUCH WRITINGS ARE DISTRIBUTED IMMEDIATELY PRIOR TO, OR DURING, THE MEETING, THEY WILL BE AVAILABLE IN THE MEETING ROOM OR IMMEDIATELY UPON VERBAL REQUEST TO BE DELIVERED VIA EMAIL.

THE PUBLIC MAY PARTICIPATE REMOTELY BY VIRTUAL MEANS FOR AUDIO OF MEETING USE THE CALL IN PHONE NUMBERS BELOW AND FOR VIDEO USE THE ZOOM LINK BELOW.

Join Zoom Meeting
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AGENDA

1. Call Meeting to Order

2. Public Comments

   THOSE WISHING TO ADDRESS PROJECT COMMITTEE 2 AND PROJECT COMMITTEE 15 ON ANY ITEM LISTED ON THE AGENDA WILL BE REQUESTED TO IDENTIFY AT THE OPENING OF THE MEETING AND PRIOR TO THE CLOSE OF THE MEETING. THE AUTHORITY REQUESTS THAT YOU STATE YOUR NAME WHEN MAKING THE REQUEST IN ORDER THAT YOUR NAME MAY BE CALLED TO SPEAK ON THE ITEM OF INTEREST. THE CHAIR OF THE MEETING WILL RECOGNIZE SPEAKERS FOR COMMENT AND GENERAL MEETING DECORUM SHOULD BE OBSERVED IN ORDER THAT SPEAKERS ARE NOT TALKING OVER EACH OTHER DURING THE CALL.

3. Master Plan Scoping Discussion [Project Committees 2 and 15]

   Recommended Action: Committee discussion/direction and/or action.

4. J.B. Latham Treatment Plant (JBL) and Coastal Treatment Plant (CTP) Funding Strategy and Implementation Plan [Project Committees 2 and 15]

   Recommended Action: Information Item.

5. JBL & CTP Planning Studies Summary [Project Committees 2 and 15]

   Recommended Action: Information Item.

6. Coastal Treatment Plant (CTP) Aeration Blower System Upgrades Design Contract Award [Project Committee 15]

   Recommended Action: Staff recommends that the PC 15 Board of Directors i) add $75,000 to the CTP Aeration Blower System Upgrades project budget, for a total amended budget of $150,000, ii) approve a contract with Carollo Engineers for a total of $129,688, and iii) approve a project contingency of $12,969 to cover potential unknown issues during preliminary design.

7. Adjournment

I hereby certify that the foregoing Notice was personally emailed or mailed to each member of the SOCWA Project Committee 2 and Project Committee 15 at least 24 hours prior to the scheduled time of the Special Meeting referred to above.

I hereby certify that the foregoing Notice was posted at least 24 hours prior to the time of the above-referenced Project Committee meeting at the usual agenda posting location of the South Orange County Wastewater Authority and at www.socwa.com.

Dated this 22nd day of January 2025.

Danita Hirsh, Assistant Secretary
SOUTH ORANGE COUNTY WASTEWATER AUTHORITY

Agenda Item 3

Legal Counsel Review: No

Meeting Date: January 23, 2025

TO: PC 2 / PC 15 Board of Directors

FROM: Amber Boone, Acting General Manager

STAFF CONTACT: Jim Burror, Director of Operations

SUBJECT: Master Plan Scoping Discussion [Project Committees 2 and 15]

Summary

On December 9, 2024, Project Committee 2 (PC2) Members signed the Assignment and Assumption Agreement, which contemplates a Master Planning Effort "to accommodate future treatment plant modernization, potential recapitalization, and capacity right sizing from changes in flows regarding the Parties' future use of the JB Latham Treatment Plant." Parallel to this effort are discussions by Project Committee 15 (PC15) members of the Coastal Treatment Plant (CTP) Master Planning needs. This discussion provides a framework for the agencies to potentially realize a shared master planning process for both facilities.

