



November 22, 2017

Reference No. 11124642

Mr. Steven Broderick
Town Supervisor
Town of Lewiston
1375 Ridge Road
Lewiston, New York 14092

Original Sent Via Email

Dear Mr. Broderick:

**Re: Professional Engineering Services Proposal
Town of Lewiston Water System Capital Improvement Project**

GHD is pleased to offer this proposal for professional engineering services to the Town of Lewiston (Town) for the design and construction of the Town of Lewiston Water System Capital Improvement Project (Project). This proposal is based upon our extensive knowledge and understanding of the Town's infrastructure and the Project requirements, along with a site investigation that was completed with Town staff on March 7, 2017.

1. Project Background and Understanding

The Town owns, operates and maintains the existing public water system. The water system provides potable water to Town residents and businesses through 5,162 service connections. The overall development of this Project reflects the efforts of the Town Board and Town Water Department to address deficiencies within the water system including areas with a history of frequent water main breaks, reduced flow capacity due to aging pipelines, and areas with insufficient fire flows.

The overall scope of work for the project is illustrated in the "Map, Plan and Report for the Creation of the Town of Lewiston Water District" published by GHD (dated May 22, 2017). The Town conducted a public hearing for the Project on July 24, 2017. Subsequently, on August 14, 2017 the Town Board declared itself Lead Agency for State Environmental Quality Review (SEQR) purposes, issued a negative declaration, and approved the Project.

In general, the Project will include the replacement of approximately 8 miles of waterline along 12 roads in the Town. The development of the capital improvement list was based upon operation and maintenance data provided by the Water Department coupled with the results of a Town-wide hydraulic water model that was developed by GHD (formerly CRA) in 2006.

In March 2017, GHD along with the Town Water Department Staff completed a series of field investigations to review existing conditions, establish conceptual waterline alignments, and to gain a better understanding of potential construction constraints.



Based upon these inspections and information provided by the Town, the water system improvement project will include 37 water system interconnections, 103 new hydrants, 62 new valves and the transfer of existing services of both residential and business services. The project will also require boring and cased crossings of four major roadways, one railroad crossing, and two stream crossings.

A breakdown of the proposed waterline improvements by area and roadway is presented in Table 1.1.

Table 1.1 Description of Water System Improvements

Area Designation	Road	Description	Proposed Diameter (Inches)	Length (Feet)
1	Lower River Road	Pletcher Road south to Chicora Drive	12	8,400
2	Morgan Drive	Lower River Road to West Park Lane	12	4,900
3	Mayflower Road	Divide Rd. to Saunders Settlement Road	8	3,900
	Sweet Home Road	East of Hermitage Road to Divide Road		
	Hermitage Road	Divide Road to Sweet Home Road		
4	Creek Road	Pletcher Road to Municipal Boundary (Porter)	16	4,100
5	Hoover Road	Niagara Street to Raymond Road	8	1,800
6	Lewiston Road	Irving Drive to Mountain View Drive	8	6,000
	Military Road	East from Lewiston Road		
7	Homestead Place	West from Lewiston Road	12	7,400
	Lower River Road	Pletcher Road north to Municipal Boundary (Porter)		
8	Pletcher Road	Lower River Road to Creek Road	12	7,400
9	Country Club Trail	Willow Lane to Pine Grove Lane	8	600
TOTAL				44,500

Project scope and design considerations for each of the various project areas is outlined below:

Area 1 – Lower River Road (NYSDOT Route 18F) – Pletcher Road South to Chicora Road

Lower River Road is a NYSDOT roadway (under Niagara County jurisdiction) and the existing watermain is located on the east side of the road. Sanitary sewers are located on the east and west sides of the road, and a large diameter storm sewer is located along the edge of the paved shoulder on the east side. Gas lines and power poles are also located on the east side of the road. The new watermain will be constructed of either ductile iron pipe (DIP) or PVC pipe for construction of the main. A determination will be made during the design phase of the project.



