



9 June 2021  
 To: Mayor and City Council members  
 Progress update on the new surface water treatment plant construction. Awarded early works packages completing and went very well, continuing progress. Water production expected early 2023. Clay

# Surface Water Treatment Plant

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 up to 10 mg of safe clean drinking water to accommodate continued population and economic growth</i>
<b>Project Phase?</b>					
Construction					

### Highlights:

**Pre-Construction Contract \$1,092,320 Returning \$51,503, Actual Cost= \$1,040,817**

- The scope of work included in the Pre-Construction Services for the Project is complete and is being closed out. This contract included \$992,320 in pre-Construction Services plus a \$100,000 Owner's Allowance. The \$48,497 spent from the Owner's Allowance included \$14,679 for a furnishings consultant contract and \$33,818 for an internet-based project surveillance system called OxBlue. **This will return \$51,503 to the Construction Contract Contingency line item in the contract.**

**Work on Early Works Package 1 (EWP1) Awarded Feb. 10, 2020 in the amount of \$7,479,256 Returning \$335,000, Actual Cost = \$7,144,256**

- Rough excavation of the pond is now complete. More detailed work in the pond, including pilot channels and outfall weir continues as weather allows. The access road to the south area is also being constructed as components of the Balance of Plant.
- Site grading for interim drainage during construction is completed. This allows work force to return to work as soon as rain has stopped and limits additional lost time due to adverse site conditions after rain events.
- Heavy Temporary power circuit is installed and functioning as well as all temporary support facilities including temporary water wells
- Work of this package has been completed on Schedule and In Budget and will be returning \$334,000 to the Construction Contingency line item in the contract. These funds will remain in the contract but are now under the Owner's Contingency requiring the City's authorization prior to use.**

**Work on Early Works Package 2 (EWP2) awarded Feb. 24, 2020 in the amount of \$13,758,502, Returning \$330,000, Actual Cost = \$13,458,502**

- Deep foundation work for the Sludge thickener, dewatering, Wash-water Recycle Sump and Return Flow Pump Station within the Solids Processing area have been completed and work is progressing on above ground components of these facilities.



- Ground Storage Tank (GST) is complete and water tested. The tank will remain partially filled to maintain soil compression and will provide fire water supply for the site until the plant is operating.
- Membrane filter system is in procurement after several design detail iterations. Shop drawings are in review and will finalize in the next 60 days allowing the CMAR to identify final pricing for this equipment.
- **Work of this package has been completed except for continued maintenance of the Storm Water Pollution Protection Plan (SWPPP). The remaining balance of \$249,705 will be returned to the CMAR Contingency line item in the contract until the SWPPP line item is billed out and no additional costs are uncovered.**

**Guaranteed Maximum Price covering the Balance of the Project was awarded Aug. 2020 in the amount of \$113,667,603 bringing the total contract amount, including EWP1 & EWP2, to \$135,997,681**

This Balance of Work for the Project which included: Transmission pipelines, Yard Piping, Site Paving, Site Fencing, Horizontal, Vertical and Split Case Pumps, Slide and Weir Gates, Belt Filter Presses, GAC Equipment, Electrical, Instruments and Control, Generators, Raw Water Intake & Pump Station, Pre-Treatment Structure, Membrane, Chlorine and Chlorine Dioxide Buildings, Administration/ High Service, Operations, Electrical and Maintenance Buildings.

**Among the work progress to Date:**

- Canal Bi-Pass has been completed and is in operation while work within the canal proceeds. This includes partial paving of the canal bottom, installation of the Raw Water Intake structure and the Filtrate Water discharge.
  - The Bi-Pass channel was initially intended to be a temporary means of obtaining access to a dry bottom canal. However, talks with GCWA led to agreement that the widened section of GCWA's canal could remain providing the plant intake with a larger area from which to draw.
  - This also provided access for the installation of the filtrate return to the canal.
- Raw Water Intake Pump Station foundation was installed in late April. Walls of the solids separation/straining compartments are being formed
- Chlorine / Chlorine Dioxide foundation is in construction
- The Pre-Treatment Basin bottom is in place with the sedimentation compartment walls going in. Plate settler basins are being formed and reinforcing is going in.
- The building package work has begun with the installation of drilled foundations for the High Service Pump Building (HSPB) and supply header piping trench
- Belt Filter Press Filtrate separation building foundation work began with a design change to improve drain collection piping and incorporate changes required to return filtrate to the canal.
- Work began on the Transmission lines:
  - Segment 2 along Kingsley began installation of the 30-inch line along Kingsley north of the Magnolia intersection
  - Segment 3 began installation on the 16-inch line between the Kirby Water Plant and the intersection of Broadway and Kingsley.
  - Staff is in talks with Fort Bend County & TxDOT along with the designer for the Broadway overpass of FM521 to modify the existing design for the City's transmission line in this location. Fort Bend's project will acquire Right of Way for the transitions to the overpass. The land