Discussion/Analysis

The proposed master planning scoping strategy provides a systematic framework to evaluate the facilities' current infrastructure, operational staffing requirements, and strategic objectives, thus establishing a comprehensive foundation before significant resource allocation. Through a deliberate four-stage decision process, the Board will have designated opportunities to provide critical guidance, from validating planning scope parameters through final Request for Proposals (RFP) authorization to ensuring each milestone aligns with each member agencies organizational directives. This methodical approach seeks to facilitate the evaluation of strategic options, addresses regulatory compliance and capacity requirements, and establishes a robust framework for informed decision-making regarding our long-term infrastructure investments.

The four-stage framework is structured in the following manner:

- Stage 1: Discussion on scope of master planning needs
- Stage 2: Decision on single vs. dual RFP approach
- Stage 3: Review of draft RFP framework
- Stage 4: Final RFP approval

To assist in the potential development of the RFP, staff has developed a wastewater assessment matrix (Assessment Matrix) encompassing nine components based on industry trends and discussions with agency members. Included below are the nine categories of the Assessment Matrix that can be used to inform and guide the development of the RFP.

1. Asset Management[1]

- Critical Assets
  - Age of major components and remaining useful life assessments
  - Maintenance history and critical spare parts inventory
  - Energy efficiency ratings
  - Redundancy analysis
- Performance Metrics
  - Equipment reliability and unplanned downtime
  - Maintenance costs
  - Energy consumption
  - Chemical usage
  - Biosolids production and quality

2. Capacity Analysis[2]

- Current Operations
  - Average daily flow and peak wet weather flow
  - Current organic and nutrient loading
  - Conservation
  - Infiltration/Inflow assessment
  - Treatment efficiency metrics
- Growth Projections
  - Population and industrial/commercial growth forecasts
  - Service area expansion plans

3. Financial Considerations[3]

- Operating Costs
  - Labor, energy, chemical, and maintenance expenses
  - Contract services, operational audit, disposal, and laboratory costs
- Capital Needs
  - Immediate replacement needs
  - Short- and long-term improvements (0-5, 5-20 years)
  - Grant and funding opportunities

4. Infrastructure Assessment[4]

- Treatment Process Components
  - Headworks, primary/secondary/tertiary treatment systems
  - Disinfection, solids handling, odor control, and chemical storage systems

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[1] *Asset Management: A Best Practices Guide*, Environmental Protection Agency (EPA 816-F-08-014). http://nepis.epa.gov/Exe/ZyPdf.cgi?Dockey=P1000LP0.txt.

[2] Design of Municipal Wastewater Treatment Plant. WEF Manual of Practice No. 8. ASCE Manuals and Reports on Engineering Practice No. 76. Fifth Edition.

[3] Facility Plan Guidance for Wastewater Treatment Facilities. PUB 2416. Missouri Department of Natural Resources. PUB 2416.

[4] Asset Management Plan Components and Implementation Tools for Small and Medium Sized Drinking Water and Wastewater Systems. Reference Guide for Asset Management Tools (2020). https://www.epa.gov/sites/default/files/2020-06/documents/reference_guide_for_asset_management_tools_2020.pdf

    - Regional gap analysis of regional recycled water production and usage
- Support Infrastructure
    - Electrical, SCADA, laboratory facilities, administrative buildings
    - Access roads, site security, and stormwater management systems

5. Integration Points

- System Interconnections
    - Collection system interfaces, shared facilities, and emergency interconnections
    - Regional planning considerations
- Administrative Coordination
    - Shared resources, mutual aid agreements, cost-sharing, and reporting

6. Operational Resilience

- Emergency Response
    - Emergency response plans, critical failure scenarios, and staff training programs
- Climate Adaptation
    - Vulnerability to sea level rise, flooding, extreme weather, and drought

7. Regulatory Compliance, Policy Drivers, and Permits[1]

- Current Permit Status
    - NPDES permit expiration and compliance status
    - Historical violations and pretreatment program requirements
- Future Regulatory Considerations
    - Anticipated NPDES changes, emerging contaminants, microplastics, and PFAS/PFOA regulations