The Right-of-Way (ROW) is clear and open on the east side of the road. The west side is clear and open to a point approximately 2,300 feet south of Pletcher Road where the ROW narrows and a cliff begins along the west side. This cliff continues along the west side for a distance of approximately 3,400 feet (or 900 feet south of Dutton Drive). There is a sidewalk along the entire west side of the road from Pletcher Road south to Dutton Drive where it then crosses to the east side of the road and continues along the east side of the road to Chicora Road. Approximately 900 feet south of Dutton Drive, the cliff moves away from the west side of the road and the west side ROW opens up again.

Since the actual location of the existing utilities along Lower River Road cannot be determined at this time, we cannot design the pipeline alignment until a survey has been completed and base maps prepared that indicate the existing utility locations.

Design for this improvement area will require submission to the NYSDOT/NCDPW for review and approval, and an occupancy and work permit will be required from NYSDOT for installation.

Interconnections to the following locations will be required on Lower River Road:

- Dutton Drive
- Morgan Drive
- Aberdeen Road
- Kenwood Drive
- Tryon Drive
- Chicora Road

Fire Hydrants within this area will be replaced.

Area 2 – Morgan Drive – Lower River Road to West Park Lane

Morgan Drive is a Town road. The existing watermain is located along the south side of the road and the sanitary sewer is located down the center of the road. The ROW along both the south and north sides is clear and open; hence, we anticipate installation of the new PVC watermain along the south side of the road.

There are brick retaining walls on both sides of the driveway on the south side of the road at 403 Morgan Drive. These retaining walls will need to be removed and replaced to install the proposed watermain on the south side of the road.

The Town installed a new section of watermain from 5th Street east on Morgan Drive to approximately Greenfield Road. This section of watermain will not be replaced under this project. Interconnections to this section of Town installed watermain will be required. The remaining portion of Morgan Drive from Greenfield Road east to Hickory Lane will be installed on this project.



Interconnections to the following locations will be required to construct the proposed watermain on Morgan Drive:

- Cherry Lane (West)
- Cherry Lane (East)
- N. 5th Street
- Greenfield Road (West)
- Greenfield Road (East)
- Hickory Lane
- Saddlewood Drive

Fire Hydrants within this area will be replaced.

Area 3 – Mayflower, Sweethome, Hermitage Roads

Mayflower, Sweethome and Hermitage Roads are all Town roads. Where space is available, the proposed PVC watermain will be installed on the same sides of the streets as the existing waterlines. A connection will be made to the existing 1½-inch or 2-inch service heading east from the end of Hermitage Road.

Fire hydrants within this area will be replaced.

Area 4 – Creek Road (NYSDOT Route 18) from Pletcher Road North to Municipal Boundary (Town of Porter)

The ROW in this area is clear and open and power poles are located on west side of the road. The existing watermain is 8-inches in diameter and located on the east side of the road. It also crosses Creek Road at the hot box at the school and continues on the east and west sides of the road. We anticipate that the new main will also be installed on east side of road. We anticipate that either DIP or PVC pipe will be used for construction of the main. A determination will be made during the design phase of the project. Fire hydrants within this area will be replaced during installation of new main. A connection to the existing hot box will be required at the school.

Please note that Creek Road is a NYSDOT Route, which requires us to submit our design for this section of waterline to NYSDOT for review and approval. An occupancy and work permit will also be required for installation of waterline on this road.

Area 5 – Hoover Road from Niagara Street South to Raymond Road

Hoover Road is a town road. The proposed PVC watermain will be installed on the same side of the road as the existing waterlines where space is available. A bored casing pipe crossing of the CSX Transportation (CSX) railroad will be required for construction of this section of watermain. The boring will be approximately 75 feet in length. An occupancy permit from CSX will be required for construction of this section of pipeline. Interconnections will be completed to the existing mains and at Niagara Street.