acquisition affects Segment 4 and part of Segment 5 will be rerouted to avoid the intersection and grade separation at this location.

- As of Pay Estimate 17 (excluding EWP1 and EWP2 which are now complete). The project is 12.8% complete by expenditure (\$14.5M/\$113,667,603) to date and 10.7% complete by time expended (75 days / 700 days for Balance of Plant) to date.

**Budget Info:**

Funding Sources	Series	To Date	Future	Total Budget
W/S Revenue Bonds	2017B	6,012,500		6,012,500
Impact Fee - Debt	2017B	6,012,500		6,012,500
W/S Revenue Bonds	2018A	4,325,000		4,325,000
Impact Fee - Debt	2018A	4,325,000		4,325,000
W/S Revenue Bonds	2019A	10,500,000		10,500,000
Impact Fee - Debt	2019A	10,500,000		10,500,000
W/S Revenue Bonds	2020A	53,800,000		53,800,000
Impact Fee - Debt	2020A	53,800,000		53,800,000
W/S Revenue Bonds			14,562,500	14,562,500
Impact Fee - Debt			14,562,500	14,562,500
Cash				-
Other Funding Sources				-
<b>Total Funding Sources</b>		<b>149,275,000</b>	<b>29,125,000</b>	<b>178,400,000</b>

Expenditures	To Date	Future	Total
PER	8,772,583		8,772,583
Land	104,941	200,000	304,941
Design	15,366,103	1,550,000	16,916,103
Construction	135,997,681	4,050,000	140,047,681
Construction Management/Inspection	3,125,014		3,125,014
Construction Materials Testing	462,860	100,000	562,860
FF&E		1,500,000	1,500,000
<b>Total Expenditures</b>	<b>163,829,182</b>	<b>7,400,000</b>	<b>171,229,182</b>

<b>Project Contingency</b>	<b>2.5%</b>	<b>4,500,000</b>
<b>Project Balance</b>		<b>2,670,818</b>

Staff will be reducing the project budget at mid-year.

**Schedule Info:**

	Base Line	Current
<b>Design Start - Package 1</b>	August-19	September-19
<b>Design Start - Package 2</b>	February-19	March-19
<b>Design Start - Package 3</b>	August-19	September-19
<b>Bid Start</b>	March-20	January-19
<b>Construction Start</b>	May-20	June-20
<b>Construction Completion</b>	December-22	



### **Upcoming Work Items:**

- Work will continue on the Pre-Treatment Basin and Chlorine Building
- Foundation work will continue on the De-Watering Building
- Work will continue on the Raw Water Intake lift station and the Filtrate discharge
- Work will continue in the site detention pond outfall construction and constructing access roadway around the east side
- Work will continue on the High Service Pump Building
- Work will continue in the canal with dredging and paving
- Work will continue on the Broadway Transmission line and re-design of the Segment 4 and 5 to accommodate Fort Bend and TxDOT
- Staff will issue a separate design contract for the addition of a second Ground Storage Tank to be built at the Kirby Water Plant

**Project Manager:** Skipper Jones

**Construction Manager:** Ardurra Group

**Designer:** Pkg #1 Freese & Nichols, Pkg #2 CSM Smith, and Pkg #3 Stantec

**Contractor:** PLW Waterworks

**Scope:** Pilot testing, design, and construction of a pre-sedimentation basin, 10 MGD Surface Water Treatment Plant and associated distribution system. This project will treat raw water from the Gulf Coast Water Authority (GCWA) canal for distribution throughout the City's water system. The plant will be located on City property on CR48 south of CR59, which is adjacent to the GCWA canal. Pilot testing began in FY2018 and will be followed by design and construction. The project is scheduled to be completed over a five-year period with new capacity available by 2022/2023. Phase 1 of the distribution system is planned to include 24" - 36" pipelines from the Surface Water Plant to the FM 521 and FM 1128 corridors. Installation of fiber to serve the City's SCADA system.

