ATTACHMENT A

BACKGROUND/GOAL/ SCOPE OF WORK

DRAFT

Conceptual Scope of Services for Coastal Treatment Plant Master Planning Effort

August 2025

Background

The South Orange County Wastewater Authority (SOCWA) is a Joint Powers Authority (JPA) responsible for providing wastewater treatment, effluent and biosolids disposal, and water recycling at regional facilities in the southern part of Orange County. The Member Agencies of SOCWA include: the City of Laguna Beach, the City of San Clemente, El Toro Water District, Emerald Bay Service District, Santa Margarita Water District (SMWD), and South Coast Water District (SCWD). SOCWA owns and operates wastewater treatment facilities, transmission mains, and ocean outfalls.

Recently, SOCWA has undergone reorganization impacting ownership of and participation in two critical SOCWA wastewater treatment plants, the J.B. Latham Treatment Plant (JBLTP) and the Coastal Treatment Plant (CTP). The major changes from this reorganization include the withdrawal of one of the original SOCWA Member Agencies, Moulton Niguel Water District, from the JPA, the transfer in ownership of SOCWA's Regional Treatment Plant to Moulton Niguel Water District, and the transfer of Moulton Niguel Water District's capacity in the JBLTP and CTP to the other Member Agencies with capacity in those facilities. The affected SOCWA members recognize the importance of proactive, long-term master planning at both the JBLTP and CTP to support future treatment plant modernization, potential recapitalization, and sizing capacity appropriately to accommodate future uses.

SOCWA administers project responsibilities based on Member Agency participation. If a SOCWA project or facility involves less than all SOCWA's Member Agencies, the affected Member Agencies form a "Project Committee" (or "PC") that is responsible for decisions regarding the construction, operation, and maintenance of that project or facility.

The CTP is governed by City of Laguna Beach, Emerald Bay Services District and SCWD (together, the "PC 15 Member Agencies") and are the Participating Member Agencies of Project Committee 15 ("PC 15"). This committee shares financial and decision-making responsibility for the plant's operations and improvements.

Following recent reorganization and reassignment of Moulton Niguel Water District's (MNWD) capacity at the CTP to the remaining PC 15 Member Agencies, SOCWA is working in collaboration with the PC 15 Member Agencies in seeking to retain a qualified firm to conduct a comprehensive Facility Planning Assessment (FPA) for the CTP. The primary objective of the FPA will be to prepare a comprehensive analysis of potential treatment facility improvement alternatives that will optimize long-term treatment and beneficial reuse opportunities for PC 15 Member Agencies based on anticipated and projected wastewater flows, regulatory considerations, and addressing site specific challenges unique to the CTP. This effort will also include a high-level feasibility assessment and "fatal flaw" analysis to evaluate the long-term viability of maintaining the CTP verses decommissioning the facility and redirecting all flows for treatment to the other treatment facilities in the region.

Coastal Treatment Plant

The CTP is located within the Aliso and Woods Canyon Wilderness Park, between the Cities of Laguna Niguel and Laguna Beach, and was established in 1983 and treats an average of 3.2 million gallons per day (MGD) of wastewater, with a capacity of 6.7 MGD. It serves communities including the City of Laguna Beach, Emerald Bay Services District, and SCWD.

The treatment plant uses a conventional activated sludge process including screening, grit removal, clarification, and biological treatment. Treated effluent from the treatment plant is partially used for Title 22 recycled water reuse and discharged into the ocean via the Aliso Creek Ocean Outfall. Figure A provides an overview schematic of the CTP and corresponding treatment processes. The outfall is located approximately 1.5 miles offshore from Aliso Beach in Laguna Beach, California. Primary sludge and thickened waste activated sludge from the treatment plant are pumped through a force main to Moulton Niguel Water District's Regional Treatment Plant (RTP) for solids treatment and disposal under contract with the PC 15 Member Agencies. The treatment plant produces Title 22 recycled water for non-potable purposes through the Advanced Water Treatment (AWT) facility. Also located on-site is the Aliso Creek Water Reclamation Facility (ACWRF), which uses advanced treatment to treat either harvested water from Aliso Creek, or the recycled water from the AWT facility. The goal of the operation is to improve the quality (lower the

salinity) of the overall recycled water supply and to divert runoff from Aliso Creek under certain conditions to reduce pollutant loads impacting the local ocean environment. The product water from both facilities meets Title 22 standards and is blended and distributed for non-potable landscape irrigation uses.