Area 6 – Lewiston Road (NYSDOT Route 104) from Irving Drive Mountain View Drive, Military Road, and Homestead Place

Lewiston Road is a NYSDOT roadway. The ROW is somewhat open on the east and west sides of the road. There are trees and utilities installed on both the east and west sides of the road, and power poles are located on both sides of the road and vary by location.

We anticipate that either DIP or PVC watermain will be installed on the east side of the road where space is available. A determination will be made during the design phase of the project. Since Lewiston Road is a NYSDOT roadway, we will be required to submit the design to the NYSDOT for review and approval. An occupancy and work permit will also be required for installation of waterline on this road.

A creek crossing will be required approximately 650 feet south of Military Road on the west side of Lewiston Road. This creek has a concrete channel liner at the location of the golf course, which will require boring or horizontal directional drilling (HDD) installation methods to avoid disruption of the concrete channel. A NYSDEC and USACOE permit will be required for this creek crossing.

From Mountainview Drive to Military Road and from Military Road south to Homestead Place, the watermain appears to be installed on the east side of Lewiston Road.

An island and side road starts on the west side of the road at a location approximately 900 feet south of Military Road. The existing watermain appears to have been installed in the island all the way to Barton Road. After Barton Road, the proposed watermain alignment will cross Lewiston Road from the west side to the east side, prior to crossing the Niagara Thruway and Thruway ramps. A bored casing pipe crossing, the Niagara Thruway, approximately 200 linear feet in length, will be required at this location and cross east to the toll plaza. The watermain will require several bored crossings as follows:

- South to a crossing of the north bound exit ramp of Upper Mountain Road approximately 275 linear feet in length.
- South from the above crossing to a crossing of Upper Mountain Road approximately 175 linear feet in length.
- Continuing south from the above crossing to a crossing of entrance ramp to Upper Mountain Road approximately 150 linear feet in length.

The watermain would end at a connection to Irving Drive.

Construction of the section of new watermain south of Barton Road to Irving Drive will be through property owned by the NYS Thruway Authority. Occupancy permits and temporary construction easements will need to be obtained from NYS Thruway Authority for construction. During design, the use of HDD methods will be reviewed and discussed with the NYS Thruway Authority in lieu of bored casing pipe crossings.



Since the actual locations of the existing utilities along Lewiston Road cannot be determined at this time, a pipeline alignment cannot be determined until survey has been completed and base maps prepared indicating the existing utility locations.

Interconnections to the following locations will be required to construct the proposed watermain on Lewiston Road:

- Mountainview Drive
- Military Road
- Homestead Place
- Fort Gray Drive
- Meadowbrook Drive
- Kenneth Avenue
- Barton Road
- NYS Thruway Toll Plaza and facilities
- Irving Drive

Fire Hydrants within this area will be replaced.

Area 7 – Lower River Road (NYSDOT Route 18F) – Pletcher Road North to Municipal Boundary (Porter)

Lower River Road is a NYSDOT roadway (under Niagara County jurisdiction) and the existing watermain is located on the east side of the road. There are sanitary sewers on both east and west sides of the road, there is a large diameter storm sewer located along the edge of the paved shoulder on the east side of the road, and sidewalks and a paved bike path are located on the east side of the road. The ROW is clear and open on the east side of the road; however, constrictions along the west side of the ROW begin approximately 800 feet north of Pletcher Road. Power poles are also located on east side of the road.

Because Lower River Road is a NYSDOT roadway, we will be required to submit the design to the NYSDOT/NCDPW for review and approval. An occupancy and work permit will also be required for installation of waterline on this road.

Since actual locations of the existing utilities along Lower River Road cannot be determined at this time, we cannot determine the pipeline alignment until a survey has been completed and base maps developed indicating the existing utility locations. Based on information obtained during our field visit, it appears there may not be enough room to install the proposed watermain within the ROW on the east side of the roadway. During design, we will investigate whether installation within the west ROW is feasible.

Furthermore, a crossing of Park Road near the road underpass will be required. This area is located approximately 2,000 feet north of Riverwalk Drive. A bored casing pipe crossing of the road will be



required in this location. The potential for completion of the road crossing using horizontal directional drill method will be reviewed during design of the project.