8. Staffing and Operations

- Workforce Assessment
    - Staffing levels, certification needs, and safety program status
- Operational Efficiency
    - Process optimization, automation, and compliance monitoring

9. Sustainability and Resource Recovery

- Energy Management
    - Cogeneration, energy generation, energy storage, and energy reduction opportunities
- Resource Recovery
    - Biosolids management, water reuse, nutrient recovery, and biogas utilization

Through the four-stage process, SOCWA staff will work with member agency designees to systematically convert technical assessments into structured RFP elements. For example, transforming condition ratings into design specifications, capacity analyses into performance criteria, and compliance requirements into clear deliverables that consulting teams can effectively respond to. The goal of the final RFP emerges as a comprehensive document that not only addresses immediate infrastructure needs but also integrates forward-looking elements such as sustainability initiatives, climate resilience, and resource recovery opportunities, all while

[1] CA NPDES Permit No. CA0107611 (Aliso Creek Ocean Outfall) & CA NPDES No. CA0107417 (San Juan Creek Ocean Outfall

maintaining clarity on project scope, timeline, and evaluation criteria that align with the identified priorities from the initial assessment phase.

Recommended Action: Committee discussion/direction and/or action.

Agenda Item 4

PC 2 / 15 Committee Meeting

Meeting Date: January 23, 2025

TO: PC 2 / PC 15 Board of Directors

FROM: Amber Boone, Acting General Manager

STAFF CONTACT: Roni Grant, Associate Engineer

SUBJECT: J.B. Latham Treatment Plant (JBL) and Coastal Treatment Plant (CTP) Funding Strategy and Implementation Plan [Project Committees 2 and 15]

Overview

SOCWA collaborated with Hazen to develop the CTP funding strategy and implementation plan. Hazen presented the Phase 1 report and the findings at the February 2024 Engineering Committee meeting. Following this, PC 2 members expressed interest in identifying funding sources for the JBL. Consequently, SOCWA issued a purchase order to Hazen in December 2024 to commence Phase 1 of the JBL funding strategy.

On January 15, 2025, Hazen initiated Phase 1 of the JBL Funding Strategy and Phase 2 of the CTP Funding Strategy Implementation Plan. The kickoff meeting was attended by members of PC 2 and 15, as well as SOCWA staff.

The group discussion covered the following topics:

- Eligibility and Assignability
- Project Size and Budgetary Considerations
- Justice40 and DAC criteria
- Other Considerations

Next Steps:

- SOCWA will complete the intake project list and collaborate with Hazen to identify benefits and narrow down project by January 24, 2025.
- Hazen will identify eligible projects within four to six weeks upon receiving the intake project list for both plants.

Recommended Action: Information Item.

Agenda Item 5

PC 2 / PC 15 Committee Meeting

Meeting Date: January 23, 2025

TO: PC 2 / PC 15 Board of Directors

FROM: Amber Boone, Acting General Manager

STAFF CONTACT: Roni Grant, Associate Engineer

SUBJECT: JBL & CTP Planning Studies Summary [Project Committees 2 and 15]

Summary

To inform the planning discussions for JB Latham and the Coastal Treatment Plant, SOCWA staff have prepared a summary of planning studies from 2000 to 2024. There have been 57 studies of the JB Latham facility and 25 studies of the CTP since 2000.

Recommendation: Information item.

Attachment: SOCWA PC 2 and 15 Joint Meeting Planning Studies Summary

SOCWA PC 2 and 15 Joint Meeting

Planning Studies Summary

January 23, 2025

J.B. Latham Treatment Plant Facility Planning Studies

- 2000: AWT preliminary design by CGVL
- 2006-2008: AWT preliminary design, basis of design and conceptual design by CH2MHill
- 2009: AWT value engineering study by George Wesner
- 2012: Facility plan by Carollo
- 2016: Consolidated headworks feasibility study by Carollo
- 2016: MNWD flow study to JBL by AKM
- 2017: Foul air system evaluation by DHK Engineers

J.B. Latham Treatment Plant Facility Planning Studies (Con't)

- 2019: JBL Package B final design technical memo
- 2021: Consequence of failure analysis by Dudek
- 2021: Hydraulic model and flow management study by Carollo
- 2024: Plant 2 primary clarifier condition assessment by HDR
- Total of around 57 studies done since 2000.