Recent upgrades include new energy-efficient aeration systems, electrical improvements, and enhanced safety features. The plant also emphasizes environmental stewardship, operating near protected wilderness areas and adhering to strict pollution prevention standards.

The CTP Treatment process generally includes:

- Screening
- Grit Removal
- Primary Clarification
- Secondary Treatment
- Secondary Clarification
- Thickening

Overall Master Planning Goals

The CTP master planning effort has multiple goals, including but not limited to:

- Establishing an agreed to Level of Service across key service categories and key performance indicators for wastewater treatment facilities.
- Conducting a phased facility master planning effort to identify potential treatment facility improvement alternatives that will optimize long-term treatment and beneficial reuse opportunities for the CTP.
- Completing a 30-year base capacity utilization and peaking analyses for the CTP based upon current and forecast flows, loads and flow characteristics (peaking), and other future potential uses of the CTP.
- Performing high-level process-by-process assessments to determine existing available capacity, general asset condition, available useful life remaining, and to support assessment of future infrastructure opportunities and capacity right-sizing options.
- Identifying treatment alternatives that ensure facility resiliency and reliability and manage risks related to variations in flows and loading, flooding, regulatory changes and other operational uncertainties.
- Evaluating potential biosolids treatment technologies, if deemed feasible and cost-effective, to achieve Class B solids or as needed based on future regulatory outlook.

- Developing an effluent utilization strategy to evaluate and determine the most effective future uses of the treated wastewater and Title 22 recycled water produced at the plant.
- Evaluate opportunities for future water reuse initiatives, including potential regional partnerships for indirect or direct potable reuse to further reduce ocean discharge and enhance local water supply reliability.
- Identifying project alternatives that reduce energy consumption, improve resource recovery and enhance environmental sustainability.
- Determining long-term regulatory compliance and permitting needs and assessing readiness to meet them.

Conceptual Scope of Services: Facility Planning Assessment

The treatment plant master planning effort for the CTP will be completed in two phases. The services requested under this engagement are for Phase 1 only. Phase 2 is not part of this request for services and is only provided for reference. A summary of each phase is provided below:

- Phase 1: Facility Planning Assessment (this effort) - will focus on identifying and evaluating a range of project alternatives to address current and future needs for the CTP. This phase will include technical assessments and regulatory considerations to ensure viable and cost-effective solutions for further consideration in Phase 2.
- Phase 2: Facility Master Plan (future effort) - will build upon the findings of Phase 1 to develop the comprehensive facility master plan for the CTP, outlining recommended improvements, and implementation strategies for future facility upgrades and improvements. If a consultant is successfully selected for Phase 1, they would not be precluded from participating in the future Phase 2: Facility Master Plan effort.

The following should be considered a preliminary scope of services for the Facility Planning Assessment (FPA) under Phase 1. Proposals may include modifications to this scope of services that the firm deems desirable or necessary based upon experience and expertise.

The project scope of work is separated into the following tasks supported by subtasks as outlined below.

1 Project Management

1.1 Project Control Plan

A Project Control Plan (PCP) will be developed by the Consultant to establish clear project management procedures and strategies so that the Consultant and PC 15 Member Agencies are unified in understanding of expectations, roles, and responsibilities. Master planning tasks, assignments, and project communications will be documented to provide for the efficient execution of the planning process and to help achieve quality assurance throughout the entire master planning process. The PCP should include decision-making processes, establish planning and design criteria, basis for project cost estimates, coordination needs with concurrent projects, including ongoing master planning efforts related to the JBLTP, coordination with SOCWA and the PC 15 Member Agencies, summarize master plan goals and objectives, meetings, workshops, Board presentations, deliverables, and include an overall project schedule with key milestones. Coordination regarding the JBLTP master planning effort is related to the potential decommission of CTP and the option of redirecting flows to the JBLTP.

