fishbeck
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September 21, 2022

Mr. Adam Smith
City Manager
City of Grand Ledge
310 Greenwood Street
Grand Ledge, Michigan 48837

Proposal for Professional Services
Wastewater System Improvements – Design and Bidding Engineering

Dear Adam:

Fishbeck is pleased to provide the City of Grand Ledge (City), this proposal to provide detailed design and bidding phase engineering services associated with the construction of improvements to the wastewater treatment plant (WWTP) and in the sanitary sewer collection system. Fishbeck has assisted the City to develop the basis of design for these improvements, perform an alternatives evaluation to identify the preferred scope of improvements and submit a Clean Water State Revolving Fund (CWSRF) project plan to secure funding for the improvements. The City recently received confirmation from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) that this estimated $35,000,000 project is within the funding range for the 2023 fiscal year, including anticipated American Rescue Plan (ARP) grant funding of $3,499,500.

Statement of Understanding

The sanitary sewer system and WWTP require improvements to provide additional capacity for residents, businesses, and industries within the service area. There is current demand for capacity from residential and commercial developments and the potential for future demand from growth in the City's industrial park. The sanitary sewer system experiences high levels of inflow and infiltration (I/I) and periodic sanitary sewer overflows (SSOs). The WWTP is generally able to maintain compliance with the National Pollutant Discharge Elimination System (NPDES) permit; however, it is at the hydraulic and organic loading capacity.

Collection System

The collection system was originally a combined sewer system, but the City completed construction of a sewer separation project in 1991. The current sanitary sewer system is comprised of seven pump stations, over 40 miles of gravity sewer, over two miles of force main, and includes three river crossings.

Prior to improvements completed between 2009 and 2012, the City entered into an administrative consent order (ACO) because of overflows from manhole MH-94 on the interceptor between the West River Pump Station (WRPS) and the WWTP, and from the WRPS. The City has implemented collection system improvements to address the issues that resulted in the 2009 ACO.

After initially completing sanitary sewer system improvements, the system operated better and had only seen issues during high antecedent moisture conditions (AMC). More recently, the City has observed worsening inflow and infiltration (I/I) responses to wet weather events which have resulted in sanitary sewer overflows (SSOs) from two structures in the sanitary sewer system. Outfall 004 is located at the WRPS, which serves the North End District. The Russell Street overflow is located at Manhole 211 (Outfall 005) on the River Interceptor, where the West Jefferson District discharges to the River Interceptor. Both overflows discharge to the Grand River. This worsening condition has resulted in EGLE issuing violation notices to the City and indicating that they intend to revise the 2009 ACO to require that the City address the ongoing SSOs.

Wastewater Treatment Plant

The original WWTP was constructed in the late 1930s and provided primary settling treatment and disinfection, with digesters for biosolids treatment. A major upgrade in the mid-1970s added preliminary treatment with a grinder and grit removal, installed new primary treatment tanks, and added the secondary treatment process. Essentially, everything from the original facility was removed, abandoned, filled in at that time, or since.

Two biosolids storage tanks were installed in the mid-1980s. A third biosolids storage tank was installed in the mid-1990s; a maintenance upgrade to the aeration system diffusers occurred around the same time. The most recent upgrade, in the early 2010s, included an influent diversion structure and retention tank, an upgrade to the headworks with a mechanical bar screen and Parshall flume, and expansion of the chlorine contact tank. Since 2015, maintenance upgrades of other equipment have occurred.

The majority of the WWTP process equipment is from 1975 and is largely approaching the end of its useful life. The headworks mechanical bar screen, retention treatment tank system, and intermediate lift station pumps were installed in 2010 and have remaining life suitable for continued use. The remaining process units and associated equipment are beyond their useful life, and many are at capacity.