JBL AWT System Value Engineering Summary

- Treat the secondary effluent with additional process before filtration; or improve the secondary effluent quality through improvements at the plant.
- Alterative 1: AquaDisk/UV: $2.6M construction estimate
- Alternative 2: MBR/UV: $6.6M construction estimate
- Alternative 3: MF/UV: $3.9M construction estimate

JBL Facility Plan Project Phasing Recommendation Summary

- Short-Term: Grit chamber upgrades; structural rehabilitation; aeration basin upgrades; Digester 5 with Disk thickeners and Digester 4 mixing; Implement cogeneration upgrades; Plant 1 to Plant 2 diversion
  - Aeration Upgrades - $4.4M construction estimate
  - Cogeneration Upgrades - $4.6M construction estimate
- Mid-Term: Secondary effluent disinfection
- Long-Term: Contaminants of emerging concern; recycled water; groundwater recharge; nutrient limits

JBL Consolidated Headworks Evaluation Summary

- Alternative 1: Requires demolition of existing DAFs
- Alternative 2: Requires demolition of existing ferric facility and Digesters 3 and 4
- Alternative 3: Requires demolition of existing Secondary Clarifier Nos. 8 and 9.
- Estimated construction cost is approximately $30 millions.

MNWD Flow Study to JBL Summary

- Tributary Flows may be diverted to JBL and RTP.
- During the three winter months, when recycled water is diverted to JBL, the tributary estimated flow was 1.536 MGD.
- During the remaining nine months, when the wastewater is sent to RTP, the tributary estimated flow was 1.3905 MGD.

JBL Foul Air System Evaluation and Recommendation Summary

- Multiple stage chemical scrubber; engineered media biotower, high-capacity carbon and soil odor beds were evaluated.
- Plant 1: One engineered media biotower with 12,900 cfm capacity and one chemical scrubber with 12,900 cfm capacity, $3.65M construction cost estimate.
- Plant 2: Two engineered media biotowers with 10,000 cfm capacity each, $5.97M construction cost estimate.

JBL Package B Basis of Design Summary and Recommendation

- Centrate piping in Dewatering Building and centrate pump station: $750K construction cost estimate – Centrate piping improvements completed in 2024
- Plant 1 Primary and Secondary improvements: Completed
- Plant 2 Primary and Secondary improvements: Partially completed
- Effluent System Modifications: Final design ongoing
- DAF and TWAS improvements: Completed
- Boiler system upgrades: Completed
- Package B total construction cost was around $18M

JBL Consequence of Failure Analysis

- Identify top priority projects that are not addressed with the near-term CIP projects.
  - Replacement of hauling truck load cells (CIP)
  - Replacement of Plant 2 primary clarifier covers (completed)
  - Replace existing corroded gas line (RFP out)
  - MCC M replacement (CIP)
  - Complete a storage needs assessment and replace the existing shed (Old Effluent Pump Station repurposing design underway)
  - Reconfigure chlorine contact basin and process water system (completed)
  - Construct sludge storage facility (not in current CIP)

JBL Hydraulic Model and Flow Management Study Results Summary

- Maximum plant hydraulic capacity – 12.7 mgd at Plant 1 and 8.0 mgd at Plant 2
- Mimic Title 22 requirements at Plant 1 – 6.9 mgd
- Mimic Title 22 requirements at Plant 2 – 4.3 mgd
- Determine maximum combined flow with all units in service – 9.7 mgd at Plant 1, 7.1 mgd at Plant 2.
- Identify where spilling would occur at both plants – 19.0 mgd at Plant 1 and 9.8 mgd at Plant 2 at primary influent channels
- Determine maximum combined flow with typical units in service – 9 mgd at Plant 1 and 3.1 mgd at Plant 2
- Effluent management scenario at Plant 1 – 6.2 mgd