As part of the PCP, the Consultant shall prepare a comprehensive Table of Contents for the FPA Report, outlining each proposed chapter, section, and subheadings of the report. The Consultant shall develop chapters throughout the master planning process and submit each chapter according to their proposed deliverable schedule.

1.2 Project Meetings and Communications

The kick-off meeting will assist in refining the initial vision and objectives developed for the FPA. This includes identifying what the plan is to accomplish, summarizing master planning drivers (e.g. regulatory, policy, strategic initiatives, growth, aging infrastructure, optimization, sustainability, solids handling, etc.), what information it will provide, and how the FPA will be used in subsequent implementation steps.

The Consultant will need to facilitate collaboration, effective communication, open discussion, and constructive interaction among all members of the FPA team. Prepare for and conduct kick-off and progress meetings, conference call updates, and strategically scheduled workshops with SOCWA staff, the PC 15 Member Agencies, and the Board of Directors.

The Consultant shall provide progress reports that include project updates, schedules, and track percent completed by task. The Consultant should assume one kick-off meeting and 12 monthly progress meetings.

The Consultant shall hold and describe in its proposal meetings, workshops, and Board presentations undertaken throughout the FPA process to keep SOCWA and the PC 15 Member Agencies apprised of the work efforts, review work-in-progress, share information, discuss submittals, present findings, receive feedback, and obtain decisions and direction. The Consultant shall include five staff workshops and three Board presentations to present findings based on project milestones outlined in the Tasks below.

In addition to internal coordination with SOCWA and the PC 15 Member Agencies, the Consultant will also need to support two external community engagement events. These events are anticipated to occur at the initiation of the FPA process, and subsequently when the Draft FPA is completed and publicly available. Support for the community engagement events shall include attending two in-person committee meetings at a location selected by the PC 15 members in the vicinity of the CTP, providing technical assistance and requested support for the development of presentation materials, and providing up to eight hours of preparation support. Consultant is not expected to schedule or lead the community event meetings.

2 Existing Facilities Evaluation

2.1 Description of Existing Facilities

Develop descriptions, supporting figures, and tables for the existing wastewater treatment and solids handling and ancillary facilities for the plant. The description will include design criteria, unit sizing, and both hydraulic and process capacities. Provide updated plant layouts, hydraulic profiles, mass balance schematics, and piping and instrumentation diagrams (P & IDs) as necessary for comprehensive alternatives development and analysis.

2.2 Review Existing Reports and Models

Conduct comprehensive review of existing planning documents, master plans, design documents, plant operating data, condition assessment reports, and other pertinent studies necessary for the FPA. This review aims to assess the relevancy

and applicability of each report and how they may affect the master planning of future facilities. Review previously developed treatment process and hydraulic models necessary for the completion of the FPA tasks. Summarize the relevance of each major past report/model to the master planning process and confirm the proposed improvements and estimated costs where capital improvements were recommended in reports. The FPA team will review and provide input and comments on these draft documents, as necessary, before they are finalized. Existing documents to be reviewed may include, but are not limited to, the following reports provided by SOCWA.

Coastal Treatment Plant Facility Planning Studies

- 2022: Consequence of failure analysis by Dudek
- 2021: Future Alternative Feasibility Study by Hazen
- 2019: MBR and blower evaluation by Hazen
- 2019: Blower alternatives evaluation by Hazen
- 2013: Facility plan by CH2MHill
- 2008: RAS upgrades study by Carollo
- 2008: Aeration blower capacity analysis by Carollo
- 2000: Aeration system preliminary design by HDR

The Consultant may also request copies of the 2025 SOCWA reorganization and capacity assignment agreements referred to in the Background section of this document.

