



28 October 2021
 To: Mayor and City Council members
 Update on the major expansion and upgrades to our JHEC wastewater plant. Adding treatment capacity of 2MGD, \$80 million project underway and about 10% complete. Will take to December 2023 to complete. Awarded early works project was wise. Clay

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 checked="" type="checkbox"/> Yes	<input 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>
Project Phase?				
Construction				

Highlights:

Contractor began mobilization on July 1, 2021

- The Construction Manager At Risk (CMAR) completed the pre-construction services on June 30, 2021 and immediately began construction.
- **To date, the CMAR has:**
 - Begun draining the Sludge Holding Tanks-expected to be complete by October 22nd.
 - Demolished the sludge building.
 - Demolished the Surge Basin.
 - Poured the slab for the Construction Materials Testing (CMT) laboratory to conduct on-site testing:
 - Due to the complexity of the JHEC expansion, CMT consultant agreed to set up an on-site laboratory in order to expedite the test results, and to avoid multiple trip charges because of the frequency that would be necessary to test aggregates, concrete, and soils.
 - The site lab is supported by a main off-site laboratory for the more sophisticated tests.
 - Established a construction entrance.
 - Established site parking area.
 - Completed the excavation for Sequential Batch Reactors (SBR) 5 & 6.
- The construction plans were resubmitted to Permits to incorporate changes that were made during the bidding phase. The project team resubmitted the drawing to the Permits Group to make sure that the changes received City approval before being implemented.
 - The Issue for bid drawings received permit approval prior to the contractor bidding out the various work packages.
 - When the CMAR bid the project, potential contractors proposed improvements to the design, the sequencing, and materials that modified the construction drawings that were previously permitted.
 - The improvements do not impact the Guaranteed Maximum Price (GMP), but they did result in revisions to some of the plan sheets. Some of the changes included:
 - The removal of the Influent Lift Station hatch.



- The addition of valves to the lift station.
- Adjustments to the overall headworks design.
- Additional filters and belts to the sludge building.
- Additions to the UV system.
- Changes to the hot water recirculation pumps.
- Additional building signage.
- The contractor is working on a compressed schedule because some material has arrived earlier than previously anticipated due to the Early Works Package (EWP) approval.
 - The EWP has had a significant, positive impact on the project. Since pricing for materials were locked in and ordered in the first and second quarter of this year, the project is not being subjected to the volatility of the current construction market. The cost of materials has continued to increase and certain components that were released for fabrication/shipment with the EWP are now experiencing double and triple delivery schedules.

Ongoing work includes:

- Work on the new Non-Potable Water (NPW) tank should be complete by the end of October.
- The NPW booster pump transfer station should be complete by November 6.
- Duct banks to the NPW Chemical building should be complete by November 19.
- Placement of subgrade for the Headworks should be complete by December 15.

The NTP for Pre-Construction was issued on February 10, 2020. The work contained in the GMP began in July 2021. As of latest pay estimate, the project is 9% complete by expenditure and 10% complete by time expended. The project is scheduled to be complete on December 27, 2023.

Budget Info:

Funding Sources	Series	To Date	Future	Total Budget
General Revenue - Cash				-
W/S Revenue Bonds				-
W/S Revenue Bonds				-
W/S Revenue Bonds	2021A	37,500,000		37,500,000
W/S Revenue Bonds	TBS 2022	1,100,000		1,100,000
System Revenue - Cash			\$1,465,500	1,465,500
Impact Fee - Debt	2021A	37,500,000		37,500,000
Impact Fee - Cash		1,100,000	1,465,500	2,565,500
Other Funding Sources		462,236		462,236
Total Funding Sources		77,662,236	2,931,000	80,593,236

Expenditures	To Date	Future	Total
PER	462,235		462,235
Land			-
Design	5,717,000		5,717,000
Construction	70,597,942		70,597,942



Construction Management/Inspection	1,670,000		1,670,000
Construction Materials Testing	446,969		446,969
FF&E		500,000	500,000
Total Expenditures	78,894,146	500,000	79,394,146

Project Contingency	1%		1,199,090
Project Balance			(0)

Schedule Info:

	<i>Base Line</i>	<i>Current</i>
<i>Design Start</i>	March-19	April-19
<i>Bid Start</i>	November-20	September-19
<i>Construction Start</i>	January-21	July-21
<i>Construction Completion</i>	December-23	

Upcoming Work Items:

- Pour foundation slab for the Sequencing Batch Reactors (SBR) 5 & 6 should begin the week of November 15th.
- Begin work on the Tertiary Filter the week of November 8th.
- Blower building #2 work should begin by the end of November.
- UV system demo should begin by the end of November.
- Begin work on the new Operations building week of November 13th.

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 CMAR project delivery method. The project will include 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% which required the start of design and staff requesting TWDB funding. In 2019, several months exceeded the 90% threshold which predicted 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



Project Location Map:

JOHN HARGROVE WATER RECLAMATION FACILITY



Legend/Notes

WTP Wastewater Treatment Plant



1:7,715
 1 inch = 640 feet
 NORTH
 This product is for informational purposes only and may not be prepared or used for legal or engineering purposes without the assistance of a professional engineer.
 MAP PREPARED: JANUARY 24, 2018



Project Photos:



Demolition of the Surge Basin



Construction Materials Testing on-site Laboratory location



30" and 48" ductile iron pipe on the east side of the plant.



Construction of the Non-Potable Water (NPW) tank



Site drainage on the south side of the plant site.



Backfilling the future Headworks area



Removal of material from SBR 5 & 6 locations