We anticipate that either DIP or PVC watermain will be installed northerly to the Porter Town Line. A determination will be made during the design phase of the project.

Interconnections to the following locations will be required to construct the proposed watermain on Lower River Road:

- Riverwalk Drive
- Park Road

Fire Hydrants within this area will be replaced.

Area 8 – Pletcher Road from Lower River Road to Creek Road

Pletcher Road is a Town road. The existing watermain appears to be installed on the south side and crosses to the north side near the golf course. The ROW is generally open on both sides of the road. Power poles are located on both the north and south sides of the road, and guardrails are located on both sides of the road near the creek crossing. Where crossings of the road are required, open-cut construction has been assumed—this approach will be confirmed with the Highway Department.

A crossing of Four Mile Creek will be required near the exit ramp of the Niagara Scenic Parkway. There is a 10-foot diameter storm drain manhole and 36-inch outlet with a tideflex-type check valve on north side of road, just east of the creek crossing. During design, a determination will be made regarding which side of the road the creek crossing will be completed. A NYSDEC and USACOE permit will be required for completion of the creek crossing. The potential for completion of the creek crossing using HDD will be reviewed during design. The proposed alignment will veer west down the dead end road at the Niagara Scenic Parkway. We anticipate that bored casing pipe crossings will be required in the following locations:

- Northbound lanes of the Niagara Scenic Parkway approximately 150 linear feet in length
- Southbound lanes of the Niagara Scenic Parkway approximately 150 linear feet in length.
- Southbound exit ramp approximately 100 linear feet in length

A ROW occupancy permit and permanent easement will be required from the NYS Parks Department for installation of the new PVC watermain in the ROW.

From the Niagara Scenic Parkway west to River Road, the existing watermain is located on the north side of the road. We anticipate that the proposed 12-inch main will also be installed on the north side of the road.



Interconnections to the following locations will be required to construct the proposed watermain on Pletcher Road:

- Scenic Drive
- Calkins Road
- Golf Course (Hot Box)
- Riverwalk Drive S.
- Stella Niagara (Hot Box)

Area 9 – Country Club Trail from Willow Lane to Pine Grove Lane

Country Club Trail is a town road. The approximate 600 LF waterline will close a loop in the system. The proposed PVC watermain will be installed on the east side of the road from turnout to turnout. Between this section there is a wooden bridge structure and a creek crossing will be required on the east side of the bridge. In addition, a NYSDEC and USACOE permit will be required for this creek crossing. During design, the use of horizontal directional drilling methods will need to be reviewed to limit the disruption to the creek.

Regulatory Agency Permitting

It is our understanding that the Town completed the SEQR process and has issued a negative declaration for the project as part of the approval of the Map, Plan and Report. However, the project is subject to regulatory agency approval and the Town is required to comply with standards associated with various environmental permit conditions. Table 1.2 includes agency approvals and required permits identified by GHD.

Table 1.2 Permits and Approvals

Agency	Permit, Approval or Review	Applicable Areas
Niagara County Health Department (NCDOH)	Plan review and approval	All proposed improvements
NYS Department of Environmental Conservation (NYSDEC)	SPDES Permit (SWPPP/ Construction)	All proposed improvements
NYSDEC	Stream disturbance permit (joint application with USACOE)	Fish Creek (Lewiston Road)
United States Army Corps of Engineers (USACOE)	Stream disturbance permit (joint application with NYSDEC)	Fish Creek (Lewiston Road)
NYS Department of Transportation (NYSDOT)	Highway work permit	State Highways
Niagara County Department of Public Works (NCDPW)	Highway work permit	Interconnections on County roads
Town of Lewiston Highway Department	Highway work permit	Town Roads
CSX Transportation	Utility permit	Somerset Railroad (Hoover Road)



Table 1.2 Permits and Approvals

Agency	Permit, Approval or Review	Applicable Areas
NYS Office of Parks, Recreation and Historic Preservation (NYSOPRHP)	Work permit	Niagara Scenic Parkway
NYSOPRHP	Consultation review	Archaeological Sensitive Areas
NYSOPRHP	Work permit	Joseph Davis State Park
NYS Department of Agriculture and Markets	Notice of Intent	County Agricultural District
Niagara County Farmland Protection Board	Notice of Intent	County Agricultural District

2. Scope of Services

GHD proposes to perform the following scope of services to complete the water system improvement project. The tasks detailed below correlate directly to our proposed fee.