2.3 Flow and Loading Analysis

2.3.1 Historical Wastewater Flows and Loading

The Consultant will review, evaluate, and summarize historical wastewater flows, pollutants and other load characteristics, and loading for the purpose of projecting wastewater flows and loads and evaluating treatment plant capacities. Identify any data gaps, incomplete or inconsistent data, and its impact on projections. Flows, loads, and associated peaking factors will be evaluated on average dry weather, average day, maximum month, and peak hourly basis, along with consideration of peak wet-weather flows. Diurnal and seasonal variability in flow will also need to be considered, as needed, for evaluating process capacities, assessing master plan alternatives, and optimizing existing facilities. The Consultant shall review and summarize past data and reports related to receiving water characteristics.

2.3.2 Projected Wastewater Flows and Loads

The FPA effort will establish and summarize wastewater flow and load projections (average dry weather, average day annual, average day maximum month, and peak hourly, and consideration of peak wet-weather flows) for the planning horizon (30 years) and build-out conditions considering future population projections, per capita wastewater flow rate, and loads, historical flows and loads trending, current and projected trends in water consumption and water conservation, current and projected trends in inflow and infiltration (I/I). The Consultant shall coordinate and obtain flow projections from SOCWA and the Member Agencies.

2.4 Existing Facilities Analysis

2.4.1 Establish Planning and Design Criteria

Determine planning and design criteria to evaluate the capacity of existing facilities. Criteria shall consider original design criteria, the Consultant's experience with similar facilities, SOCWA operational and maintenance experiences, reliability information from other similar types of treatment plants, and from pertinent engineering and industry practices.

The Consultant will review original design and sizing criteria, past reports, historical operations and flow data, and current operational strategies for each treatment plant process. Assess the hydraulic and process capacities of each treatment plant process by evaluating hydraulic and process loadings, the historical performance of each process, and considering the established design criteria.

Under a sperate engagement, SOCWA and the PC 15 Member Agencies are undertaking a facilitated process to establish a Level of Service (LOS) framework that will identify criteria across key service categories for the wastewater facilities. The LOS framework will include LOS standards and metrics for treatment plant performance and evaluative criteria to help assist with selection of preferred projects and plant modifications based upon operational needs, cost effectiveness, environmental considerations, alignment with regulatory expectations, social and community considerations, phasing and implementation flexibility, and other criteria. These criteria will be compatible with and suitable for conducting a triple bottom line analysis.

The Consultant will review and assess the developed LOS framework and corresponding evaluative criteria to identify any potential recommendations for SOCWA and the PC 15 Member Agencies consideration. Any revisions to the LOS and related evaluative criteria shall be finalized and agreed to by SOCWA and the PC 15 Member Agencies prior to evaluation of the proposed project alternatives under Task 3.

2.4.2 Hydraulic Capacity Evaluation

Review and update SOCWA's current hydraulic capacity model for all major unit processes to support appropriate alternatives analysis. Provide an updated hydraulic profile and evaluate hydraulic capacity throughout the treatment plant to identify potential hydraulic capacity limitations and assess capacity requirements from changes in average dry weather, average day annual, average day maximum month, and peak hourly flows. The hydraulic model shall be provided to SOCWA at the end of the FPA, including all rights to own and use the model developed under the FPA effort.

2.4.3 Process Model Configuration

Review and update SOCWA's current process loading model for all major unit processes to support appropriate alternatives analysis. Perform any additional configuration and/or calibration required to model future treatment plant alternatives and evaluate existing process capacities. The process model shall be provided to SOCWA at the end of the FPA, including all rights to own and use the model developed under the FPA effort.

2.5 Condition Assessment of Major Unit Processes

Conduct an onsite high-level visual condition assessment of the CTP major unit processes, focusing on the structural, process, electrical, instrumentation, and mechanical aspects of each process. The objective is to evaluate the current condition and estimate the remaining useful service life of critical equipment and processes that are expected to remain in service as part of the proposed treatment alternatives developed in Task 3.

SOCWA has completed previous conditional assessment studies, which the Consultant shall review and incorporate, where feasible, into the development of the assessment plan, analysis, and recommendations. The Consultant should

prioritize assets and major treatment processes based on criticality and condition to determine useful life and feasibility of continued use of assets going forward. In addition, the Consultant shall determine if advanced performance testing, predictive analysis, or specialized evaluation methods beyond visual inspection would be required to more accurately determine the life expectancy of some of the assets. Information regarding the need for specialized evaluation methods or assessments beyond visual inspection should be provided to SOCWA and the PC 15 Member Agencies for further consideration.

