



AGENDA MEMORANDUM

Action Item for the City Council Meeting of March 19, 2024

DATE: March 19, 2024

TO: Peter Zaroni, City Manager

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Construction Contract Award and Professional Services Amendment
Oso Water Reclamation Plant Process Upgrade &
Breakpoint Chlorination Facility Decommissioning

CAPTION:

Motion authorizing a construction contract to CSA Construction, Inc., Houston, Texas, for the Oso Water Reclamation Plant (WRP) Process Upgrade & Breakpoint Chlorination (BPC) Facility Decommissioning project to replace the existing Breakpoint Chlorination (BPC) facility with biological ammonia removal treatment process, provides a third treatment basin and modifies the existing two treatment basins to increase the treatment capacity in an amount of \$109,890,200.00 and an Amendment No. 10 to the Professional Services Contract with Ardurra Group Inc., Corpus Christi, Texas in an amount not to exceed \$1,000,000.00 for a total amount of \$11,048,529.00 for construction phase services, located in Council District 4, with FY 2024 funding available from the Wastewater Capital Fund.

SUMMARY:

This authorizes an amendment for construction phase services with Ardurra Group Inc and a construction contract with CSA Construction, Inc., for the Oso WRP Process Upgrade & BPC Facility Decommissioning project. The project replaces the existing Breakpoint Chlorination (BPC) facility with biological ammonia removal treatment process, provides a third treatment basin and modifies the existing two treatment basins to increase the treatment capacity from the existing 16.2 MGD to 18.0 MGD, and rehabilitates/upgrades/replaces the aging and deteriorated treatment infrastructures including blower system, clarification units, disinfection system, solids dewatering and disposal system, plant electrical and instrumentation system, plant yard piping

and miscellaneous improvements.

BACKGROUND AND FINDINGS:

The Oso Water Reclamation Plant (WRP) is the largest of the City's six wastewater treatment plants and serves approximately 50% of the City's population. The Oso WRP was constructed in 1941 with several expansion projects that have occurred over the years. The plant has a rated treatment capacity for average daily flows (ADF) of 16.2 million gallons per day (MGD) and peak 2-hour flows up to 98.0 MGD. Current daily treatment flows are approximately 12.75 MGD which represents approximately 78% of the plant's ADF design capacity.

On April 29, 2011, the Texas Commission on Environmental Quality (TCEQ) issued a renewal of the plant's Texas Pollutant Discharge Elimination System (TPDES) permit, including a new monthly effluent ammonia limit. Prior to this renewal, the Oso WRP permit did not contain an ammonia limitation. To meet the TCEQ compliance date on October 29, 2013, the City constructed a BPC facility to oxidize the ammonia chemically and a step feed modification to reduce BPC chemical usage. This construction, completed in August 2013, was not intended to be a long-term solution, but rather a temporary, short-term, low capital cost solution to meet the plant's new effluent ammonia requirements while planning and implementing a permanent long-term CIP project to replace the BPC facility with biological nutrient removal (BNR) treatment process within five years.

From 2013 to 2017, the City contemplated decommissioning some or all of the existing WWTP's and consolidating flow at a single or reduced number of WWTP's. During this period major investments in the existing WWTP's were placed on hold. Moreover, an eight-year negotiation between the City and EPA regarding adoption of new water quality standards in the Oso Bay which was critical to the Oso WRP discharge permit renewal was settled in January 2020. With the approval of new Water Quality Standards in the Oso Bay from both TCEQ and EPA, the City renewed the TCEQ discharge permit and was able to implement the Oso WRP CIP project without regulatory risks.

With the above conditions, the permanent long-term CIP project for the Oso WRP was divided into two Phases: Phase I Oso WRP Headworks and Lift Station, and Phase II Oso WRP Process Upgrade & Breakpoint Chlorination Facility Decommissioning. The construction of Phase I project was completed in March 2022.

Phase II of the project is intended to replace the existing BPC facility with biological ammonia removal treatment process, provide a third treatment basin and modify the existing two treatment basins to increase the treatment capacity from 16.2 MGD to 18.0 MGD. Additionally, upgrades to existing infrastructure will consist of installation of new blower system, replacement of the clarification units, modification of the disinfection system, replacement of the solids dewatering and disposal system, improvements on the plant electrical and instrumentation system, plant yard piping and other miscellaneous items. The detailed project scope includes the listed items and all associated construction work.

- Site demolition and partial removal of fencing, existing equipment, and infrastructure.
- Demolition and removal of blower house 3 and chemical storage canopy.
- Headworks splitter box weir gates improvements.