The current WWTP average day design capacity of 1.5 MGD, is undersized for current conditions and recognized as the limiting factor to further growth and development of the Grand Ledge Area. The WWTP will be less likely to meet treatment standards with increased flow and loads from further residential and commercial development of the service area already underway, and demand for new industrial users. Current 20-year flow projections indicate that the WWTP will require an average day treatment capacity of 3.9 MGD and a peak flow capacity of 14.3 MGD to adequately transport and treat the anticipated flow from the 20-year design projected service area population.

Through a detailed alternatives analysis, a membrane bioreactor (MBR) treatment system was selected as the preferred treatment technology. This change in the treatment process will provide a higher-quality effluent than other treatment options within a smaller expansion footprint.

Anticipated Basis of Detailed Design

A detailed description of the components of the proposed collection system improvements and WWTP upgrades are presented by engineering discipline in the following paragraphs. These components are the basis of the proposal as presented and will be augmented by subsequent discussions with the City. Fishbeck has developed the right design team to accomplish to execute this design in the accordance with the anticipated project design schedule. Our team organization chart is included as an attachment to this letter.

Wastewater Process Engineering

Our WWTP design effort will be led by the wastewater process design requirements. Improvements are intended to provide treatment for the basis of design 20-year projected flows and loadings identified in Table 1 below.

Table 1 – WWTP Basis of Design –20-Year Projected Flow and Loading

Parameter	Flow (mgd)	$CBOD_5$ (lbs/day)	TSS (lbs/day)	NH_3-N* (lbs/day)	Total-P (lbs/day)
Future Design Average	3.9	6,449	7,332	864	145
Future Design Peak	14.3	9,930	12,938	1,333	209

*Ammoniacal nitrogen (NH_3 N)

Our detailed design of the WWTP improvements will provide for:

- Collection system improvements including:
  - Wet weather pumping capacity at the WRPS.

  - Dedicated wet weather force main along West Jefferson Street from the WRPS to the proposed retention treatment basin (RTB).
  - Whitney Street Pump Station improvements.
- An RTB at the WWTP sized to reduce the peak flows to the WWTP with associated improvements including:
  - Basin flushing equipment.
  - Dedicated odor control system.
  - Gravity sewer connecting the RTB to the existing headworks.
- Improvements to the preliminary treatment system including:
  - Demolition of the existing aerated grit system and building.
  - New vortex grit removal system.
  - Preliminary treatment building to house microscreens and grit removal equipment.
- New MBR treatment system including:
  - Demolition of the existing primary and final clarifier equipment and mechanisms.
  - Modifications to the existing intermediate pump station to allow pumping directly to the existing aeration tanks.
  - Modifications to the existing aeration tanks to facilitate an MBR treatment process.
  - Modifications to the primary clarifiers to house MBR tanks and equipment.
  - Updated aeration system as required for the MBR system including blowers.
- UV disinfection system and demolition of the existing chlorine disinfection system.
- Solids handling improvements, including:
  - Rotary drum thickeners and associated piping and equipment modifications to reduce biosolids volume.
  - Bulk lime storage and lime handling equipment for biosolids stabilization.

Architectural/Structural Engineering

The new RTB will be designed as a separate tank as defined in the CWSRF Project Plan. New tanks and buildings will be designed for the new grit removal system and the microscreen system. The design will incorporate modification to and reuse of the existing primary clarifiers and aeration tanks for the new secondary treatment system. The UV disinfection system will be designed to be located in one of the existing chlorine contact tanks. These treatment processes will all require structural design. Additionally, a building will be required for the new grit removal and microscreening equipment. This building will require both architectural and structural design. Fishbeck anticipated that the following features will be incorporated into the detailed design of the tanks and building expansion:

- Flow Retention Basin:
  - Reinforced, cast-in-place concrete sloped bottom, with a trench or sump for cleaning.
  - Reinforced, cast-in-place concrete walls, designed with a decorative façade to incorporate into the surrounding area.
  - Top slab designed and reinforced to avoid significant cracking. Interior beams and columns will likely be required.
  - Handrail around the tank to allow for personnel access.
  - At least two access hatches will be incorporated for access into the tank and for maintenance.
  - The design will call for the tank joints to be water-stopped to provide a water-tight structure.
  - The top slab will slope for drainage and be covered with sheet waterproofing wrapped onto the tank walls, two feet down, around the perimeter
- Headworks Building:
  - Wall construction will be determined in conjunction with the City, during preliminary (30%) design phase. As a basis for the proposal, use of masonry wall construction is assumed. Typical exterior masonry walls include an interior load bearing concrete masonry unit (CMU) wythe and an exterior split face decorative block veneer. The decorative block would include integral color and water repellant admixtures for low

maintenance. Rigid insulation would be installed in the cavity to meet energy code requirements. Other options for exterior walls could include an insulated metal panel system, or precast concrete. Interior masonry walls would be painted. The masonry walls would be reinforced with vertical bar reinforcing at a regular spacing, wire reinforcing in joints, and added reinforcing around openings.
    - The roof system will be designed with a pitched roof to match the maintenance building.
    - Exterior doors and frames will be fiberglass construction. The doors will be insulated and finish painted. Interior doors and frames will be painted, hollow-metal construction. Doors at chemical storage rooms will be fire rated fiber reinforced plastic (FRP) construction for chemical resistance with panic hardware. Door hardware will be keyed to match the Owner's existing system. Overhead doors will be insulated, sectional or coiling style with metal cladding.
    - Interior ceilings in process spaces will be painted.
    - Floors will be sealed concrete in process equipment spaces.
    - Pending a geotechnical investigation, foundations are presumed to be shallow strip and spread footings constructed of reinforced concrete.
- Vortex Grit Chamber with reinforced concrete base, walls, and influent/effluent channels.
- Secondary Treatment System:
    - Remove the primary clarifier mechanisms and modify the existing tanks to allow for MBR equipment to be installed in the existing tank footprint.
    - Remove existing aeration equipment to allow for installation of MBR aeration equipment.
    - Design modifications to the existing aeration tanks and primary clarifiers to allow for a hoist system to accommodate MBR cassette removal.
    - Design a support system in the existing aeration tanks and the primary clarifiers to allow for walk-on-top solid covers over the MBR cassettes.
- Blower Building modifications for equipment support and new wall and roof penetrations.
- Disinfection System:
    - Modifications and minor repairs to the existing chlorine contact tank to incorporate new UV channels.
    - Design gate and weir modifications to allow for the retrofit of the existing chlorine contact tank to the new UV system.
    - Incorporate modifications to the Blower Building to allow UV system electrical components to be housed indoors.

Site/Civil Engineering

Based on the conceptual design, the WWTP improvements would be constructed on the existing wastewater treatment plant site and some work on adjacent property. It is anticipated that the following features will be incorporated into the site/civil design of the facility:

- Design of a new force main from the WRPS to the new RTB, including site restoration.
- Design of the gravity sewer to connect the RTB to the existing headworks.
- Design of process site piping to connect new and existing treatment processes.
- Site grading and stormwater management around the RTB.
- Design of site utilities as necessary to support the new facility.
- Park improvements to maintain access to the Grand River during and after construction.

Mechanical (HVAC and Plumbing) Engineering

Our mechanical engineers will develop a detailed design that provides ventilation and heating of the new headworks building and other buildings that are modified as a part of this project. HVAC and plumbing will be designed to comply with NFPA 820 regulation and provide adequate ventilation for working conditions.

The headworks building will have a process area that will carry a Class I, Division 1 hazard classification according to NFPA 820 and an electrical room that will remain unclassified according to NFPA 820. Ventilation in the process space will be designed to reduce the risk associated with the buildup of corrosive, explosive or otherwise harmful gases in the headworks building. The ventilation will not be intended to remove the hazard classification within the space, but instead will be designed to provide a space suitable for occupancy. The heating system in the headworks building process area will be designed to be provided by either the makeup air unit (MAU) or with explosion proof unit heaters. The design for the heating system in the headworks building electrical room will incorporate a dedicated unit heater.