3 Wastewater Treatment Alternatives

3.1 Identify and Develop Treatment Alternatives

3.1.1 Liquid Treatment Alternatives

Prior to developing liquid treatment alternatives, the Consultant shall establish a baseline scenario based on the current plant configuration. The baseline scenario shall assess the existing liquid treatment processes under current and projected flows and loading and include recommended process and capacity optimization. The baseline scenario shall be used as a basis for comparison to other liquid treatment alternatives.

The Consultant shall identify and summarize candidate liquids treatment alternative technologies to meet anticipated regulatory requirements, existing and projected flows and loads (including water conservation impacts), cost and level of service criteria, asset management, performance, and operational efficiency requirements. Liquid treatment alternatives should consider equalization, preliminary, secondary, tertiary, and disinfection treatment processes, as well as effluent discharge and other plant hydraulic and pumping processes and facilities. The Consultant shall consider potential related impacts on other processes, such as potential future solids treatment alternatives. Consideration of future regulatory changes under Task 3.2 should be evaluated to determine the best treatment technologies.

The Consultant shall assess various liquid treatment technologies to establish a range of conceptual treatment alternatives in developing a recommended future

liquid treatment strategy. Evaluate, rank and select up to four liquid treatment project alternatives for SOCWA's and the PC 15 Member Agencies' consideration.

3.1.2 Solids Treatment and Disposal Alternatives

The Coastal Treatment Plant currently sends primary and thickened waste activated sludge to the Moulton Niguel Water District's Regional Treatment Plant (Regional Treatment Plant) for treatment and disposal.

The Consultant shall review and assess potential alternatives and if deemed feasible and cost-effective at Coastal Treatment Plant, identify candidate solids treatment technologies and disposal alternatives to meet anticipated regulatory requirements, loading, cost and level of service criteria, disposal requirements, asset management, performance, and operational efficiency requirements. Project alternatives shall be compared to the current practice of sending solids to the Regional Treatment Plant, and shall consider facilities and costs, assess energy impacts, and air emissions compliance requirements for each proposed technology. The Consultant shall consider potential related impacts on other processes, such as liquid treatment.

If deemed feasible at Coastal Treatment Plant, solids treatment and disposal alternatives should consider thickening, stabilization, dewatering, and storage processes, as well as other solids handling processes and facilities. Consideration of future regulatory changes in digester gas handling and recovery, biosolids management and disposal under Task 3.2 should be evaluated to determine the best treatment technologies, regardless of location where solids treatment and disposal occurs.

The Consultant shall compare the various solids treatment technologies to consider and assess a range of conceptual treatment alternatives in developing a recommended future solids treatment strategy. Evaluate, rank and select up to four solids treatment project alternatives for SOCWA's and the PC 15 Member agencies' consideration.

3.1.3 Evaluate Electrical Distribution, Instrumentation, and Control Systems

For each proposed treatment alternative, the Consultant shall perform a high-level assessment of recommended improvements to the wastewater plants current electrical distribution (onsite and offsite), instrumentation, and control (PLCs,

SCADA, etc.) systems. Assess normal and standby/backup power supply systems and identify strategies to improve reliability. Evaluate Energy Recovery Facilities.

The CTP currently sends solids to the Regional Treatment Plant for treatment and disposal and does not have digester gas or other energy recovery facilities. In conjunction with the evaluation of solids treatment and disposal alternatives under Section 3.1.2, the consultant shall provide a high-level review and assessment of potential alternatives and if deemed feasible at CTP, identify candidate energy recovery technologies and recommend facility improvements and associated agreements. If deemed feasible and cost-effective at CTP, recommend energy recovery improvements as part of the proposed FPA project alternatives.

3.1.4 Support Processes and Facilities

For the top-ranked liquid and solids treatment technologies and corresponding project alternatives, the Consultant shall prepare site layouts showing the general and ancillary support processes and facilities required. Layouts should include the extent of each project alternative, major utility corridors, process piping, support buildings, odor control, major ancillary support processes and facilities, electrical systems, roadways, security, access requirements, etc.