Task 1 – Topographic Survey and Base Mapping

GHD will perform a topographic survey and obtain utility and mapping data necessary for the preparation of project base maps and Contract Documents associated with the design of the proposed water system improvements (approximately 44,500 linear feet). Our services under this task include:

- Reviewing available existing data related to original construction documents: as-builts, aerial photography, property boundaries, and ROWs.
- Completing topographical survey of project areas. The survey will extend 25 feet beyond the Town ROWs or easement boundary.
- Obtaining utility information along the proposed routes.
- Prepare topographic base maps required for design of the watermain replacement project at a horizontal scale of 1-inch equals 30 feet based upon the information collected during the topographic survey.

Task 2 – Detailed Design Phase Services

The detailed design phase includes the following tasks:

- Complete detailed design will include the preparation of design drawings (plans, details, notes, etc.), specifications and Contract Documents suitable for public bidding. The scope of services and fee is based upon bidding the project as a single project. The drawings will be computer generated in AutoCAD format. The plan drawings will be full size 24"x36" and prepared at a minimum scale 1"=30', with blow-ups of waterline interconnections and areas of special concern.



The anticipated drawing list includes:

- | | |
|----------------|--|
| GN-01 | Title Sheet |
| GN-02 | General Plan Notes, Legend & Abbreviations |
| GN-03 | Overall Project Layout Plan |
| CI-01 – CI-13 | Area 1 – Lower River Road (south), Plan and Profiles |
| CI-14 – CI-19 | Area 2 – Morgan Drive, Plan and Profiles |
| CI-20 – CI-25 | Area 3 – Mayflower Road, Sweet Home Road, Hermitage Road,
Plan and Profiles |
| CI-26 – CI-29 | Area 4 – Creek Road, Plan and Profiles |
| CI-30 – CI-37 | Area 5 – Hoover Road, Plan and Profiles |
| CI-38 – CI-43 | Area 6 – Homestead Place, Plan and Profiles |
| CI-44 – CI- 53 | Area 7 – Lower River Road (North), Plan and Profiles |
| CI-54 – CI-60 | Area 8 – Pletcher Road, Plan and Profiles |
| CI-61 – CI-64 | Area 9 – Country Club Trail, Plan and Profiles |
| CI-65 – CI-76 | Interconnection Details |
| CI-77 – CI-89 | Testing and Disinfection Plans |
| CI-90 – CI-92 | Erosion Control Plan |
| CI-93 – CI-97 | Miscellaneous Water Details |
| CI-98 | Maintenance and Protection of Traffic (M&PT) Details |
- Prepare Stormwater Pollution Prevention Plan (SWPPP) to obtain coverage under the NYS SPDES GP-02 Permit Program.
 - Prepare regulatory permit applications and obtain local, county, and state agency approvals associated with the design and construction work. For purposes of this proposal, we have assumed that all new waterline will be constructed within existing Rights-of-Way and that no easement acquisition will be required.
 - Obtain Prevailing Wage Rate Schedules from the New York State Department of Labor for inclusion in the contract documents.



- Obtain subsurface information. Our scope assumes a total of 45 soil borings. The borings will be performed to a depth of 10 feet or refusal and include five (5) rock cores, 5 feet each. Soil borings will be required at cased crossings by bore and along critical areas where rock is anticipated.
- Meeting with the Town, as necessary, to review the proposed design documents.
- Preparing construction cost estimates and time schedule for construction of the project based upon final plans and specifications.

