



Memo

6/20/2024
To: Mayor & Council
Upcoming award of GMP1
for the Barry
Rose/Longwood projects.
Projects costs are tracking
on budget.
-Trent

To: Trent Epperson, City Manager
From: Lorenzo Wingate, P.E., C.F.M., Director, Engineering and Projects
CC: Ron Fraser, Deputy City Manager
Victor Brownlees, Assistant City Manager
David Sohns, Director of Utilities
Date: June 18, 2024
Re: Barry Rose Water Reclamation Facility Replacement and Expansion and Longwood Water Reclamation Facility Decommissioning Projects – Guaranteed Maximum Price 1

Executive Summary

This memo provides information regarding the proposed amendment to the existing Construction Manager At Risk (CMAR) contract with McCarthy Building Companies (McCarthy) and the award of a Guaranteed Maximum Price (GMP) for construction of the work contained within Guaranteed Maximum Price 1 (GMP 1) for the early work phase of the Barry Rose Water Reclamation Facility (WRF) Replacement and Longwood Water Reclamation Facility Decommissioning Projects. This contract amendment and award is scheduled for the June 24, 2024 Council Agenda.

The complete project entails the construction of:

- a new 5 million gallon per day (MGD) water reclamation facility expansion, adjacent to the existing plant, on the current and recently acquired site located at 1975 Pearland Parkway;
- the construction of a new 8 MGD lift station on existing property at the Longwood plant site located at 2727 Dixie Farm Road;
- the construction of a 3.8 mile long, 20-inch force main from the Longwood plant to the new Barry Rose plant influent lift station;
- the decommissioning of the existing 2 MGD Longwood Water Reclamation Facility.

The project has been subdivided into the three major pricing components, represented by separate Guaranteed Maximum Price packages (GMPs). The GMPs for the project contain the following major work items:

- GMP 1 is the Early Work Package, described below and the subject of this proposed award;
- GMP 2 contains the Balance of Plant work at Barry Rose and the Lift Station at Longwood along with the demolition of obsolete and abandoned plant infrastructure at both locations;
- GMP 3 consists of the construction of the force main from Longwood to Barry Rose, following existing public rights of way for the majority of that distance.

GMP 1 is scheduled for award at the June 24th City Council meeting in the amount of \$66,570,019.

Background

Texas Commission on Environmental Quality (TCEQ) regulations require water reclamation facilities to initiate engineering and financial planning for facility expansion when the facility reaches seventy-five percent (75%) of the permitted daily or annual average flow for three consecutive months. Additionally, TCEQ requires the initiation of construction of necessary additional treatment facilities when flows in a water reclamation facility reaches ninety percent (90%) of the permitted average daily flow for three consecutive months. The Barry Rose facility is currently treating approximately 60% of plant capacity, while the

Longwood facility treated flows in excess of ninety-three percent (93%) for one month in 2023. Considering TCEQ's goal of regionalization of water reclamation facilities, consolidation of the Barry Rose and Longwood Water Reclamation Facilities was evaluated to determine feasibility. Evaluation of the condition of Longwood facility determined the existing facility and location (within floodway/floodplain) to be unsustainable and recommended decommission the facility and rerouting the flows to an expanded Barry Rose facility. The consolidation of the facilities is expected to reduce City operational expenses by the costs of the Longwood WRF. Design for these projects began in late 2018, after Council approved a professional services contract with Stantec Consulting Services, LLC (Stantec).

McCarthy Building Companies (McCarthy) was selected as Construction Manager At Risk (CMAR) in August 2020, during preliminary design phase and has performed pre-construction services for the City throughout the design process. The selection of McCarthy as CMAR was conducted as outlined in the Texas Governmental Code Title 10, Subpart F, Chapter 2269.251. McCarthy's pre-construction phase services include constructability reviews, equipment & labor market analysis, continuous cost estimating and budget confirmation, and bidding, culminating in the production of a Guaranteed Maximum Price (GMP) for the project.

After Stantec completed the preliminary design, a project alternatives and reevaluation study was conducted between June 2021 and June 2022 by Freese Nichols. The purpose of the 2022 Water Reclamation Facility Consolidation Study was to evaluating alternatives for planning future wastewater conveyance and treatment infrastructure in the Longwood, Barry Rose, and JHEC WRF service areas to determine the best plant location, treatment technology, and size of plant with the purpose of meeting the project goals while minimizing the lifecycle costs. The report recommended the current project scope. The Final Report and findings presentation are linked here: [2022 Water Reclamation Facility Consolidation Study](#); [Presentation](#)

Subsequently, Freese and Nichols was selected in February 2023 to provide final engineering design phase services based on the recommendations of the 2022 Water Reclamation Facility Consolidation Study.