3.1.5 Site Planning Evaluation

Review and summarize previous site plans and evaluate future considerations based on each of the liquid and solids project alternatives. Include costs associated with site configuration adjustments and potential additional land needs based on the proposed treatment alternatives.

3.1.6 Evaluate Decommissioning of the Coastal Treatment Plant

The consultant shall perform a high-level feasibility assessment and “fatal flaw” analysis to evaluate the long-term viability of maintaining the CTP verses decommissioning the facility and redirecting all flows for treatment to the other treatment facilities in the region. The analysis should focus on identifying key risks, benefits, and cost implications associated with a decommissioning scenario. This work should be prioritized to help inform evaluations and decisions as part of the alternative development process and overall FPA effort.

As part of this task, the Consultant will need to work with the staff from SOCWA, Moulton Niguel Water District, and the Orange County Sanitation District (OCSD) to

obtain baseline information regarding treatment of flows from the CTP at either the JBLTP, MNWD's Regional Treatment Plant, or OCSAN's Reclamation Plants. The feasibility evaluation will need to consider at the minimum, the following items: liquid treatment capacity constraints at each alternative treatment plant, site and infrastructure considerations if capacity expansion is needed, conveyance and collection system modifications, flow and loading implications on each alternative treatment plant, regulatory and permit implications, environmental impacts, annexation considerations (OCSAN), replacement or curtailment of recycled water supply from the CTP for existing recycled water customers, and disposition of the CTP site. The analysis shall also include corresponding financial considerations including but not limited to capital, operational (including SOCWA's, MNWD's and OCSAN's full costs for treatment services), annexation fees (OCSAN) and lifecycle cost comparisons.

This reconnaissance level feasibility assessment is intended to support early-stage decision-making and does not include detailed design or technical modeling. Based on the assessment, the Consultant shall present conclusions regarding the feasibility of decommissioning and sending flows to either of the three alternative treatment facilities and if appropriate, a recommended strategy for moving forward. A workshop shall be conducted with SOCWA and the PC 15 Member Agencies to present findings, discuss key assumptions, and finalize recommendations for further consideration or refinement.

3.2 Risk and Resilience Planning Elements

The Consultant shall evaluate the following elements as part of the proposed project alternatives to assess uncertain future conditions regarding operational disruptions, and uncertain regulatory outlook. The following planning elements shall be evaluated and assessed over the 30-year planning period to determine potential impact. The Consultant shall consider these elements as they identify and develop the project alternatives.

3.2.1 Resilience Adaptation Planning

Provide a high-level planning assessment of the potential impacts on the wastewater treatment plant site and operations resulting from items such as extreme weather events and flooding, wildfires, and excessive influent flow peaking from inflow and infiltration caused by heavy and prolonged precipitation.

3.2.2 Vulnerability Planning

Provide a high-level planning assessment of the vulnerabilities with the wastewater treatment plant and provide recommendations for improving SOCWA's resiliency from potential operational disruptions. Vulnerabilities include lack of replacement parts for aged assets, prolonged or frequent power outages from wildfires or other power grid disruptions, and other material vulnerabilities identified by the consultant team.

3.2.3 Evaluate Regulatory Scenarios

Review and assess SOCWA's operating and discharge permits with pertinent regional, federal, and state regulatory requirements governing the treatment and discharge of wastewater to the Pacific Ocean, and Title 22 recycled water reuse. In addition, review solids treatment and disposal regulations, and applicable air quality and emission regulations.

Identify, prioritize, and summarize applicable new and emerging regulatory issues and develop regulatory compliance strategies that encompass the potential future regulatory outlook for SOCWA. Evaluate the proposed regulatory compliance strategy against each project alternative and identify its ability to achieve compliance or determine required improvements for achieving future compliance.