The heating and ventilation systems in the blower building will be evaluated and modified as required to accommodate the anticipated changes to the space.

Other mechanical features of the detailed design will include:

- Emergency eyewash stations and showers in the chemical rooms, with a tepid water heating system.
- Non-potable water for general washdown hose bibs inside the headworks building.
- Wall hydrants on exterior walls for general non-potable water uses.
- Floor drains within the headworks building.
- Roof drains connected to the existing stormwater system.
- Natural gas piping system extension from the existing building.

Electrical Engineering

The main electrical engineering considerations are to ensure adequate electrical service for the WWTP as well as new power distribution, lighting, controls, and ancillary systems for the treatment equipment and buildings.

- WRPS Electrical.
  - The existing electrical system, including the service, the transformer, the motor control center will be evaluated during preliminary design to determine what improvements are necessary to accommodate the new wet weather pumps.
  - Modifications to the electrical system will be designed to accommodate the proposed wet weather pumps.
- WWTP Electrical Service.
  - The existing electrical service will be evaluated during preliminary design to confirm that it is adequate for the anticipated improvements.
- Power Distribution.
  - Power will be distributed via a main service-entrance rated circuit breaker, automatic transfer switch, motor control centers, power distribution panelboards, 208Y/120-volt step-down transformers, and lighting panelboards.
  - Motor starters and variable frequency drives (VFDs) will be provided as required for controlling motor loads on process and mechanical equipment as necessary.
- WWTP Standby Power.
  - The projected electrical loads will be evaluated during preliminary design to determine if the existing 500 kW generator should be replaced or if an additional generator should be provided.
  - Either a replacement generator or an additional generator will be provided to supply additional standby power in case of a utility power outage. The generator will be sized so that the treatment plant can meet average day demands. Provisions (i.e., generator docking station) will be included for connecting a portable generator and load bank so the generator can be serviced and maintained with minimal interruptions in accordance with the requirements of Article 700.3 of the National Electrical Code (NEC). The generator will be located outside in a weather-protected, sound-attenuated enclosure. A double-walled sub-base fuel storage tank, sized to allow the generator to operate at full load for a minimum of 24 hours, will be provided with the generator.

- Controls.
  - Treatment equipment, chemical feed systems, instrumentation, and controls will be monitored and controlled via a programmable logic controller (PLC) based control system.
  - Control panels with distributed PLCs and input/output (I/O) racks will be strategically located throughout the plant. Level, flow, pressure, temperature, and analytical instruments will be wired to local control panels. Each control panel will include an uninterruptible power supply (UPS) to allow equipment to ride through momentary power interruptions.
  - A network of computer servers and client workstations will interface with the PLCs and be programmed to provide operator interface visualization, alarming, reporting, trending, data collection, storage, and archiving features. Industrial workstations with touchscreen capabilities can be provided in certain control panels as necessary.
  - Control system equipment will be connected on an Ethernet network. Category 6 (copper) cabling will be used for network connections shorter than 300 feet. Multi-mode fiber optic cabling will be used for longer runs and between buildings.
  - Remote access to the control system can be provided via an internet connection and virtual private network (VPN). Managed Ethernet switches will be utilized to provide network security. Access via cell phones, tablets, and hand-held devices can also be incorporated.
  - PLCs and remote communications with WRPS will be reviewed during design. PLC equipment will be evaluated for replacement. New CompactLogix or MicroLogix PLCs will be considered.
  - Where possible, existing instruments and motor controls will be reused.
  - Integrate new controls into existing SCADA system.
  - Jefferson Street Lift Station, Whitney Street Pump Station and WRPS integrated into WWTP SCADA system
- Lighting.
  - LED lighting will be provided in the headworks building and in existing buildings where modifications are planned. Lighting controls will be provided to meet current energy conservation codes.
  - Emergency lighting will be powered via a centralized UPS system.
  - Replace site lighting.
- Ancillary Systems.
  - Exact fire alarm requirements will be determined and discussed with the City and local code officials during preliminary design. It is likely that a UL-listed and monitored system will be required in the plant due to the types and volumes of chemicals that will be used onsite. Pull stations, smoke detectors, heat detectors, sprinkler system tamper and flow switches, and audio/visual indicating appliances will be provided as required. Devices will be networked to a centrally located fire alarm control panel. The fire alarm system will be monitored via the plant control system.
  - We understand that the City will utilize an independent contractor to install security systems (access controls, cameras, etc.) at the WWTP. The design of the WWTP will be coordinated with the security system provider.