GMP Process

To move the project quickly from design into construction phase, the CMAR has provided progressive cost estimates during plan and specification progression and provided cost estimates at 30% and 60% design development and has now provided the GMP 1 from 90% "Issued For Bid" (IFB) construction design. To coordinate cost development with the progress of design development, the project was divided into three GMP packages. This iterative cost-estimating process provides an increasingly detailed picture of each GMP package pricing as well as the ultimate cost of the total project combining all cost data developed to ensure compliance with the City's available project budget.

Early site work at the Barry Rose location is included within the GMP 1 package, consisting of grading and drainage, subgrade preparation, and construction of sequential batch reactor (SBR) basins, portions of site process piping, preliminary site electrical work, partial general conditions and pre-procurement of process equipment with long lead items. The equipment procurement effort was included in the GMP 1 package to avoid anticipated end of the year price increases predicted within current market conditions. Pricing is obtained via open bidding by local and regional contractors and vendors resulting in transparent pricing development shared with project staff and consultants. GMP 2 will contain the balance of the Barry Rose plant work, along with the Longwood Lift Station, and GMP 3 will contain the costs associated with the construction of the 20-inch force main from the Longwood site to the new Barry Rose facility.

GMP 1 Details

As noted above, GMP 1 is focused on early site work to prepare the site for further development under the Balance of Plant GMP 2. This includes grading, filling and drainage work and the construction of portions of the detention pond and outfall to Clear Creek. CenterPoint will begin installation of electrical and natural gas service to the site. The electrical subcontractor, Boyer, will install temporary as well as portions of permanent electrical distribution within the site. The GMP 1 package includes installation of process yard piping below process structures and deep foundation work for the SBR basins, which will progress directly into the cast in place concrete bottom slab and SBR walls. Major process equipment components include slide and weir gates, the odor control system, submersible pumps, grit removal equipment, headworks screens and compacting equipment, the belt press and polymer system, ultra violet (UV) disinfection system, plant blower equipment, disc filters, and major electrical distribution gear. The Direct Construction Costs for this portion of the GMP 1 totals \$47,567,983.

The GMP 1 costs include several allowances to address the undefined or undefine-able work, such as requirements to install the outfall into the Clear Creek channel, actual requirements to install the temporary electrical service, the potential need to map underground items within the new portion of the site and sub-surface utility mapping for the force main. Due to the plant's location within the flood plain, there is also an allowance for potential work required to restore the work site after a major storm. The total budget for Allowances is \$1,641,114, not including the CMAR's Contingency. In all cases, all unused funds from these allowances return to the City in total.

Indirect Costs, pertaining to the Work of GMP 1 only, include the following cost categories and amounts:

- | | |
|---|--------------------|
| • General Conditions (July 2024 to October 2025) for GMP 1: | \$6,100,528 |
| • Insurance, (Builders Risk & G/L Umbrella): | \$5,510,075 |
| • Performance and Payment Bonds for GMP 1: | \$505,932 |
| • CMAR's contractual 6% fee on GMP 1: | <u>\$3,768,114</u> |

Total Indirect Costs

\$15,884,649

Insurance coverages were assessed to provide coverage consistent with current City owned insurance policies. The standard Builder's Risk policy includes Flood and Windstorm coverages of \$15 million and \$50 million, respectively, with deductibles limited to three million dollars (\$3,000,000). The City and CMAR have negotiated to split the Flood and Windstorm deductible(s) 50/50, with the CMAR's contribution to be reimbursed by funds available within the Contractor's three percent (3%) Construction Contingency.

Finally, this section of the proposal includes the CMAR's Construction Contingency for GMP 1. Per the contract, this is set at 3% of direct costs associated with GMP 1. In this case that number is \$1,4676,273. During pricing negotiations, the CMAR conceded approximately \$1 million dollars in General Conditions and Requirements, previously included in the indirect costs, as a prerequisite to the City's agreement to a Cost Savings Sharing Plan that would replace the Risk Sharing Allowance, currently included in the contract. The proposed plan provides for the CMAR to share proportionally (60%Owner / 40% CMAR) in any savings developed in the 3% Construction Contingency during the work. This reduced the Indirect Cost by approximately \$1 million dollars, while incentivizing the CMAR to save money to return the City from unspent Contingency funds at the end of the construction period. To incorporate this Cost Savings Sharing Plan the Contract will need to be amended upon Council's agreement with this concept as discussed in greater detail below.