- Construction of new bioreactor and mixed liquor suspended solids (MLSS) flow splitter structure. Installation of associated mechanical equipment, including fine bubble diffuser aeration system, gates, and access walkways.
- Rehabilitation of two aeration basins and the conversion to bioreactors consisting of the removal of existing air drops, and installation of new mechanical equipment, fine bubble diffuser aeration system, and access walkways.
- Construction of new return activated sludge (RAS) booster and waste activated sludge (WAS) pump stations.
- Construction of new blower house 1, including the installation of six new blowers, new process air loop, HVAC and electrical systems and components.
- Installation of a pre-engineered electrical control building (ECR) #6, new cable trays and electrical systems.
- Replacement of secondary clarifiers 1 - 8 sludge removal system and structure rehabilitation.
- Installation of clarifiers 1-8 effluent channel diffuser system and valves, piping, and supports.
- Upgrades to scum system, including the construction of new rotary drum screens, pumps, and miscellaneous equipment, including platforms and handrails.
- Sodium hypochlorite and sodium bisulfite system upgrades which include tanks, piping, and pumps.
- Modifications to aerated solids holding tank 1.
- Rehabilitation solids dewatering facility including installation of new volute dewatering presses, volute thickening units, canopy, and miscellaneous equipment.
- Outfall structure modifications and stilling well/flow metering replacements.
- Replacement of four existing chlorine contact chamber sludge pumps and valve system.
- Installation of various yard piping and utility lines (potable and non-potable water)
- Temporary facilities and utilities.
- Site work, pavement, and drainage improvements
- Installation of new underground electrical power line to replace existing AEP overhead electrical power line. Includes demolition of lines, power poles, and tie-ins to AEP new metering poles.
- Instrumentation and SCADA upgrades.
- Installation of new plant-wide fiber optic loop and associated appurtenances.
- Start-up and Commissioning
- Training of plant personnel.

PROJECT TIMELINE:

2020 - 2023	2023 2024					2024 - 2028
January - October	N	D	J	F	M	April - February
Design	Bid/Award					Construction

Project schedule reflects City Council award in March 2024 with anticipated completion in February 2028.

COMPETITIVE SOLICITATION PROCESS

The Contracts and Procurement Department issued a Request for Bids. On January 24, 2024, the City received a submission from one bidder. The bid was reviewed and found to be in accordance with the contract documents. CSA Construction, Inc. is the lowest responsive and responsible bidder.

A summary of the bids is provided below:

BID SUMMARY				
CONTRACTOR	BASE BID	ADD. ALT. NO. C4	ADD. ALT. NO. D2	BASE BID PLUS ADD. ALT. NO. 1 PLUS ADD. ALT. NO. 2
CSA Construction, Inc.	\$109,550,000	\$105,000	\$235,200	\$109,890,200.00
<i>Engineer's Opinion of Probable Construction Cost</i>	<i>\$109,578,000</i>	<i>N/A</i>	<i>N/A</i>	<i>\$109,578,000.00</i>

CSA Construction, Inc., has significant experience working on wastewater projects. CSA is currently working on the Oso WRP Coase Bubble Aeration and the Whitecap WWTP Process Improvements projects and has successfully completed projects for the City of Corpus Christi including the Oso WRP BPC Facility project completed in 2013 and the Phase I Oso WRP Headworks and Lift Station Improvements completed in 2022.

ALTERNATIVES:

The alternative is to not award the construction contract to the low bidder, CSA Construction, Inc. This would delay improvements to the wastewater treatment plant and impact the plants' ability to reliably treat wastewater from this service basin. Maintenance costs would continue to increase as the current process relies on high chemical usage and is inefficient due to substandard aeration. Re-bidding this project would certainly result in increased construction costs. The City would have increased exposure to TCEQ permit violations and fees if the contract is not awarded.

FISCAL IMPACT:

The fiscal impact for the FY 2024 is an amount of \$1,000,000.00 for the amendment and \$14,200,000.00 for construction with funding available from the Wastewater Capital Fund. The remaining funds will be incurred in FY 2025, FY 2026, FY 2027, and FY 2028 in the amount of \$95,690,200. Budgetary adjustments will be made in FY 2025, FY 2026, FY 2027, and FY 2028 to reflect the new contract costs.

FUNDING DETAIL:

Fund: **WW 2023 CIP (Fund 4260)**
Department: Wastewater (46)
Organization: Grants & Capital Projects Funds (89)
Project: Oso WRP Process Upgrade & BPC Facility Decommissioning (Project No. 20084A)
Account: Construction (550910)
Activity: 20084-A-4260-EXP
Amount: \$14,200,000.00

Fund: **WW 2023 CIP (Fund 4260)**
Department: Wastewater Treatment (46)
Organization: Grants & Capital Projects Funds (89)
Project: Oso WRP Process Upgrade & BPC Facility Decommissioning (Project No. 20084A)
Account: Outside Consultants (550950)
Activity: 20084-A-4260-EXP
Amount: \$1,000,000.00

Year 1 (FY 2024): \$15,200,000
Year 2 (FY 2025): \$29,230,000
Year 3 (FY 2026): \$29,230,000
Year 4 (FY 2027): \$29,230,200
Year 5 (FY 2028): \$8,000,000

Total: \$110,890,200

RECOMMENDATION:

Staff recommends awarding the Professional Services Contract Amendment No. 10 to Ardurra Group Inc., and the construction contract for the Oso WRP Process Upgrade & BPC Facility Decommissioning project to CSA Construction, Inc., in the amount of \$109,890,200.00. The construction duration is planned for 46 months from issuance of the Notice to Proceed to begin construction in April 2024.

LIST OF SUPPORTING DOCUMENTS:

Location and Vicinity Map
Bid Tab
CIP Page
PowerPoint Presentation