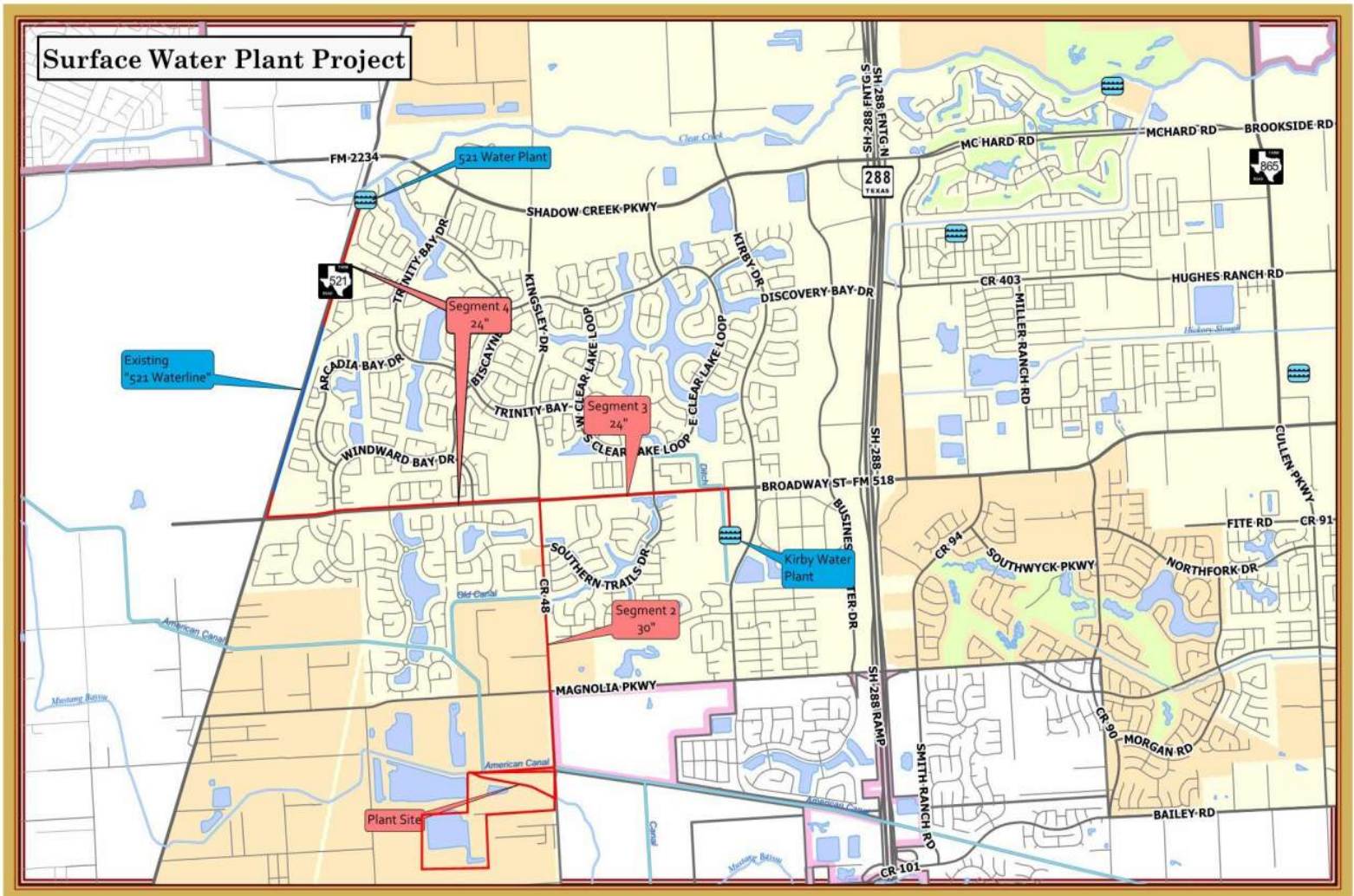
**Justification:** The project will provide additional potable water capacity to meet demands of northern Brazoria County as the region continues to grow. The 2012 Water Model Update based on growth projections established that the demand for an additional 10 MGD would need to be met by 2022/2023.