Scope of Services

Fishbeck has prepared an anticipated scope of services that includes the following elements and specific tasks:

Preliminary Design

During this phase, the various project elements will be sized, located, and refined. A preliminary basis of design will be established, process schematics will be developed, building and process layouts will be prepared, and a preliminary site plan will be developed. This will be one of the most interactive phases between the City and Fishbeck, and we anticipate the City will have significant input on project preferences and building layout items

during this phase. The primary design disciplines involved during this phase will include process, civil, electrical/controls, geotechnical engineering, and architectural design.

At the conclusion of the preliminary design phase, the design will be approximately 30% complete.

Specific tasks to be included are as follows:

1. Attend a project kickoff meeting with the City to identify key project goals and objectives, establish communication protocols, and review project approval procedures. If desired, Michigan Department of Environment, Great Lakes, and Energy (EGLE) can be included in this meeting.
2. Complete additional topographic survey of the sites (WWTP, WRPS, West Jefferson Street) as necessary to complete preliminary drawings.
3. Contract a soils consultant for geotechnical services and coordinate with them to obtain soil borings and complete a geotechnical report with recommendations for construction excavation, dewatering requirements, and footing/foundation design for new structural elements.
4. Work with the City to identify a preferred vendor for MBR equipment and solicit pricing for the vendor to procure the MBR equipment package. Coordinate with the preferred vendor and the City on set up of the preliminary MBR design. Work with the vendor to confirm design parameters and sizing for the MBR system, including pumping rates, media requirements, cleaning rates, and chemical dosing.
5. For the headworks building expansion: Conduct a workshop with the City to confirm building material preferences, roof design, and overall floor plan. Also conduct a building code review for building modifications to include structural, mechanical, and electrical code requirements. The code review will also verify local code requirements, such as: zoning, setbacks, fire protection (sprinkling and alarm systems), etc.
6. Refine the preliminary site plan developed for the CWSRF project plan and prepare a process schematic, preliminary P&ID drawings, and hydraulic profile of the WWTP.
7. Confirm site utility layout and rerouting requirements for existing and proposed utilities.
8. Confirm sizing and site plan approval requirements.
9. Verify the sizing, layout, and piping requirements to incorporate the proposed improvements. Develop a basis of design for proposed improvements for use in the permitting process.
10. Determine electrical load requirements for the new equipment. Identify necessary electrical improvements to accommodate the new building expansion and retention basin. Determine how and where new equipment will be located and connected. Identify new distribution equipment (e.g., motor control centers, panelboards, motor starters, VFDs, etc.).
11. Review the existing supervisory control and data acquisition (SCADA) system and develop a concept for incorporating new instrumentation and programming. Summarize new instrumentation and control equipment to incorporate controls and monitoring for new processes and equipment.
12. Review standby power requirements and provide capacity recommendations, including generator size, type, and manufacturer recommendations. The City will be consulted to establish the desired generator capacity.
13. Prepare preliminary drawings as follows:
    a. Site plan with utilities.
    b. Preliminary building floor plan.
    c. Process schematics and P&IDs.
    d. Hydraulic profile.
    e. Electrical one-line diagram.
    f. Control system configuration (network architecture) diagram.
14. Prepare an updated opinion of probable construction cost based on the preliminary design documents.
15. Review the preliminary design and opinion of probable construction cost with the City for approval and authorization to proceed to final design.

