



4/18/2024  
 To: Mayor and Council  
 Update as the JHEC project nears successful completion. There is a relatively small (0.4%) forthcoming change order to close the project out for the maintenance, repairs, and operations assistance provided by PLW to keep the existing plant operational during construction.  
 -Trent

**JHEC Water Reclamation Facility Expansion (JHWRF)**

Is it in Budget?		Is it on Schedule for the Current Phase per the Contract?		Community Benefit	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		<i>This project will provide Citizens of Pearland with an expanded facility (from a 4MGD to a 6MGD) to accommodate continued population and economic growth</i>
<b>Project Phase?</b>					
Construction					

**Project Highlights:**

The new completion date is June 3, 2024.

This memo is to provide an update and to provide information regarding the forthcoming change order:

**Project Update:**

- The new Headworks have been fully commissioned and turned over to the City for general use.
- Demolition of the old Headworks began in February 2024.
- Process mechanical piping is approximately 97% complete.
- The Operations building is complete.
  - The certificate of occupancy is expected by the end of April 2024.
- The Sludge Building process mechanical piping is complete.
- The Motor Control Center (MCC)2 final terminations are complete.
  - The system should be ready for commissioning and handed over to the City by the end of April 2024.
- T-Filters concrete structure is complete.
  - CenterPoint is scheduled to remove the existing poles and transfer the permanent power by the end of April 2024.
- SBR 1 and the associated blower cleaning and demolition is complete.
  - The process mechanical and electrical installation was completed in March 2024.
  - The instrumentation work should be complete by the end of April 2024.
- SBR 2 and the associated blower cleaning and demolition is complete.
  - The process mechanical and electrical installation should begin by the end of April 2024.
  - The instrumentation work is scheduled to begin in May 2024.



- SBR 3 and the associated blower cleaning and demolition is complete.
  - Demolition of the old blowers and existing aerated air pipe is complete.
  - The process mechanical and electrical installation should begin by the end of April 2024.
  - The instrumentation work should be complete by mid-May 2024.
- SBR 4 and the associated blower were handed off to the City in January 2024.
- Demolition of Lift Station 1 began in February 2024.
- Site paving began in February 2024.

### **Upcoming Change Order:**

The project expands the plant from 4 million gallons per day (MGD) to 6 MGD and rehabilitates the existing 4 MGD all while keeping the plant operational. Due to the condition of the existing 4 MGD and staffing issues the plant has experienced ongoing issues with existing operations and equipment that fall outside of the scope of the project, contributing to the project delay. The project team has worked to re-sequence some of the work items to mitigate the impact of the unforeseen operational issues, but the ongoing equipment failures and unanticipated site conditions have impacted the scope, schedule, and budget. Additionally, some of the operational issues were impacting our Texas Commission on Environmental Quality (TCEQ) permitting compliance. These ongoing operational necessities are also the basis for the change order that is being presented to Council on April 22, 2024.

The Public Works and Engineering administrator began to authorize the Construction Manager At-Risk (CMAR), PLW to assist with plant operations to avoid further TCEQ infractions during a time when the Wastewater Operations department was experiencing staffing shortages. The department had several vacant positions and could not keep up with the repairs internally. As plant failures continued, assistance also became necessary for basic operations and the avoidance of emergency situations pertaining to the wastewater treatment process. Assistance from the contractor was the most efficient response to addressing the issues instead of procuring services of another contractor to work around the ongoing expansion project. As a result, the these unforeseen costs associated with maintenance of plant operations (MOPO), the additional expenses will need to be added to the contractor's P.O. for work that was out of original project scope and for labor necessary to assist with repairs, installations and maintenance of equipment and processes, as the project nears substantial completion and project close-out.

The City is receiving financial assistance for the JHWRF project through a loan program from the Clean Water State Revolving Funds (CWSRF). The Texas Water Development Board, which is the administrator of the funding source, closely monitors each reimbursement request to ensure adherence to the terms of the agreement. Funds from CWSRF can only be used to create or improve the wastewater treatment facilities and can't be used for operations and maintenance. To manage the program compliance, the project team used the CMAR's project management software, Procore, to track the equipment used, labor cost, and schedule impact of the operational failures.



