

10/31/2019

To: Mayor and City

Council members

For replacing an old water tank we `inherited' with the MUD, initializing design and readying to bid April `20. Clay



Southdown Plant Ground Storage Tank Replacement

Scope: Project scope consist of the design to remove and replace the existing 140,000 gallon bolted steel ground storage tank with a new 500,000 gallon welded steel or pre-cast concrete tank and associated yard piping, permanent removal of two existing hydro-pneumatic pressure tanks, and installation of carryable frequency drives (VFD) on none or more of the existing booster pump(s).

Justification: The water well and booster pump station was originally constructed with the subdivision development prior to the area's annexation into the City. Consequently, the City inherited the two original storage tanks. The bolted steel tank has already been decommissioned due to the tank reaching the end of its expected life and showing signs of leaking. Bolted steel tanks generally have a shorter life span than welded steel tanks or concrete tanks, with the decommissioning of this bolted tank it leaves the site with a single 500K-gallon tank to meet the current demand of nearly 1 million gallons per day. With a peaking factor of 2.0, the peak hourly demand for the service area is approximately 1.8 MGD (1,250 gpm). As a result, the well pump can run nearly continuously to maintain water availability during these peak demands. Confirmation is based on the review of SCADA data for the Southdown WP GST Operational Levels for 2018.



Project Manager: Fatema Weekly

Designer: KIT Professionals, Inc.

Contractor: N/A

Budget Info:

Funding Sources	Series	To Date	Future	Total Budget
System Revenue - Cash		350,000		350,000
System Revenue - Cash				-
System Revenue - Cash				-
General Obligation Bonds				-
General Obligation Bonds				-
W/S Revenue Bonds	TBS	2,350,000		2,350,000
Impact Fee - Debt				-
Other Funding Sources				-
Total Funding Sources		2,700,000	-	2,700,000

Expenditures	To Date	Future	Total
PER			-
Land			-
Design	273,068		273,068
Construction		2,243,800	2,243,800
Construction Management/Inspection			-
Construction Materials Testing		23,000	23,000
FF&E			-

Total Expenditures	273,068	2,266,800	2,539,868
Project Balance/Contingency			160,132

Schedule Info:

	Base Line	Current
Design Start	April-19	April-19
Bid Start	February-20	
Construction Start	April-20	
Construction Completion	March-21	

Rain Days: N/A

Highlights:

- Extended Period Simulation (EPS) Water Modeling, performed on the entire city-wide distribution system, has been used to determine peak demand pump requirements and operational parameters for this booster pump station.
- Operational history has shown that this plant’s operation requires additional ground storage. Recommendations from the water model include constructing a 500K gallon ground storage tank within the plant site and adjusting pump sizes and operational sequencing to improve overall plant operation, reduce electrical costs and improve service to the surrounding areas of Southdown, Crystal Lakes and Country Place.
- In preparation of removal of the existing pressure tanks, routine material testing identified low levels of controlled materials requiring special precautions by contractors during scoped demolition work. Quantities did not require remediation prior to beginning work.
- Coordination with CenterPoint Energy to provide gas service for proposed generator has been completed
- Topographic surveying was concluded locating underground utilities within work areas prior to excavation
- Per the project schedule, 60% design drawings and specifications were submitted to Staff for review on September 30, 2019. Staff comments from Public Works and Engineering were returned to the design consultant October 15, 2019

Upcoming Work Items:


- Ongoing Geotechnical draft report anticipated in November, required for tank soil foundation
- Consultant to review COP 60% plan comments and make design modifications for 90% plans and specifications.
- 90% construction drawings and specifications anticipated December 10, 2019

Previous Memos: 3/7/19

VICINITY MAP



Legend/Notes

 Parcels



1:879
1 inch = 73 feet



This product is for informational purposes only and may not be prepared or be suitable for legal, engineering, or surveying purposes.

MAP PREPARED: MARCH 6, 2019

Existing bolted steel ground storage tank (GST) to be removed



Hydro Tanks and Pedestal to be removed to provide room on site for new Ground Storage Tank