JBL Plant 2 Primary Clarifiers 7-9 Condition Assessment Recommendation

- Primary Clarifier 7
  - One to two years: Replace chain and flight axle mounting plate and repair cracked concrete.
  - Two to five years: Repair concrete cracks that weep water and apply skim coat.
- Primary Clarifier 8
  - One to two years: Replace chain and flight axle mounting plate.
  - Two to five years: Repair concrete cracks that weep water.
- Primary Clarifier 9
  - Two to five years: Repair concrete cracks that weep water and apply a skim coat.

Coastal Treatment Plant Facility Planning Studies

- 2000: Aeration system preliminary design by HDR
- 2008: Aeration blower capacity analysis by Carollo
- 2008: RAS upgrades study by Carollo
- 2013: Facility plan by CH2MHill
- 2019: Blower alternatives evaluation by Hazen
- 2019: MBR and blower evaluation by Hazen
- 2022: Consequence of failure analysis by Dudek
- 2023: Funding Strategy Phase 1
- Approximately 25 reports done since 2000

Aeration System Retrofit Preliminary Design

- An average flow of 8.1 mgd without nitrification through five basins, 150 panels are required.
- An initial capacity without nitrification was 6.7 mgd with 120 panels.
- Other miscellaneous items: Primary effluent channel interconnect pipe; installation of influent weir gates and effluent slide gates, etc.
- Preliminary construction cost estimate around $3.5M.

CTP Aeration Blower Capacity Analysis

- Alternative 1 – Maintain existing operation, one blower during average and two during peak.
- Alternative 2 – Operate separate existing blowers, with a dedicated blower operated for east and west.
- Alternative 3 (recommended) – Install four new low-capacity blowers - $3M construction estimate
- Alternative 4 – Replace dedicated blower for each plant and maintain the existing swing blower for standby
- Alternative 5 – Install a single blower to supply air to both plants

RAS Upgrades Technical Memorandum

- Potential improvements recommended
  - Relocate the East RAS channel discharge pipe from the side to the bottom
  - Repair the undermined slabs
  - Relocate East RAS pipe to below grade
  - Construction second west RAS pump VFD and implement PLC control.
  - Replace and relocate the RAS pump discharge meters.
  - Install RAS meter in west aeration basin 1 inlet line.
  - Relocate east aeration basin inlet meters.
  - Construction new combined RAS pump discharge header.
  - Construction deeper RAS channel along east clarifiers.
  - Estimated construction cost: $2.2M

CTP Facility Plan Recommendations

- Facility Improvements and CIP recommendation for 6.7 mgd
  - Ferric chloride and sampling relocation: $270K
  - Screening handling: $714K
  - Drainage Pump Station: $2M
  - Aged electrical equipment and misc. improvements: $5.2M
  - Aeration improvements: $1.8M
  - Demineralization system: $5.4M

CTP MBR and Aeration Blower Evaluation

- The study identified new turbo blowers with a capacity of 12,100 scfm and a firm capacity of 7,900 scfm to meet future average day demands in the east aeration basins.
- Two of the existing multi-stage blowers to be relocated to the Auxiliary Blower Building as standby.
- Conversion to an MBR used 4 mgd as the baseline.
- The evaluation concluded that the proposed turbo blowers can meet the current aeration demands and future MBR demands.
- Estimated construction cost estimate: $4.6M

Consequence of Failure Analysis

- Two top priority project needs requiring capital investment to mitigate risk
  - Replace the existing odor control system and scrubber (design contract awarded)
  - Protect and upgrade the existing drainage pump station out of the floodplain (design underway)

Funding Strategy Phase 1

- Identified potential funding opportunities to improve resiliency and water quality
  - California Department of Water Resources (DWR)
  - Federal Emergency Management Agency (FEMA)
  - US Bureau of Reclamation (Reclamation)
  - US Environmental Protection Agency's Water Infrastructure Finance and Innovation Act (WIFIA) program
  - State Water Resources Control Board Clean Water State Revolving Fund (CWSRF) program