**Previous Memos:** 6/16/16, 2/2/17, 3/9/17, 4/13/17, 3/29/18, 4/19/18, 1/10/19, 2/21/19, 3/28/19, 8/1/19, 8/8/19, 1/23/20, 3/05/20, 4/16/20, 9/17/20, 3/4/21





### Project Location Map:





## Project Photos



High Service Pump Building Foundation showing Supply Header Pipe Trench



Chlorine/ Chlorine Dioxide building foundation



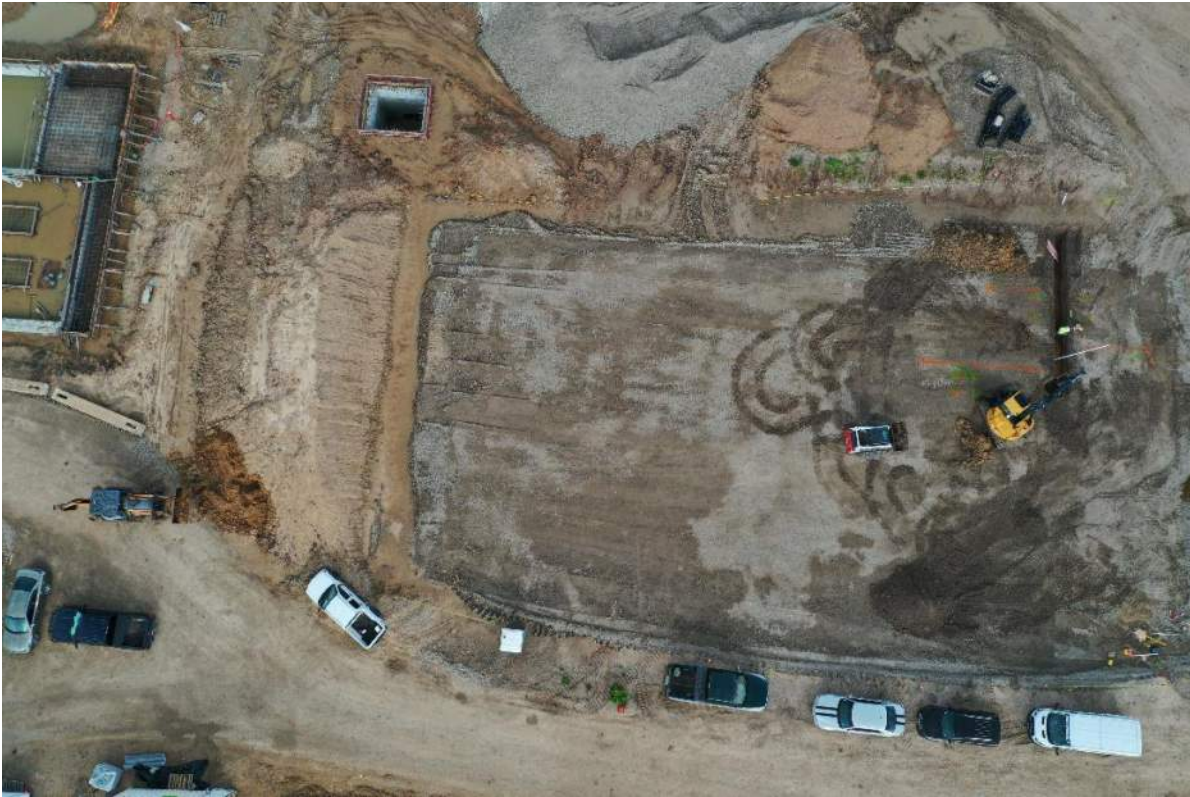
PreTreatment Basin & Structure





Raw Water Intake Channel & Pump Station





Belt Filter Press/ Filtrate Separation building foundation