The equipment and operational failures were critical to the wastewater treatment process and could not be delayed or ignored. PLW’s operational assistance included equipment rental (temporary blowers and connections, Connexes for COP equipment, temporary non-potable water pump, chopper pumps, and the extension of a crane rental), repair of existing equipment (replacement of piping and valves on existing T-filters and flow meters on existing Headworks), installation of equipment that was not in the original scope of work (480 -volt breaker, conduit, and terminations, and pumps for draining SBR 2 and 3), operational assistance labor included an Excavator Operator, Crane Operator, General Operators, Welders and Welder Helpers. PLW equipment used to assist included loaders, rollers, dozers, forklifts, and excavators. In addition to the equipment already mentioned, other material costs included additional PVC pipe, flowable fill Concrete, Fuel for by-pass pumping for 9 months, and flood lights. Some of the costliest operational assistance included the removal of wall pumps at existing SBR 1 and 2 and maintained bypass pumps on Lift Station #1. The contractor has been de-ragging, fueling, and maintaining the rental of two chopper pumps at Lift Station #1, and renting and maintaining hoses at Aerated Sludge Holding Tanks #1 and #2. The rental of these pieces of equipment and the labor to maintain the operations of the equipment are examples of plant assistance provided by the contractor that had a major impact on the schedule and the project budget.

Of the \$630,900 remaining within the project’s contingency account, \$294,202.65 is intended to be utilized to cover the outstanding cost for the operational assistance provided by PLW. This change order amount is less than half a percentage point (0.4%) of the overall cost of the project.

**Budget Info:**

<b>Funding Sources</b>	<b>Series</b>	<b>To Date</b>	<b>Future</b>	<b>Total Budget</b>
General Revenue - Cash				-
W/S Revenue Bonds				-
W/S Revenue Bonds	2021A	75,000,000		75,000,000
W/S Revenue Bonds				-
W/S Certificates of Obligation	2022C	5,131,000		5,131,000
System Revenue - Cash				-
Impact Fee - Debt				-
Impact Fee - Debt				-
Impact Fee - Cash				-
Other Funding Sources		462,236		462,236
<b>Total Funding Sources</b>		<b>80,593,236</b>	<b>-</b>	<b>80,593,236</b>
<b>Expenditures</b>				
		<b>To Date</b>	<b>Future</b>	<b>Total</b>
PER		462,235	1	462,236



Land	100	-	100
Design	5,717,000	183,000	5,900,000
Construction	72,855,689	244,311	73,100,000
Construction Management/Inspection			-
Construction Materials Testing			-
FF&E	221,680	278,320	500,000
<b>Total Expenditures</b>	<b>79,256,705</b>	<b>705,631</b>	<b>79,962,336</b>
<b>Project Contingency</b>	<b>1%</b>		<b>630,900</b>
<b>Project Balance</b>			<b>0</b>

**Schedule Info:**

<b><i>Design Start</i></b>	April-19
<b><i>Bid Start</i></b>	September-19
<b><i>Construction Start</i></b>	July-21
<b><i>Construction Completion</i></b>	June-24

**Project Manager:** Jennifer Lee

**Construction Manager:** Ardurra Group

**Contractor:** PLW Waterworks

**Scope:** This project consists of a 2 MGD expansion to the existing 4 MGD Sequential Batch Reactor (SBR) water reclamation facility that will increase the treatment capacity to 6 MGD (plus peak) at the John Hargrove Water Reclamation Facility (JHEC WRF) and includes critical infrastructure to be sized for the ultimate capacity of 8 MGD. The expansion project uses the Construction Manager At-Risk (CMAR) project delivery method. The project includes new headworks, refurbished and new pumps for the influent lift station, 2-1 MGD basins, blowers, and tertiary treatment along with SCADA upgrades.

**Justification:** This 2 MGD expansion is based on growth projections for the JHEC WRF service area and additional flows to be diverted to the JHEC WRF from the Longwood Service Area and the future development in the south. In 2016, flows exceeded the TCEQ requirement of 75% of permitted allowances, which required the start of design and staff requesting TWDB funding. In



2019, several months exceeded the 90% permitted threshold, which predicated the need to finalize the design and begin construction.

**Previous Memos:** 02.21.19, 05.02.19, 10.17.19, 11.14.19, 01.16.20, 07.16.20, 10.01.20, 01.14.21, 02.11.21, 05.13.21, 06.10.21, 10.28.21, 03.24.22, 06.04.22, 09.01.22, 04.27.23, 11.16.23

**Project Location Map:**

**JOHN HARGROVE WATER RECLAMATION FACILITY**





**Project Photos:**



Aerated Holding Tanks



SBR 1



Motor Control Center (MCC) 2





Site Works (paving)