Agenda Item 6

PC 2 / PC 15 Committee Meeting

Meeting Date: January 23, 2025

TO: PC 2 / 15 Board of Directors

FROM: Amber Boone, Acting General Manager

STAFF CONTACT: Roni Grant, Associate Engineer

SUBJECT: Coastal Treatment Plant (CTP) Aeration Blower System Upgrades Design Contract Award [Project Committee 15]

Overview

The current aeration blower system at the Coastal Treatment Plant (CTP) consists of two larger size blowers and one smaller size blower. Blower 1 serves the west basins only; Blower 2 can be utilized at the east or west basins. Blower 3 serves as a backup unit to meet the higher demand or when dissolved oxygen demand is extremely low.

The operation of the aeration system has been hindered over the past ten years by increased solids concentrations, peak weekend loading conditions, mechanical breakdowns, and increased power demand charges to run a second blower in high peaks. This has largely prevented the utilization of the automated controls for the aeration system. In addition, two of the multistage blowers are equipped with speed increasers that require a significant amount of cooling water.

SOCWA retained Carollo Engineer in 2008 to evaluate the aeration blower capacity. In addition, as part of the Facility Plan, SOCWA retained CH2MHill in 2014 to evaluate the aeration system. In 2018, SOCWA retained Hazen to design the Facility Improvements project including the aeration system upgrades. However, the design was put on hold at 35% submittal due to the member agencies of PC 15 considering a reduction in the capacity of the treatment plant from 6.7 MGD to 4 MGD. In addition, a system to meet the current aeration demands and to satisfy future membrane bio reactor (BMR) demands is desired.

The preliminary scope of services include the following:

- Project Management
- Data Collection and Document Review
- Basis of Design Report (PDR)

Cost Allocation

The preliminary design effort proposed by Carollo has a proposed fee of $129,688. Cost allocation for the preliminary design effort and contingency are shown in Table 1. Staff requests a contingency of $12,969 for potential unknown issues during preliminary design, for a total project budget of $142,657.

Table 1 – Cost Allocation by Member Agency (including contingency)[1]

Agency	Percentage of Ownership	Aeration Blower System Upgrades 35247L
City of Laguna Beach	54.33%	$77,505.55
Emerald Bay Service District	2.99%	$4,265.44
South Coast Water District	42.68%	$60,886.01
Total	100%	$142,657.00

1. The updated allocations were based on the December 12th CTP capacity rights transfer final agreement (Agreement No.3).

Budget

The Aeration Blower System Upgrades (35247L) has a project budget of $75,000, and $50,000 has been collected through June 30, 2024. Staff requests an additional budget of $75,000 for a total revised project budget of $150,000 for the Aeration System Upgrades preliminary design.

Prior Related Project Committee or Board Action (s)

This item was reviewed and discussed at the December 12, 2024 board meeting. The PC 15 Board directed staff to obtain a preliminary design proposal from Carollo.

Recommended Action: Staff recommends that the PC 15 Board of Directors i) add $75,000 to the CTP Aeration Blower System Upgrades project budget, for a total amended budget of $150,000, ii) approve a contract with Carollo Engineers for a total of $129,688, and iii) approve a project contingency of $12,969 to cover potential unknown issues during preliminary design.

5355 Mira Sorrento Place, Suite 270
San Diego, California 92121
P 858-505-1020
carollo.com

January 10, 2025

Roni Young
South Orange County Wastewater Authority
34156 Del Obispo Street
Dana Point, CA 92629

Subject: Proposal for Coastal Treatment Plant Aeration Blower System Upgrades

Dear Ms. Young:

Pursuant to your request, Carollo Engineers, Inc. (Carollo) has prepared this letter proposal for the South Orange County Wastewater Authority's (SOCWA) Coastal Treatment Plant (CTP) Aeration Blower System Upgrades Project. Carollo will provide engineering services associated with the preliminary design to replace one or more of the aeration blowers. This project presents an opportunity to increase the efficiency, flexibility, and automation of the CTP aeration blower system. The scope of services related to the effort are outlined below.

