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Our ref: 12582813

May 18, 2022

Mr. Austin Calaman, General Manager
Lewes Board of Public Works
107 Franklin Avenue
Lewes DE 19958

Lewes Wastewater Treatment Facility – Long Range Planning Study – Contract No. XX

Dear Mr. Calaman

GHD is pleased to present this proposal for providing engineering related services for development of a Wastewater Treatment Facility Long Range Planning Study for the Lewes Board of Public Works (BPW). The project background, proposed scope of work, schedule, and fee are outlined below.

Background

The BPW owns and operates the Lewes BPW Wastewater Treatment Facility (WWTF), which is also known as the Howard Seymour Water Reclamation Facility and is located in Lewes, DE. The WWTF was originally constructed in 1950 and major refurbishments were completed in 2008, which included the installation of a membrane biofiltration process in the secondary treatment phase. Due to the low elevation of the existing facility, the BPW would like to evaluate options to mitigate impacts of sea level rise and flood/storm events as well as evaluate options to relocate the facility.

Scope

The following tasks will be completed for the WWTF Long Range Planning Study:

GHD will evaluate a total of six (6) options to increase the resilience of BPW's wastewater treatment to storm events and sea level rise. The following options will be evaluated:

Option Reference	Option Title	Notes
1	Existing WWTF Hardening	Evaluate the existing WWTF site to determine improvements necessary to mitigate treatment impacts from sea level rise, subsidence, storm events including flooding, power loss etc. Evaluation will at minimum include the following; Perimeter Dike around facility with stormwater/dewatering pumping station Raising Administration Building and parking areas Raising and or flood proofing of the Bio-solids unit processes On-site fuel storage for extended storm events/emergencies.
2 – a	Relocation & Spray Irrigation and/or RIBS	Perform an effluent disposal study to determine if a suitable site can be found to construct a new WWTF that can utilize either Rapid Infiltration Beds (RIBS) or spray irrigation technology for effluent disposal. For this conceptual evaluation, it is assumed that local zoning, soils, and topography maps would be reviewed. No soil/field testing or other intrusive investigation has been

Option Reference	Option Title	Notes
		included for this phase. This site evaluation will be limited to within 6 miles of the existing facility. Decommission the existing WWTF.
2 – b	Relocation & Utilization of Existing WWTP Outfall	Perform a siting study to construct a new WWTF but maintain the existing permitted outfall. A new force main will be required to transfer effluent from the new facility to the existing outfall. Decommission the existing WWTF.
2 – c	Relocation & New Ocean Outfall	Perform a siting study to construct a new WWTF which will discharge via a new ocean outfall. Decommission the existing WWTF.
3 – a	Partnership with Sussex County & Utilization of Existing WWTP Outfall	On the understanding that Sussex County can provide a suitably-sized site at a resilience elevation, evaluate the network upgrades required to transfer wastewater from the Lewes collection network to a new WWTP in Sussex County. Evaluate the feasibility of transferring treated flows back to the existing permitted, outfall in Lewes. GHD will not develop a cost for the new treatment facility at this time. Decommission the existing WWTF.
3 – b	Partnership with Sussex County & Biological Polishing	On the understanding that Sussex County can provide a suitably-sized site at a resilience elevation, evaluate the network upgrades required to transfer wastewater from the Lewes collection network to a new WWTP in Sussex County. Assume that the new WWTP effluent can be disposed-of within Sussex County. GHD will not develop a cost for the new treatment facility at this time. Decommission the existing WWTF.

For each of the options outlined above, GHD will perform the following analyses:

1. Siting study to identify suitable plots of land to meet the objectives of each option. Criteria for the siting study will include:
    a. Existing land ownership
    b. Existing land use
    c. Zoning and permitting constraints
    d. Site elevation and flood risk
    e. Existing utilities
2. Preliminary hydraulic analysis to size major equipment:
    a. Develop facility treatment capacity and effluent performance goals.
    b. High level calculations, based on agreed average and peak flow rates, sufficient to determine the size of collection and/ or transfer pipelines and pumping requirements.
3. Project Lifecycle Cost analysis:
    a. Assuming an overall project lifecycle of 25 years, develop Preliminary Capital Cost Estimates and 25-year Net Present Value (NPV) Operation & Maintenance Cost Estimates for each option.
    b. The aim is to provide a like-for-like comparison of the total financial implications of each option to BPW. The cost estimates will only account for costs incurred by BPW directly, i.e., will exclude any costs incurred by Sussex County or other stakeholders.
4. Multi-Criterial Analysis (MCA) rate and assign scores to each option based only on the non-cost attributes:
    a. The final MCA criteria will be developed and agreed with BPW, but may include:
        i. Performance and environmental compliance.
        ii. Operational flexibility and resource requirements.

iii. Maintenance requirements and safety.

iv. Constructability, site utilization and temporary disruption during construction phase.

5. The final MCA scoring and Project Lifecycle Costs will be used to assess the best value option for BPW, and will form the basis of GHD's recommendations.

Deliverables and Meetings

1. Draft and Final Report
   a. Develop draft and final report, documenting GHD's findings, recommendations, and Project Lifecycle Costs and MCA Scoring for each option.
   b. Incorporate all BPW's comments from the Draft Report and finalize the Report.
2. Deliverables
   a. Meeting minutes for Kick-off and progress meetings.
   b. Draft Report.
   c. Meeting minutes for Draft Report Review Meeting.
   d. Final Report.
3. Conduct a total of six (6) meetings
   a. One (1) in person meeting to kick-off the project.
   b. Three (3) virtual meetings to review progress and discuss preliminary findings.
   c. One (1) in-person meeting to review the Draft Report and discuss the BPW's comments.
   d. Prepare for and attend (1) public meeting to present the results of the study.

Schedule

GHD proposes the following schedule to complete the scope of services:

Task	Duration/Completion
Project Kick-off/Chartering Meeting	1 week from Purchase Order/NTP
Information Gathering / Site Visits	1 week from Project Kick-off Meeting *(Dependent of operator availability)*
Draft Report	12 weeks after Project Kick-off Meeting
BPW Review and Comment of Technical Memorandum (Review Meeting)	2 weeks after receipt of Draft Report
Final Report	2 weeks after receipt of BPW's comments

Assumptions

1. This analysis will be based on available record documents, GIS (e.g., O&M data) provided by the BPW and Sussex County, online sources, and additional feedback provided by the BPW and County as needed.
2. No survey, utility locating, geotechnical investigations, or other field investigations will be conducted in this scope.
3. No engineering services during design or construction are included.
4. All deliverables will be sent to the BPW electronically.
5. An assessment of the plant capacity in relation to projected growth is not included in the scope of this project. If required, a scope of works for this work will be provided by GHD as a separate proposal.

Fee

GHD can perform the scope of services as identified above on an hourly and expense basis, in accordance with our base contract, as follows:

Description	Engineering Cost
WWTF Long Range Planning Study	$248,500
TOTAL	**$248,500**

If you have any questions or need additional information, please do not hesitate to contact me at 301 518 8346.

Regards

Jeff Sturdevant
Principal

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