4 Recycled Water Facilities and Effluent Utilization Evaluation

In addition to performing the liquid and solids treatment assessments under Task 3, the Consultant shall conduct an evaluation of recycled water operations and opportunities at the CTP including the existing operations of the plant's Title 22 Advanced Water Treatment (AWT) facilities, and the integrated operation of the Aliso Creek Water Reclamation Facility (ACWRF). The ACWRF uses advanced treatment to treat runoff from Aliso Creek or recycled water from the AWT. The goal of the operation is to improve the quality (lower the salinity) of the local recycled water supply and to divert runoff from Aliso Creek under certain conditions to reduce pollutant loads impacting the local ocean environment. The product water from both facilities meets Title 22 standards and is blended and distributed for non-potable irrigation uses.

To create a baseline scenario, the Consultant shall conduct a review of existing reports, facility data, and operational trends at the CTP, the AWT and the ACWRF and assess improvements necessary to maintain SOCWA's current and projected uses of recycled water and to evaluate the performance of the existing recycled water infrastructure. The analysis shall also address potential changes in water quality (e.g., increasing salinity), regulatory changes, and identify capital improvements required for continued use of the recycled water facilities to comply with current commitments and future recycled water demands. This includes recommending strategies and improvements necessary to address potential impacts as part of the FPA project alternatives.

The Consultant shall also conduct an analysis of effluent utilization beneficial reuse alternatives to increase recycled water utilization and reduce or eliminate ocean discharge. Reuse options shall include indirect potable reuse (IPR) and direct potable reuse (DPR) alternatives, including enhancements needed to the AWT and/or ACWRF systems. The assessment shall include technical feasibility, regulatory requirements, environmental impacts, and cost-effectiveness of each alternative considering existing plant operations, applicable regulations, potential treatment plant, AWT and ACWRF infrastructure needs, and lifecycle cost analysis. A multi-criteria decision matrix shall be developed to compare alternatives to the current baseline scenario.

This task is intended to inform SOCWA's long-term planning by identifying additional options for optimizing the use of treated effluent in support of local and regional reuse interests and initiatives. The task will include evaluating, ranking and recommending up to two water recycling options for SOCWA's consideration.

The Consultant shall primarily focus the effluent utilization feasibility assessment on improvements that would be needed at the wastewater treatment plant, the AWT and the ACWRF. Consideration of future recycled water regulatory changes should also be evaluated to determine the best treatment technologies under Task 3. To inform the alternatives analysis where appropriate, the Consultant shall conduct a high-level cursory assessment of potential offsite treated effluent uses, needed off-site infrastructure improvements and other considerations related to each recycling option. The offsite assessment is intended to support early-stage decision-making and does not include detailed design engineering.

Recommendations and findings from this task will inform and be integrated into the FPA project alternatives, ensuring that recycled water remains a viable and optimized resource for SOCWA and the PC 15 Member Agencies.

5 Develop Project Alternatives

The Consultant shall develop a range of proposed future project alternatives for the CTP based on the findings from Task 3 and Task 4. Summarize immediate and future needs of the treatment plant by comparing current and projected wastewater flows and loadings with the capacity of the existing facilities on a process-by-process basis (liquids, solids, digester gas, energy, and other processes as appropriate). Consider related drivers such as risk and resilience elements, potential impact from regulatory requirements, treatment technologies, capacity needs, peaking, process optimization, operational performance, and the condition of existing assets as part of each project alternative.

5.1 Identify Proposed Project Alternatives

Evaluate and rank project alternative using the LOS standards for treatment plant performance and evaluative criteria finalized with SOCWA and the PC 15 Member Agencies as part of Task 2.4.1. All project alternatives must meet the basic LOS standards for treatment plant performance established by SOCWA and the PC 15 Member Agencies. For each alternative, perform a sensitivity analysis using the agreed to evaluative criteria to help test the effectiveness and resilience of project alternatives, and to rate and rank each project alternative. The Consultant shall also utilize key economic, social and environmental evaluative criteria to perform a triple bottom line analysis as part of the overall comparison of FPA project alternatives.

Evaluate, rank and propose up to four (4) combined project alternatives for SOCWA's and the PC 15 Member Agencies' consideration. Prepare planning level facility descriptions, layouts, site plans, cost estimates, and preliminary design criteria for each proposed project alternative. The Consultant shall conduct a staff workshop and Board presentation to present the proposed treatment alternatives.