Final Design

During this phase, project concepts, layouts, and sizing will be developed from their preliminary state into detailed drawings and specifications for all design disciplines, including Process, Civil, Architectural, Structural, Mechanical (HVAC and Plumbing), Electrical, and Instrumentation and Controls. Each discipline will prepare bid ready drawings and specifications. Throughout this phase, progress meetings will be held between the City and Fishbeck, to relay design concepts and receive input on the design.

The specific tasks included in final design are as follows:

1. Prepare 60% and 90% design documents and submit for review by the project stakeholders including the City and EGLE, as applicable. Coordinate review comments and implement applicable comments into the bidding documents.
2. Coordinate contractual requirements with the City specifically relating to bonding, insurance, liquidated damages, and dispute resolution.
3. Prepare Divisions 00 and 01 front-end specifications to include the Standard General Conditions of the Construction Contract by the Engineers Joint Contract Documents Committee (EJCDC). These documents will identify contractual and administrative requirements.
4. Prepare technical specifications for bidding purposes. The specifications will follow the current Construction Specification Institute (CSI) numbering and formatting.
5. Prepare final drawings for bidding purposes, in major subdivisions to include Civil, Architectural, Structural, Process, Mechanical (HVAC and Plumbing), Electrical, and Instrumentation, as applicable to the project.
6. Update the Engineer's Opinion of Probable Construction Cost for the work reflecting 90% design documents.
7. Review the final design and opinion of probable construction cost with the City for approval and authorization to proceed with permitting.
8. Complete internal quality assurance/quality control (QA/QC) procedures, which will include City and EGLE review. Incorporate applicable review comments into the design documents.
9. Submit the bidding documents and permit application to EGLE and help the City to secure the Part 41 Wastewater System Construction Permit issued by EGLE. The permit application will be submitted following completion of the design. Fishbeck will prepare the permit application, coordinate review with EGLE, and respond to EGLE comments. The time required to review and approve the permit is dependent on agency workload, although keeping the agency informed regarding the design progress can facilitate a faster review of the final design submittal.
10. Assist the City with complete CWSRF funding application documents, including the Part I, Part II and Part III applications.

Permitting

Fishbeck will assist the City with development and submittal of the required EGLE Part 41 Wastewater Construction Permit and the required Joint Permit Application (Part 31 Floodplain Permit and Part 301 Inland Lakes and Streams Permit). Both permits will require reviewing the project with EGLE and potentially extensive discussions with EGLE regarding the project scope and approach.

Bidding

1. Assist the City with preparation of an advertisement for bids.
2. Coordinate distribution of drawings and specifications to potential bidders.
3. Attend and conduct a pre-bid meeting at the City's location.
4. Answer bidders' questions and issue addenda, as needed.
5. Attend and assist the City in the bid opening meeting at the City's location.
6. Assist the City in the evaluation of bids and identify qualified bids for City selection of a contractor for awarding construction of the project.

7. Assist the City in the tentative award of the project and coordinate with EGLE to provide the necessary forms and documents.

Assumptions

The proposal and fee presented is based on the following assumptions:

1. Fees to complete the design phase and bidding phase services as described, are presented herein. Fees for construction phase services will be provided at the conclusion of design.
2. A geotechnical investigation will be required for the project as described under preliminary design. We have included the geotechnical investigation in our scope to be performed by a geotechnical firm as a subconsultant to Fishbeck. If desired, the City could contract directly with the geotechnical consultant.
3. This proposal does not include legal or financial services, bond counsel fees, or bid advertisement costs. These services will be required in accordance with the CWSRF funding requirements. Fishbeck anticipates that the City will contract directly for legal and financial services and will pay bid advertisement costs directly. Fishbeck intends to assist the City and their representatives as required to complete the required CWSRF funding applications.
4. No meetings or special provisions for site plan approval are anticipated since this is a City project on City owned property. It is assumed the site plan of the retention basin will be sent to the City for review during preliminary design.
5. Security system provisions, such as security cameras, card readers, etc., are not included in the design. It is assumed that these systems and their related designs will be provided by the City's security system provider. Fishbeck with coordinate with that provider, as requested.
6. Park improvements are limited to those required to maintain access to the Grand River during and after construction. Park improvements, including public restrooms or a river-walk, can be included with this project for an additional fee. Fishbeck will develop proposals for additional engineering based on the estimated time required for the requested service using our current rate schedule. Our current rate schedule is attached for reference.
7. Improvements along West Jefferson Street and along the entry drive into Fitzgerald Park will be limited to the wet weather force main and associated surface restoration from the WRPS to the RTB. Additional utility or surface improvements can be included with this project for an additional fee. Fishbeck will develop proposals for additional engineering based on the estimated time required for the requested service using our current rate schedule. Our current rate schedule is attached for reference.
8. Fishbeck has included the anticipated fee for the force main crossing of the railroad. The City will pay other applicable permit fees.
9. Local permit fees will be the responsibility of the construction contractors.
10. In general, project deliverables will be issued electronically (in PDF format) for review, except as required in hard copy for submittals to the reviewing agencies. It is assumed that four hard copies of the contract documents will be provided to the City.
11. Bidders will be responsible to purchase the bidding documents. Fishbeck utilizes a commercial plan room to handle all bidder requests for hard copy documents. Bidding documents will be made available to common local plan rooms. A hard copy set of bidding documents will be provided to the City for public viewing, if desired.
12. This proposal covers design and bidding phase services. We recommend that construction phase engineering budgets be established when the project details are defined through preliminary design and a construction schedule can be further detailed.

Professional Services Fee

Fishbeck proposes to execute the Scope of Services described herein on an hourly, not-to-exceed basis. Our fees are summarized in the following table for the design and bidding phases. If the required scope of services is different from what is described in this proposal, we will notify the City immediately of any appropriate amendment to the scope and fee.

Task	Estimated Labor Hours	Average Hourly Billing Rate ($/HR)	Lump Sum Fee
Preliminary Design	5,336	$156	$ 860,000*
Final Design	4,974	$159	$ 792,000
Permitting	295	$146	$ 43,000
Bidding	92	$146	$ 13,400
Design, Permitting and Bidding Expenses			$ 13,500**
Total			$ 1,721,900

* Preliminary Design fee includes $30,000 for the geotechnical investigation.

** Design, Permitting and Bidding Expenses includes $7,500 for the CSX Railroad utility crossing permit fee.

Fishbeck will commit to a total fee of 10% of the current estimated construction cost of the project, which is approximately $35,000,000. Changes in the project scope or anticipated project schedule could impact our ability to meet this target budget for engineering services on the project. This fee would cover the anticipated design, construction administration and construction observations services but does not cover extensive startup and commissioning services as may be dictated by EGLE in the future. We assume the City would handle the majority of the operation and reporting labor for startup and commissioning. Fishbeck can assist in this effort upon request.

Invoices will be submitted every four weeks based on the time charged and expenses incurred.

Schedule

The schedule outlined below is intended to comply with the anticipated SRF funding schedule. We anticipate that the City will pursue an SRF Fiscal Year, Quarter 4 schedule. Fishbeck will develop a detailed project schedule with EGLE and the City. The actual time required for design will be dependent on the time needed to complete the preliminary design, final design, and obtain the Part 41 permit from EGLE. All these items will require feedback and approval from EGLE, and the time for the associated reviews is subject to EGLE's schedule and workload. Fishbeck recognizes the critical nature of this project and its importance to the City. We will work with the City and EGLE to improve on the design timeline when possible.

Task	Start Date	Duration (Days)	End Date
Design Kickoff	October 10, 2022		
Preliminary Design	October 10, 2022	120	February 7, 2023
Final Design	February 7, 2023	90	May 8, 2023
Permitting	May 8, 2023	60	July 7, 2023
Bidding	June 1, 2023	60	July 31, 2023

Due to the complexity of this project, we estimate a twenty-four-month construction contract time based on the current scope of improvements. Fishbeck will continue to develop the design and construction schedule as the financing schedule is develop by EGLE and as the scope of construction activities is defined through the design process.

