31 August 2022
To: Mayor and City
Council mebmers
Update on the big expansion project at JHEC wastewater facility. Clay

JHEC Water Reclamation Facility Expansion (JHWRF)

Is it in Budget?		Is it on Schedule for the Current Phase per the Contract?		Community Benefit
■ Yes	☐ No	■ Yes	☐ No	*This project will provide Citizens of Pearland with an expanded facility (from a 4MGD to a 6MGD) to accommodate continued population and economic growth*
		Project Phase?		
		Construction		

Highlights:

Headworks and yard piping:

- The concrete work at the Headworks which began in April is scheduled for completion at the end of August.
- PLW has been working to mitigate the supply chain impact to the project.
  - Alternative materials are being considered for approval by the engineer.
  - Work is being done out of sequence to allow additional time for materials that are taking longer to arrive than anticipated.
  - PLW is working with suppliers to expedite the delivery of materials.
  - HDPE pipe has been substituted for ductile iron as approved by the Engineer
    - The pipe sub-contractor has been having problems with ordering and receiving large diameter ductile iron pipe. The pipe delivery date was moved from November 2021 to February 2022, and then to April 2022.
    - In April, the sub-contractor could not provide a revised delivery schedule.
    - The decision was made to install HDPE pipe below ground to mitigate the impact the pipe and fittings shortage is having on the overall schedule.
      - HDPE functions as well as, and in some applications, better than ductile iron pipe because it is a more durable product that can withstand greater loads.
      - HDPE pipe cost more than ductile iron, but the cost is offset by the impact that waiting for an unknown delivery date of the ductile iron pipe will have on the critical path.
      - The contractor's contingency is absorbing the additional cost of the HDPE pipe, so there is no negative impact to the project budget because of the pipe substitution.

Sludge Building:

- The Sludge Building overhead door installations are complete.
- Miscellaneous metal railings and roof installation is approximately 50% complete.

- Process mechanical piping installation began in June and is expected to be complete by the end of August.

UV System:

- The new UV System is operational.
    - The contractor held a training session in June for City staff.

Tertiary Filters (T-Filters)

- Piping for the Tertiary Filters was completed in May.
- The new Tertiary Filters equipment at existing basins is completely installed, and operations was turned over to the City in June.
- Piping work on the three new basins was completed in May.
- In June, work began on the foundation and walls on the three new basins.

Sequence Batch Reactors (SBR)

- Concrete work is complete on SBR 5 and 6.
    - SBR5 and SBR6 have both past visual inspections.
    - Control water inspection is pending
- The decanters are in place and piping installation is in progress.
- Leak test was performed on the basins in June.

Chemical Building

- The Chemical building structure is complete.
- The mechanical equipment installation is approximately 50% complete.

Ongoing work includes:

- The generators have been installed on the pads.
    - They are pending being connected.
    - The four new diesel-powered stand-by generators will power the entire plant in an emergency situation.
- Operations Building steel structure.
- Complete the installation of the blowers in the Blower buildings.
- Continued work on the Non-Potable Water (NPW) pump station.

The project is continuing to experience minor material/equipment delays. The arrival date for electrical is still uncertain. Major equipment that has not arrived include the transformers, switch gear, switchbox, and Motor Control Centers (MCCs). The substitution of the Ductile Iron pipe with HDPE pipe for below ground installation has greatly reduced the negative impact to the overall project schedule. The schedule has slipped slightly with the supply chain delays, but overall, the project has not been impacted beyond the scheduled completion date.

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 Certificates of Obligation	2022C	2,565,500		2,565,500
System Revenue - Cash				-
Impact Fee - Debt	2021A	37,500,000		37,500,000
Impact Fee - Debt	2022C	2,565,500		2,565,500
Impact Fee - Cash				-
Other Funding Sources		462,236		462,236
Total Funding Sources		**80,593,236**	**-**	**80,593,236**

Expenditures	To Date	Future	Total
PER	462,235		462,235
Land			-
Design	5,717,000		5,717,000
Construction	70,627,372		70,627,372
Construction Management/Inspection	1,670,000		1,670,000
Construction Materials Testing	446,969		446,969
FF&E		500,000	500,000
Total Expenditures	**78,923,576**	**500,000**	**79,423,576**

Project Contingency	**1%**	**1,169,660**
Project Balance		**(0)**

Schedule Info:

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

Upcoming Work Items:

- Complete the installation of the NPW piping and Scrubber equipment.
- Installation of the walk bridge around SBR 3,4, and 5.
- Start-up on SBR 5 and 6 expected to begin late September, mid-October.
- Begin work on Lift Station 2.
- Continued coordination between staff and the contractor in the performance of the operational program.
    - Staff will meet with the contractor and the electrical sub-contractor to ensure the continuation of operations during the rehabilitation of the existing basins.
    - Staff is providing data and reports to the contractor pertaining to integration concerns during the rehabilitation.

- Begin by-pass pumping on Lift Station2

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, 10.28.21, 03.24.22, 06.04.22

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 be suitable for legal, engineering, or surveying purposes.

MAP PREPARED: JANUARY 24, 2019

Project Photos:

Operations Building Steel Structure

Setting forms and re-bar at the Headworks building

New walkway between SBR 4 and 5

Large diameter HDPE pipe arriving on site

Red concrete pour for ductbank