



14 January 2021

To: Mayor and City

Council members

Update on our Bailey Road water plant, to improve capacity and quality that's needed. Will be bidding this spring, completion a year thereafter. Clay

# Bailey Water Plant Improvements & Bailey Sewer Line – (Veterans to Bailey Water Plant)

Is It On Budget?		Is It On Schedule?		Community Benefit
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<i>Improved Water Quality</i>
<b>Project Phase?</b>				
Engineering/Design				

## Phase 2 Highlights:

- Staff received 60% drawings 11/12/20 and a review meeting will be held with City Engineering staff, Consultant, and user groups on 12/15/20 to discuss and review comments.
- Staff provided Consultant with current TCEQ Corrosion Control Study for review to ensure proposed treatment system meets reported methods and measurements City-wide. Existing site chemical tanks for corrosion inhibitor will be retained and remain in operation.
- The Magnolia well water contains similar levels of iron and manganese and any effort to address water quality issues for the greater area must include water from both wells. For that reason Magnolia well was included in the project and will be piped to the Bailey Treatment Plant for treatment of the water and then the water can be utilized in the system.
- Design of water transmission line from Magnolia well site to Bailey Treatment Plant has been completed. Design of waste water sewer line to the collection system is complete.
- Project scope includes this additional piping, valving and operational modifications at Magnolia well site and the transmission line to transfer ground water from Magnolia to the Bailey treatment facility to address water quality issues from the Magnolia well at the one location. Treatment capacity at the Bailey plant has been increased to handle this additional flow from Magnolia (approx. 1.4mgd) for a total of approximately 4.3 MGD of treatment capacity.
- Per the recently completed water model, along with projections of population, the City will need to have all wells, along with the supplies from the Surface Water Pant and the Alice plant in working operation to provide drinking water to meet the peak demands for the forecasted year of 2030.
- Due to market fluctuations on equipment and materials and moving the design from 60 towards 90% has provided the project with the most current engineering costs estimates. The current estimate exceeds the existing budget.
- Based on the additional cost, an analysis was done to see if this is the most cost-effective way to deliver the required peak demands in the future. Staff look at the potential for new wells or other water sources. However, with the quantity needed and the existing information on the quality of water, from the existing two wells, it is highly likely that any new wells in the area will yield the same need for water treatment. Additionally, other sources would require investment in all new infrastructure. With the existing infrastructure in place (wells, pumps, piping and tanks), the addition of the treatment facility to the Bailey water plant is the most cost-efficient methodology to treat water and meet the water demands now and for the future.



**Budget Info:**

Water Treatment 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			4,280,000	4,280,000
Impact Fee - Debt				-
Other Funding Sources				-
<b>Total Funding Sources</b>		<b>4,860,000</b>	<b>4,280,000</b>	<b>9,140,000</b>

Expenditures	To Date	Future	Total
PER			-
Land			-
Design	533,610		533,610
Construction (Tank)	1,596,570		1,596,570
Construction (Pretreatment)		9,576,000	9,576,000
Construction Materials Testing	35,125	60,000	95,125
FF&E			-
<b>Total Expenditures</b>	<b>2,165,305</b>	<b>9,636,000</b>	<b>11,801,305</b>

<b>Project Balance/Contingency</b>	<b>(2,661,305)</b>
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Staff will be requesting additional funds during the mid-year adjustments

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	TBS 2021	600,000		600,000
W/S Revenue Bonds				-
Impact Fee - Debt				-
Other Funding Sources				-
<b>Total Funding Sources</b>		<b>630,000</b>	<b>-</b>	<b>630,000</b>

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			-



<b>Total Expenditures</b>	<b>49,500</b>	<b>490,000</b>	<b>539,500</b>
<b>Project Balance/Contingency</b>			<b>90,500</b>

**Schedule Info:**

	<b>Base Line</b>	<b>Current</b>
<b>Design Start</b>	December-18	January-19
<b>Bid Start</b>	April-21	
<b>Construction Start</b>	July-21	
<b>Proposed Construction Completion</b>	December-22	

**Upcoming Work Items:**

- Approval from BNSF for water transmission line crossing below the Railroad at Magnolia pump station.
- Design consultant will be completing 90% drawings to be submitted for Staff review in January using comments from 60% review meeting. Consultant will provide project manual and technical specifications with 90% submission.
- Details for the Motor Control Center (MCC) and Laboratory Building are being finalized and will be submitted by the consultant for permit approval.
- Water line easement approval from the (2) remaining landowners for the Magnolia transmission line is being finalized. The City currently holds an agreement for these locations from a previous project (Canterbury Water Line).

**Project Manager:** Morgan R Early

**Designer:** Enprotec/Hibbs & Todd (eHT)

**Contractor:** N/A

**Scope:** The Bailey water well has elevated levels of manganese and iron that cause taste, odor and appearance issues though the water product itself remains safe for consumption. Phase 1 of this project is completed, and Phase 2 is in design. Phase 1 of this project was the installation of a new 1 MG concrete Ground Storage Tank to replace the existing welded steel tank. Phase 2 will include: a gravity sanitary sewer line from the Natatorium to the Bailey Plant, a waterline to transport water from the Magnolia Water Plant to the Treatment Plant, and a “green sand” filtration system to treat the manganese and iron issues at the Bailey Plant.

**Justification:** The 2.8 million gallon per day (MGD) well at the Bailey water plant and the 1.4 MGD, well at the Magnolia plant are critical to provide system water quality maintenance and provisions for drought contingency and peak day demands. The City of Pearland has maintained a log of customer complaints regarding water quality. Complaints regarding brown/rusty colored water indicate problems with iron and manganese have occurred when the well is in production.

**Previous Memos:** 11/08/18, 08/08/19, 11/07/19, 01/30/20, 04/02/20, 08/06/20



Project Location Map:

