



Santa Clara Valley Water District

File No.: 18-0256

Agenda Date: 5/22/2018

Item No.: 3.3.

BOARD AGENDA MEMORANDUM

SUBJECT:

Amendment No. 1 to Consultant Agreement No. A4034G, with GHD, Inc. for Additional Reverse Osmosis Concentrate Management Evaluation for the Recycled and Purified Water Program, Project No. 91101004.

RECOMMENDATION:

Authorize the District Chief Executive Officer (CEO) to negotiate and execute Amendment No. 1 to Consultant Agreement No. A4034G (Agreement), with GHD, Inc. to provide up to \$842,000 for Additional Reverse Osmosis Concentrate Management Evaluation for the Recycled and Purified Water Program, which will result in a revised total Agreement not-to-exceed amount of \$2,308,524.50 and an extension of the Agreement term by one year.

SUMMARY:

On October 25, 2016, the Board approved an agreement with GHD, Inc. (GHD) for consultant services for the Reverse Osmosis Concentrate (ROC) Management Project, Project No. 91101004. The Project will develop ROC management plans that provide recommendations for implementation of a county-wide solution to ROC management, taking into consideration the unique characteristics and limitations at potential advanced water purification facilities (AWPFs). The scope of work includes testing of contaminants of emerging concern (CECs) that may be present in ROC, as well as pilot treatment of identified CECs by advanced oxidation processes and engineered treatment cells. The testing and piloting portion of the project will be carried out in partnership with the San Francisco Estuary Institute (SFEI), University of California at Berkeley (UCB), and Stanford University.

District staff with assistance from GHD have been evaluating project deliverables, milestones, and timelines; collaborative research efforts on Engineered Treatment Cells (ETC) with local universities; pilot system and modeling recommendations from regulatory agencies; and opportunities to consolidate and extend project deliverables, tasks and timelines. Staff has also coordinated the pilot study activities with municipal partners, academic researchers, and state and federal regulatory agencies to address their feedback, questions and recommendations for improvement to the ETC pilot.

The project team is now conducting a deeper evaluation of the shortlisted ROC management options to refine the list down to a single preferred ROC management plan or strategy for each of the advanced water treatment facilities under consideration. The project team has already drafted

detailed reports documenting the process by which the preferred options were selected. These reports discuss the establishment of project requirements and the conceptual design basis for discussion; a review of existing dilution modeling, mass balance assessments, and toxicity studies to facilitate the selection of viable alternatives; the development of problem definitions, business drivers and multi-criteria analysis to assist with ranking options; and the summation of viable alternatives investigated, the results of assessments, description of alternatives, and the presentation of shortlisted options for further feasibility analysis.

Project research has included bench-scale studies to assess dose of oxidants, oxidant efficacy in degrading targeted pollutants, photosynthetic respiration functionality, and algal growth and survival in ROC. The ETC pilot system became operational in July 2017 and underwent a period of biological maturation. Subsequently, water quality monitoring of the operating treatment cells occurred for a suite of Chemicals of Emerging Concern (CECs) and other ancillary parameters including nutrients, metals, organic contaminants and toxicity. Staff assessed the results and established a baseline.

Following start-up, the pilot system encountered operational challenges. The Silicon Valley Advanced Water Purification Center operates intermittently during low-demand periods, resulting in no flow to the ETC. This issue caused several months of delay in sample collection. To address this technical problem, staff devised an engineered solution, which included adding ROC storage capacity by installing two 4,900-gallon tanks and associated piping and controls. The modifications are complete and will allow the pilot system to operate without interruption. The continuous ETC flow will allow for biomat growth, sampling, and data collection that are necessary for proper evaluation of the efficacy of the pilot system.

Next steps include individual agency discussions with county recycled water producers on ROC management options as presented at the ROCM Workshop No. 2. The District will also conduct two additional workshops (No. 3 and No. 4) to present the results of collaborative studies with the University of California at Berkeley and Stanford University on the economic and technical feasibility of ROC treatment by ETC, as well as a final project report with detailed alternatives review and preferred management options per site. Noteworthy project deliverables will include a preliminary draft final report in December 2018, a pilot engineered-treatment cell system draft technical memorandum and feasible alternatives report in August 2019; and a final ROC management plan report in December 2019.

To achieve critical milestones and complete the pilot study efforts, revisions to the project scope of work and subsequently amending the existing agreement are needed which include:

- Increasing the size of the ETC per project goals and research team recommendations.
- A 12-month project extension to December 2019;
- A 12-month investigative extension with academia partners (Stanford, UC Berkeley, and SFEI) to December 2019;
- Scope modifications to condense project delivery schedules;
- Additional evaluation of alternatives and discharge options; and
- Revised pilot monitoring and sampling frequency to address regulatory components

The following table shows the breakdown of the additional costs associated with the GHD contract

extension and amendment which will be retroactive effective as of March 16, 2017:

Task	Description	Original Budget	Proposed changes	Amendment Revised Fees	Adjusted Total
1	Project Management	\$111,712.50	1.3 - 12-month extension + additional work	\$139,000	\$250,712.50
2	Problem Definition	\$43,058.50	--	--	\$43,058.50
3	Conceptual Alternatives	\$65,890.50	--	--	\$65,890.50
4	Feasible Alternatives/ Subtasks	\$851,923.50	4.1 - Extend pilot study partnership with Stanford, UC Berkeley, and SFEI	\$391,000	\$1,538,923.50
			4.1.4 - Pilot system modifications, engineering and options evaluations	\$236,000	
			4.7 - Additional ROCM alternatives evaluation	\$60,000	
5	Staff Recommended Alternatives	\$277,016.50	--	--	\$277,016.50
6	ROC Management Plans Report	\$28,648.50	6.0 - Final Report	\$16,000	\$44,648.50
	Travel Expenses	\$18,440.00	--	--	\$18,440.00
7	Supplemental Services	\$69,834.50	--	--	\$69,834.50
TOTAL		\$1,466,524.50	--	\$842,000	\$2,308,524.50
Potential State Water Resources Control Board Grant Funding				(\$363,000)	

BOARD RECYCLED WATER COMMITTEE INPUT:

On March 21, 2018 the Recycled Water Committee recommended that the Board of Directors authorize the CEO to negotiate and execute an Amendment and Time Extension to the Agreement between the District and GHD Inc. (Agreement No. A4034G) to provide \$842,000 for additional reverse osmosis concentrate management evaluation, resulting in a new agreement total not-to-

exceed \$2,308,524.50.

Additionally, the Recycled Water Committee recommended that the Board of Directors adopt a resolution to authorize the CEO to prepare and submit a grant application to the State Water Resources Control Board Grant Funding Opportunity to partially fund the reverse osmosis concentrate management study.

FINANCIAL IMPACT:

Staff estimates an \$842,000 expenditure associated with approval of these items. Funds are available in Project No. 91101004 Recycled & Purified Water Program.

Staff also have been working with the California State Water Resources Control Board and the San Francisco Bay Regional Water Quality Control Board on a grant funding opportunity to offset costs. The grant will provide revenue potentially up to \$363,000 for planned academic research.

CEQA:

The recommended action does not constitute a project under the California Environmental Quality Act (CEQA) because it does not have a potential for resulting in direct or reasonably foreseeable indirect physical change in the environment.

ATTACHMENTS:

None.

UNCLASSIFIED MANAGER:

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