Scope of Services

- Project Management:
    - Conduct meetings with SOCWA staff, develop and maintain project schedule, and track progress and action items. It is assumed there will be a kick-off meeting and two (2) progress meetings.
- Data Collection and Document Review:
    - Carollo will request and review available water quality and equipment utilization data, record drawings, and previous studies to be implemented into design.
- Basis of Design Report (BODR):
    - Carollo will perform the following tasks to develop the BODR.
        - Meet with plant staff to discuss operating modes for the facility and agree to flow scenarios.
        - Develop a plant model, calibrated for the agreed upon flow scenarios. Based on the model findings, Carollo will determine aeration air demands, identify number of blowers to replace and sequence of replacement, and update control strategies as required.
        - Evaluate any structural, mechanical, HVAC, electrical and instrumentation improvements required to implement blower replacement.
        - SoCal Ren coordination.
        - Develop an overall construction sequence.
        - Develop a cost estimate.
        - Conduct a conceptual design workshop to present findings and review a conceptual implementation plan showing how work can be completed while maintaining operation of the facility.

- Develop and submit the draft BODR for SOCWA review.
- Review and respond to any of SOCWA's review comments on the draft BODR and make changes as necessary.
- Finalize BODR and submit to SOCWA.

Deliverables

The BODR will be delivered in electronic format.

Schedule

Assuming acceptance of this proposal, the schedule for the overall project will be as follows:

- Site Visit and Kick-off Meeting: Within 7 calendar days of Notice to Proceed (NTP).
- Conceptual Design Workshop: 90 calendar days from NTP
- Draft Report Submittal: 120 calendar days from NTP
- Draft Report Review Workshop: 150 calendar days from NTP
- Final Report Submittal: 165 calendar days from NTP

Please let us know if you have any questions.

Sincerely,
CAROLLO ENGINEERS, INC.

Jeff Weishaar, P.E.

Author Initials: JW

Enclosures: None

South Orange County Wastewater Authority
Coastal Treatment Plant
Aeration Blower System Upgrade

January 2025

Task No	Task Description	Project Manager	Technical Advisor/QA/QC	Lead Project Professional	Project Professional	Professional	Assistant Professional	Senior Technician	Technitian	Document Processing / Clerical	Total Hours	**Labor Fee**	Project Equipment and communication Expense [piece](per labor hour)	Other Direct costs (odcs)	Total Project Fee
	Hourly Billing Rate	$310.00	$310.00	$274.00	$242.00	$204.00	$180.00	$205.00	$172.00	$149.00			$15.00		
1.0	Project Management and Progress Meetings	6	0	4	4	2	6	0	0	0	22	$5,412.00	$330.00	$1,200.00	$6,942.00
1.1	Kick off Meeting	2		2	2		4				10	$2,372.00	$150.00	$1,200.00	$3,722.00
1.2	Progress Meeting	2		2	2	2	2				10	$2,420.00	$150.00		$2,570.00
1.3	Project Management	2									2	$620.00	$30.00		$650.00
2.0	Data Collection and Document Review	4		16	12	16	24				72	$16,112.00	$1,080.00		$17,192.00
3.0	Basis of Design	12	120	28	32	122	56	6	12	24	412	$98,174.00	$6,180.00	$1,200.00	$105,554.00
3.1	Draft Report	4	80	20	24	76	32	4	8	16	264	$63,172.00	$3,960.00		$67,132.00
3.2	Conceptual Design Workshop	4	4	4	2	2	8				24	$5,908.00	$360.00	$1,200.00	$7,468.00
3.3	Final Report	4	36	4	6	44	16	2	4	8	124	$29,094.00	$1,860.00		$30,954.00
Total		22	120	48	48	140	86	6	12	24	506	$119,698.00	$7,590.00	$2,400.00	$129,688.00