6 Prepare Facility Planning Assessment Report and Documents

Prepare the required deliverables and technical memorandums (TMs) throughout the FPA master planning process as outlined in Task 6.1. Organize and provide the documents based on the Consultant's deliverable schedule developed as part of the PCP in Task 1. Summarize the major findings, recommendations, and conclusions into a comprehensive FPA report with an executive summary of the final recommendations.

6.1 List of Deliverables

The Consultant shall prepare the following deliverables under Phase 1, including but not limited to the following list, based upon the Consultants' experience and expertise in master planning processes.

Task No.	Task Description	Deliverable
1	Project Management	Project Control Plan with schedule of workshops and Board presentations.
1	Project Management	Facility Planning Assessment (FPA) Table of Contents and corresponding schedule of deliverables
1	Project Management	Monthly progress reports
2	Existing Facilities Evaluation	Conditional Assessment Report
2	Existing Facilities Evaluation	Process Flow Diagram for Liquid and Solids
2	Existing Facilities Evaluation	Hydraulic model output files
2	Existing Facilities Evaluation	Hydraulic profile
2	Existing Facilities Evaluation	Process model output files
2	Existing Facilities Evaluation	Task 2 technical summary of findings. Material to be incorporated with the corresponding Chapter of the FPA Report.
3	Wastewater Treatment Alternatives	Task 3 technical summary of findings and project alternatives. Material to be incorporated with the corresponding Chapter of the FPA report.
4	Recycled Water Facilities and Effluent Utilization Evaluation	Task 4 technical summary of findings. Material to be incorporated with the corresponding Chapter of the FPA report.
5	Develop Project Alternatives	Project alternative evaluation matrix
5	Develop Project Alternatives	Task 6 technical summary of findings of proposed treatment alternatives and corresponding project alternatives. Material to be incorporated with the corresponding Chapter of the FPA Report.
6	Prepare Facility Planning Assessment Report	Administrative Draft, Draft, and Final version of each Chapter included in the Facility Planning Assessment Report. Each Chapter shall be developed and

		submitted according to the deliverable schedule under Task 1.
6	Prepare Facility Planning Assessment Report	Administrative Draft, Draft, and Final versions of the Facility Planning Assessment Report with Exhibits.
6	Prepare Facility Planning Assessment Report	Administrative Draft, Draft, and Final versions of the Executive Summary that succinctly presents key findings, conclusions, and recommendations.

7 Anticipated Scope of Services for Phase 2 (future phase and for reference only)

As previously indicated, the treatment plant master planning effort for the CTP will be completed in two phases. The services requested under this engagement is for Phase 1. Phase 2 is not part of this request for services, and the following anticipated scope of services is only provided for reference. The intent of pursing Phase 1 prior to Phase 2 is to allow for a comprehensive analysis of potential treatment facility improvement alternatives that will optimize long-term treatment and beneficial reuse opportunities prior to completing a detailed Facility Master Plan and corresponding Capital Improvement Plan.

Phase 2: Facility Master Plan (future effort) - will build upon the findings of Phase 1 to develop the comprehensive Facility Master Plan for the CTP, outlining recommended improvements, and implementation strategies for future facility upgrades and improvements.

The following conceptual scope of services should be considered preliminary and for reference only for the Facility Master Plan (FMP) under Phase 2.

- Project Management and Communications
- Review and validate Existing Facility Needs
- Review and validate Existing and Projected flows and loadings
- Developing a Repair and Replacement (R&R) Program and Costs
- Evaluate site specific requirements for recommended project alternative under Phase 1
- Perform risk and resilience planning related to climate change, wildfire and other site-specific threats.
- Develop Recommended Master Plan Program
- Develop Capital Improvement Plan

- Identify Funding Opportunities
- Developing an Environmental Compliance Strategy
- Prepare Facility Master Plan Report
- Prepare detailed capital improvement and project summary sheets.

Figure A – CTP Facility Schematic

(INSERT)