



9/16/2021

To: Mayor and City Council members

Update on the progress of a major water quality project to return the Magnolia and Bailey wells to service. A forthcoming design contract amendment requiring Council action is detailed. The design modifications will significantly reduce the construction costs.

-Trent

Memo

To: Clay Pearson, City Manager
From: Morgan R Early, Project Manager
CC: Trent Epperson, Deputy City Manager
Robert D. Upton, P.E., Director of Engineering & Public Works
Skipper Jones, Assistant Director of Capital Projects
Eric Hammond, Assistant Director of Public Works
Date: September 16, 2021
Re: Bailey Water Plant Improvements & Bailey Sewer Line (Veterans to Bailey WTP)

Purpose

This memo provides information about the progress on the Bailey Water Plant Improvements & Bailey Sewer Line (Veterans to Bailey WTP) projects' status and the forthcoming proposed design contract amendment for Enprotec / Hibbs & Todd (eHT). This amendment is scheduled for presentation to Council on the September 27, 2021 meeting agenda.

Background

Both the Bailey water well and the Magnolia water well have elevated levels of manganese and iron that cause taste, odor, and appearance issues. These items are secondary contaminants that fall under the secondary regulations list that do not affect the safety of the water and so are considered nuisance constituents due to the color, taste, and odor they impart. This project will address these secondary contaminants at both plants by installing an additional treatment process for the plants. Both water wells are necessary per our Water Master Plan and Water Model to meet regulatory capacities as the City builds-out. The project is part of our overall water quality improvement efforts and will significantly reduce or eliminate the water quality issues allowing the plants to return to service.

Council awarded a design contract to eHT in January 2019. **Phase 1** of this project installed a new 1 MG prestressed concrete Ground Storage Tank (GST) to replace the existing welded steel tank. Construction of Phase 1 was awarded to DN Tanks in July 2019, and the **Phase 1 was completed in June 2020.**

The design consultant provided a draft Basis of Design Report for the treatment process while Phase 1 construction was in progress. That report recommended a common treatment system for both plants located at the Bailey plant prompting the addition of a transmission line from the Magnolia as well as a sanitary sewer line that would carry the wastewater generated by the selected treatment process.

As the design progressed, an analysis of the planned gravity sanitary sewer line versus a lift station and force main was performed due to the required depth of the gravity line being over 29' deep due to the starting depth to clear the ditch next to the water plant. Open cutting a line of this depth will have significant impacts on the Recreation Center & Natatorium (RCN), requiring removal/replacement of the landscaping, signage, driveways, and a portion of the parking lot. Alternatively, to install a gravity line at this depth with trenchless methods is extremely expensive. The analysis showed a local lift station that will serve the water plant, future Fire Station #7, and the surrounding area owned by Pearland Independent School District (PISD) will eliminate those disruptions and reduce project costs by approximately \$1.0M.

Phase 2 now includes: A treatment system (Aerelater) to remove the iron and manganese, installation of a waterline to transport water from the Magnolia Water Plant to the Bailey Treatment Plant, installation of a new local Lift Station and Force Main to discharge backwash from the treatment system to the gravity sanitary sewer line at Veterans and Bailey, SCADA integration, and removal of the existing steel GST.

Upcoming Contract Amendment

Two prior amendments for eHT added the water transmission line from the Magnolia plant to the Bailey plant, and the gravity sanitary sewer line.

The current amendment is for the design of the Lift Station and Force Main to replace the gravity line, electrical and pumping upgrades at the Magnolia site determined to be necessary to send the water to the Bailey plant, and additional SCADA programming and controls to communicate with these combined facilities.

eHT has drafted a proposed amendment to account for the design changes needed in the amount of \$119,315.00. Review of the proposal by Engineering and Projects Staff has determined that the proposal is complete and reasonable and will provide the effort needed to complete this project through design, bid, construction, and post construction phases. No additional funds are requested for bid or construction phases in this proposal.

Current Status

The 90% submission was received in March 2021 and reviewed with staff from Engineering and Public Works in April 2021. Coordination with CenterPoint Energy is ongoing to provide natural gas for the new generator. BNSF has reviewed and approved the waterline crossing perpendicular to their existing infrastructure and an agreement to allow the installation has been executed for this work. This agreement provides the City's contractor with the pipeline license needed to work in the Railroad easement.

Next Steps

There is approximately one month remaining to finalizing the design for review by the Technical Review Committee (TRC) prior to issuing a bid-level plan set with the bid advertisement. Upon approval of the amendment, eHT will implement these final details and submit the 100% plans, specifications, and construction estimate. Advertisement for proposals is scheduled for November, with a mandatory pre-bid conference and site visit following. The project will utilize the Competitive Sealed Proposal (Local Gov't Code Chapter 2269), subchapter (B) procurement process.

Once the project has been bid and awarded the construction is expected to begin in January 2022. The construction phase is anticipated at 18 (eighteen) months to substantial completion.

Budget Info

WA1901 – Bailey Water Plant

Funding Sources	Series	To Date	Future	Total Budget
General Revenue - Cash				-
Certificates of Obligation				-
Certificates of Obligation				-
W/S Revenue Bonds	2018B	620,000		620,000
W/S Revenue Bonds	2019B	4,240,000		4,240,000
W/S Revenue Bonds	TBS 2022	7,980,000		7,980,000
Impact Fee - Debt				-
Other Funding Sources				-
Total Funding Sources		12,840,000	-	12,840,000

Expenditures	To Date	Future	Total
PER			-

Land			-
Design	539,376	119,315	658,691
Construction (Tank)	1,596,570		1,596,570
Construction (Pretreatment)		9,576,000	9,576,000
Construction Materials Testing	16,493	60,000	76,493
FF&E			-
Total Expenditures	2,152,439	9,755,315	11,907,754

Project Contingency	6%	800,000
Project Balance		132,247

WW2007 – Bailey Sewer Line

Funding Sources	Series	To Date	Future	Total Budget
General Revenue - Cash				-
Certificates of Obligation				-
Certificates of Obligation				-
System Revenue - Cash		30,000		30,000
W/S Revenue Bonds	2021B	600,000		600,000
W/S Revenue Bonds				-
Impact Fee - Debt				-
Other Funding Sources				-
Total Funding Sources		630,000	-	630,000

Expenditures	To Date	Future	Total
PER			-
Land			-
Design	49,500		49,500
Construction		490,000	490,000
Construction Management/Inspection			-
Construction Materials Testing			-
FF&E			-
Total Expenditures	49,500	490,000	539,500

Project Contingency	14%	90,500
Project Balance		-

Schedule Info

	<i>Base Line</i>	<i>Current</i>
<i>Design Start</i>	December-18	January-19
<i>Bid Start</i>	April-21	November-21
<i>Construction Start</i>	January-22	
<i>Construction Completion</i>	June-23	

Recommendation

Staff will recommend to Council at the September 27th meeting to award the design contract amendment to Enprotec / Hibbs & Todd in the amount of \$119,315.00.

Previous Memos

11/08/18, 08/08/19, 11/07/19, 01/30/20, 04/02/20, 08/06/20, 01/14/21, 05/06/21

Map