In addition to GMP1, the CMAR provided the total estimated GMP of \$216,746,514, based on the 60% Cost Model, reflecting the current cost trending estimate for the balance of the project including GMP1, GMP2 and GMP3. This figure is down from the original projected total GMP of \$253 million dollars in the first estimate and \$223 million at the 30% Plans and Spec's estimate, reflecting the collaborative work through the CMAR process.

The total cost, including Allowances, Contingency, Insurance, Bonds and the CMAR's fee of 6% for GMP 1 as proposed and presented for consideration is \$66,570,019. This total consists of the following cost categories:

• Direct (the construction work) Costs total	\$47,567,983.00
• Contingency (3% of the cost of work)	\$1,476,273.00
• Allowances (unused remainders return to the City)	\$1,641,114.00
• Indirect Costs, (general conditions, insurance, bonds and 6% fee)	<u>\$15,884,649.00</u>

Total Guaranteed Maximum Price for GMP 1 Work Package	\$66,570,019.00
--	------------------------

Proposed Contract Amendments

As an incentive to reduce indirect costs included in GMP 1 and later GMPs and to provide the potential for greater savings to the City from the CMAR's unused Construction Contingency, a Cost Savings Sharing Plan (CSSP) was developed around the terms of the original Risk Sharing Allowance contained in the current contract. The proposed CSSP would replace the original Risk Sharing Allowance of \$250,000 in favor of a Cost Savings Sharing Plan from the CMAR's Construction Contingency. In lieu of the 60/40 split of \$250,000 Risk Sharing Contingency as a component of compensation for the Construction Phase Services currently in the contract, it is proposed that the same 60/40 shared split methodology be applied instead to the total aggregate Construction Manager's Contingency. The CSSP incentivizes the CMAR to actively work to minimize expenditures from the CMAR Contingency by offering to share the remaining funds with the City (60% City and 40% CMAR) upon completion of the project. Recognizing the potential benefits to the City of the CMAR actively working to save contingency funds, staff have tentatively agreed, contingent on Council's approval, to Amend the current contract, removing the Risk Sharing Allowance and replacing it with the proposed Cost Savings Sharing Plan.

The original contract with McCarthy Building Companies was awarded in July 2020, anticipating a probable one-year Pre-Construction Services period, prior to initiating Construction Phase work. That original contract required the CMAR to provide Staff Labor Rates that would exist during the foreseen work schedule at that time. These rates include CMAR project construction management, construction engineers, buyers and cost estimators, safety personnel and others' hours prosecuting the work and managing subcontractors interfacing with the Owner and Designer to refine work processes, managing schedules procuring equipment managing the submittal process, construction records and warranty items. These rates make up the General Conditions of the Contract. These rates are now four years old and outdated due to pausing the project to reevaluate the original preliminary design and location of the plant before restarting the design with a new consultant. McCarthy has requested that they be allowed, with this move into construction phase four years later, to adjust those rates accordingly. The current GMP 1 already incorporates the updated labor rates. But for billing purposes, the rates shown in the table contained in the contract will need to be revised. Staff have tentatively agreed, contingent upon Council's agreement, to amend the contract by deleting the old Rate Table and replace it with the revised updated rates.

The current contract requires insurance coverage for the entire value of the project, including flood and windstorm coverage, which is a direct pass-through cost to the City. Limiting flood and windstorm coverage to \$15 million and \$50 million, respectively, requires amending the insurance coverage requirements within the CMAR contract. With this proposed amendment, there is an expected savings of \$5.25 million on insurance coverage.

These three changes to the Contract are specifically called out in the Recommendation to Award below.

The expanded Barry Rose Facility will allow the City to consolidate wastewater treatment operations, abandoning the Longwood Plant and reducing associated operating and electrical costs. The new facility will employ modern efficient treatment technologies improving effluent quality, reducing potential for operational upsets, lowering operational costs, while providing increased treatment capacity.

Current Schedule and Next Steps

The work of GMP 1 is scheduled to begin in early July 2024, with the City's issuance of a Notice to Proceed and clearance from the Texas Historical Commission and FEMA/Corps of Engineers. The NTP will initiate the start of site grading, drainage, and fill operations to establish positive site drainage and detention first. Integral to that work is the start of detention pond excavation, yard piping, and site utilities. Earthwork for the SBR foundation is scheduled to begin in early November, with cast-in-place concrete work for the SBR basins to begin mid-January 2025. The SBR structure is scheduled to be completed mid-November 2025. GMP 1 is projected to be largely complete by October 2025.