Authorization

If you concur with our scope of services, please notify us of your intent to authorize an engineering agreement, and we will prepare the necessary agreement and return it to the City for review and approval.

We appreciate the opportunity to submit this proposal and look forward to working with the City on this critically important project . If you have any questions or require additional information, please contact me at 616.464.3848 or jredner@fishbeck.com.

Sincerely,

Joshua W. Redner, PE

Attachments
By email

ORGANIZATIONAL CHART

CITY OF GRAND LEDGE – WASTEWATER SYSTEM IMPROVEMENTS

CITY OF GRAND LEDGE

QA/QC
Jeff Brown, PE – Independant
Jeremy Kramer, PE – Civil
Carl Otte, PE – Structural
Jon Yonkers, PE, LEED AP – Mechanical
Chris Kretovic, AIA, LEED AP – Architectural

PROJECT MANAGER
Josh Redner, PE

TECHNICAL ADVISOR AND PRINCIPAL-IN-CHARGE
John Willemin, PE

WASTEWATER PROCESS

Erin Szczegielniak, PE
Sr. Wastewater Engineer

Amanda Laramie, PE
Wastewater Engineer

Caitlin Wineka, PE
Wastewater Engineer

Josh King
Wastewater Specialist

CIVIL

Heather Bowers, PE, LEED AP
Sr. Civil Engineer

Nate Barton, PE
Civil Engineer

Kegan Gibson
Civil Engineer

STRUCTURAL

Eric Dickinson, PE
Sr. Structural Engineer

Nathan Fleming
Structural Engineer

MECHANICAL

Jerry Hirth, PE, LEED AP
Sr. Mechanical Engineer

Bo Benson
Mechanical Engineer

Cliff Baker
Sr. Mechanical Engineering Specialist

ELECTRICAL AND INSTRUMENTATION

John Condie, PE
Principal/Sr. VP

Matt Stack, PE, LEED AP
Sr. Electrical Engineer

Tim Dwyer, PE
Sr. Electrical Engineer

Matt Baker, LEED AP
Sr. Electrical Engineering Specialist

Matt Flanders
Electrical Specialist

ARCHITECTURE

Terry Bourassa, RA
Sr. Architect

Audrey Hunt
Architect

Rina Sahay
Architectural Specialist

SURVEY

Christian Johnson
Scanning/LiDAR

Greg Carlson
Control and Mapping

Austin Pratt
Survey

fishbeck
Engineers | Architects | Scientists | Constructors

1515 Arboretum Drive, SE
Grand Rapids, Michigan 49546

616.575.3824 | fishbeck.com

Rate Schedule

June 11, 2022

Principal		$257
Architect | Construction Engineer/Manager/Administrator | Engineer | Estimator | Geologist | Hydrogeologist | Industrial Hygienist | Interior Designer | Project Manager | Scientist | Surveyor		
	Senior Level	$152–$249
	Mid Level	$132–$152
	Staff Level	$92–$132
Architectural Specialist | Engineering Specialist | Environmental Specialist | Health & Safety Specialist | Operations Specialist | Technical Specialist | Project Superintendent | Survey Specialist		
	Senior Level	$152–$225
	Mid Level	$109–$152
	Staff Level	$88–$109
Technician		
	Senior Level	$118–$140
	Mid Level	$103–$118
	Staff Level	$80–$103
Production Support		$92
Photocopies	$0.10/Copy	
Mileage/Passenger Vehicles	$0.70/Mile	
Field and Service Vehicles	$0.95/Mile	
Equipment Schedule	Separate Schedule	
Expenses and Outside Services	Cost Plus 10%	

Compensation to be at one and one-half times the hourly rate for approved overtime.

Invoices are rendered every four weeks and payment is due upon receipt. A service charge of 1% per four-week period is added to accounts unpaid after 28 days from date of billing.

6/2022