

Lindsay Koskiniemi

From: Huebner, William <William.Huebner@strand.com>
Sent: Friday, August 11, 2023 10:41 AM
To: Lindsay Koskiniemi
Cc: Clarence Wittwer; Kaydi Smith
Subject: City of Sweeny Master Plan

We appreciate the opportunity to assist the City of Sweeny in preparing a master plan for the City's water, wastewater and natural gas system. I have prepared below, a list of scope items and costs for you and the Council to consider.

Basic Scope

Water

1. Review existing records including water usage, distribution system mapping, existing infrastructure like wells, tanks, pumps and treatment units.
2. Compare existing infrastructure capacities per TCEQ regulations with existing number of connections to determine any shortfalls or surplus.
3. Identify needs for additional capacity based on a 30 year planning period and population projections from sources including Texas Water Development Board and HGAC. Develop cost opinions for the construction of needed improvements.
4. Update mapping based on recent utility improvement projects and other changes known by Staff to create the most up to date mapping for the water system.
5. Identify distribution lines that are in need of replacement, prioritize the list and provide cost opinions of cost for their construction.

Wastewater

1. Evaluate the City's existing WWTP and 5 existing lift stations and provide report on needed improvements. Provide cost opinions for these improvements.
2. Identify needs for additional capacity based on a 30 year planning period and population projections from sources including Texas Water Development Board and HGAC. Develop cost opinions for the construction of needed improvements.
3. Update mapping based on recent utility improvement projects and other changes known by Staff to create the most up to date mapping for the water system.
4. Identify collection system lines that are in need of replacement, prioritize the list and provide opinions of cost for their construction.

Natural Gas System

1. Assist City in doing an audit of their gas distribution system to determine the accuracy of their mapping and identify locations of steel and poly line. May require City Staff to excavate strategic locations to identify line locations, size and type.
2. Evaluate the condition of the City's existing purchasing station, border station and regulator station to identify any needed improvements. Provide opinion of probable cost for these improvements.
3. Update gas system mapping as needed.

Total fee for the Base Bid scope of work would be approximately \$85,000. The following additional services can be added to the scope for the approximate fee listed. Depending on what is selected, there may be some savings. Each of the following fees are based on it as a stand alone project. For instance, if the GIS and water model are both selected, there are some efficiencies there that should reduce the combined fee since both

require GIS work which can be combined. Once the City has decided on the final scope for the project, we will prepare an agreement and adjust the fee as best we can.

Additional Services

1. Merge AutoCAD, paper and GIS mapping for the water, wastewater and natural gas systems into a single Geographic Information System. Incorporate the City's existing roadway assessment information as an additional layer and include other publicly available layers such as appraisal district parcel information, FEMA flood layers, Lidar elevation mapping, etc. \$15,000
2. Create a water system hydraulic model using WaterGems. Run scenarios for existing system as well as potential improved system with fire demands and other potential development demands to determine low pressure/flow areas in the system. Create a model to allow Public Works to determine flow direction when flushing lines to help improve the cleaning of the distribution system. Identify areas where existing lines need to be increased in size or new lines are needed to connect dead ends to improve fire flows and pressures. Prepare cost opinion for these improvements. \$50,000
3. Provide smoke testing of entire wastewater collection system as well as physical inspection of all manholes (approximately 138,500 LF of pipe and 245 manholes) to determine sources of infiltration and inflow (I/I). Prepare reports, including main line as well as service line leak reports. Service line leak reports can be forwarded by the City to customers to repair leaks on the private side of the system. Use data from report to identify lines and manholes in need of replacement to reduce I/I. Provide cost opinions for these improvements. \$160,000
4. Conduct Water/Wastewater/Gas Utility rate study. Create spreadsheets using City provided customer data to compare current rates to proposed rates and estimate increased revenue. Information from this study will help with estimating impacts on utility rates when paying off debt through loans or other funding programs as required. \$22,000
5. Create a wastewater hydraulic model to evaluate the system's performance during various rainfall events. Includes the use of flow monitoring equipment installed at strategic points along the system to record increased flows during storm events. Identify collection lines that cannot handle rain events and need replacement. Provide cost opinions for these improvements. \$65,000
6. Create a natural gas distribution system model to evaluate the pressures and flow on the system during extreme usage (winter storm or industrial customer) to identify any low pressure areas or flow restrictions. Identify distribution lines that need to be increased in size or additional lines to connect dead ends to improve pressures and flows. Provide cost opinions for these improvements. \$45,000

If you or anyone else have any questions or would like to discuss, please don't hesitate to call. I will plan on being at the Council meeting next Tuesday at 5 to discuss this and the water treatment options. Let me know if the meeting time changes or if you need anything else.

Sincerely,



William Huebner, P.E.

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