GMP 2 is now scheduled to bid in December 2024, with intentions to present GMP2 to Council for award in late December 2024 or early January 2025 and begin work in late January 2025. The bidding process will follow the same practices established for GMP 1. GMP 2 contains the Balance of Plant costs for Barry Rose and the work of the Longwood Lift Station and associated pumping and electrical equipment and is schedule to be complete in October 2027

GMP 3, containing the Longwood force main work will bid in May 2025 and scheduled for presentation to Council in July. The work of GMP 3 is scheduled to begin later that same month and complete by or before June 2027 to match up with the completion of major works at both Longwood and Barry Rose. Start-Up and Commissioning of the Barry Rose plant, Longwood lift station and force main is scheduled to begin in June 2027, with final completion anticipated by February 2028, with demolition of portions of the old infrastructure occurring concurrently through February 2028. Overall project completion is currently scheduled for February 2028.

Budget Info

Barry Rose (WW1502)

Funding Sources	Series	To Date	Future	Total Budget
General Revenue - Cash				-
Certificates of Obligation				-
W/S Revenue Bonds	2016A	1,505,000		1,505,000
W/S Revenue Bonds	2017C	400,000		400,000
W/S Revenue Bonds	2018B	5,101,526		5,101,526
W/S Revenue Bonds	2020B	620,000		620,000
W/S Certificates of Obligation	2022C	6,920,265		6,920,265
W/S Certificates of Obligation	2023C	32,032,265		32,032,265
W/S Certificates of Obligation	TBS 2024		18,277,868	18,277,868
W/S Certificates of Obligation	TBS Future		72,866,000	72,866,000
Impact Fee - Cash				-
Impact Fee - Debt	TBS 2024		18,277,867	18,277,867
Impact Fee - Debt	Future		72,866,000	72,866,000
Impact Fee- Debt				-
Impact Fee - Debt				-
Other Funding Sources - Fund Balance		513,209		513,209
Total Funding Sources		47,092,265	182,287,735	229,380,000

Expenditures	To Date	Future	Total
PER	1,218,803	37,406	1,256,209
Land	6,467,670	2,532,330	9,000,000
Design	17,577,450	1	17,577,451
Construction	1,736,548	189,589,796	191,326,344
Construction Management/Inspection			-
Construction Materials Testing			-
FF&E		500,000	500,000
Total Expenditures	27,000,471	192,659,533	219,660,004

Project Contingency	4%	9,719,996
Project Balance		-

Longwood (WW1906)

Funding Sources	Series	To Date	Future	Total Budget
General Revenue - Cash				-
Certificates of Obligation				-
W/S Revenue Bonds	2020B	1,056,000		1,056,000
W/S Certificates of Obligation	2022C	490,000		490,000
W/S Certificates of Obligation	2023C	4,454,000		4,454,000
W/S Certificates of Obligation	TBS 2024		17,573,000	17,573,000
W/S Certificates of Obligation	TBS 2025		14,500,000	14,500,000
Impact Fee - Cash				-
Impact Fee - Debt				-
Other Funding Sources - Fund Balance				-
Total Funding Sources		6,000,000	32,073,000	38,073,000

Expenditures	To Date	Future	Total
PER			-
Land		2,600,000	2,600,000
Design	4,053,342	90	4,053,432
Construction	612,229	27,864,339	28,476,568
Construction Management/Inspection			-
Construction Materials Testing			-
FF&E			-
Total Expenditures	4,665,571	30,464,429	35,130,000

Project Contingency	8%	2,943,000
Project Balance		-

Schedule Info

Design Start	February 2023
Bid Start	April 2024
Construction Start	July 2024
Proposed Construction Completion	February 2028

Recommendation

Staff recommends Council approval of the proposed amendments to the contract, replacing the Risk Sharing Plan and accept the Cost Savings Sharing Plan, updating the current Staff Labor Rate Table, all cost of which are already included in the pricing totals, modify the floods and windstorm coverage requirements, and awarding the modified contract for GMP 1 to McCarthy Building Companies in the amount of \$66,570,019.00. The overall project is within budget, and the expected completion date is February 2028.

Previous Memos

[09/21/16](#), [05/04/17](#), [03/15/18](#), [11/08/18](#), [10/10/19](#), [07/30/20](#), [09/16/21](#), [04/14/22](#), [06/07/22](#), [06/09/22](#), [02/09/23](#)

Map