Agency Approvals

- Assist the Town in obtaining required agency approvals of the proposed project including the USACOE, the NYSDEC, the NYSDOH, the NYSDOT, the NCDPW, CSX Transportation, and the NCDOH, as required.
- Provide up to ten sets of Contract Documents for agency review/approval purposes.

Task 3 – Bid Phase Services

Upon completion of detailed design, GHD will provide the following bid phase services:

- Assist the Town with advertisement for bids. GHD will prepare and distribute the notice of advertisement for publication in the required newspapers.
- Provide the Town with a list of potential bidders, and furnish and distribute up to 30 sets of contract drawings, specifications, and other informational documents required for bidding and construction purposes.
- Attend a pre-bid meeting/site walk-through with prospective bidders, and respond to bidders' questions and issue addenda (as necessary for design clarification).
- Assist the Town in securing bids, attending the bid opening, and tabulating and analyzing the bid results.
- Provide recommendations on the award of the construction contract.

Task 4 – Construction Administration Phase Services

GHD will perform construction contract administration throughout the duration of construction, which will include:

- Reviewing and approving contractor submittals for material and equipment to be used on the project for compliance with design concept and specification
- Conducting monthly progress meetings to review project progress, schedule and costs (for the duration of the construction contract), and issuing typed minutes
- Reviewing and making recommendations to the Town for all construction progress payment requests, and generating summary and continuation sheets consistent with the construction contract proposal



- Reviewing and making recommendations to the Town for payment of any change order requests by the contractor, generating summary and execution sheet detailing proposed change(s)
- Conducting bi-weekly visits to the project site during construction by the Construction Manager
- Providing general consultation, advice and problem resolution to the Town, as necessary, during construction
- Interpreting contract documents and resolving unanticipated field problems by communications and visits to the site, as necessary
- Providing two sets of prints and one CD (AutoCAD format or compatible version) of record drawings for the completed work.

Task 5 – Resident Inspection Phase Services

A full-time resident inspector will be assigned to the project. Resident inspection services are based on the following:

- A 52-week construction duration with onsite inspection at 45 hours per week.
- Documenting the contractor's daily work progress
- Confirming that work is being performed according to the final contract documents
- Reviewing and clarifying contractor questions
- Making recommendations for field adjustments to the work
- Assisting with coordination and verifying that the sequence of construction is properly followed
- Obtaining measurements and quantities for contractor payments
- Obtaining measurements and preparing as-built drawing sketches for the record documents
- Completing final inspection and generating a project punch list for the project with the Town prior to final acceptance of the work
- Completing final certification to the local authorities that the water system has been installed and tested in accordance with our drawings and specifications



3. Proposed Schedule and Fee

GHD will begin work on this project immediately upon receipt of written authorization. The project will be completed in accordance with the following schedule.

Table 3.1 Proposed Schedule

Task	Proposed Date
Topographic Survey, Design, Permitting	12/2017 – 8/2018
Advertisement	9/1/2018
Bid/Award/Contract Execution	9/2018 – 10/2018
Notice to Proceed	11/1/2018
Construction Completion	11/1/2019

We propose to complete the above scope of services for \$1,048,700 as detailed below.

Table 3.2 Fee Breakdown

Task	Description	Fee
1	Topographic Survey and Base Mapping	\$164,400 Lump sum
2	Design Phase Services	\$388,000 Lump sum
3	Bid Phase Services	\$ 15,500 Lump sum
4	Construction Administration Phase Services	\$205,000 Hourly, NTE
5	Resident Inspection Phase Services	\$275,800 Hourly, NTE

Invoicing for lump sum tasks (Tasks 1 - 3) will be issued monthly based upon the percentage of work completed during the prior month. Tasks 4 and 5 will be invoiced on an hourly basis and direct expenses will be invoiced at cost plus five percent (5%). Invoices shall be due within 30 days from receipt.

Please note that all work performed in connection with this proposal is pursuant to the terms and conditions in the current Professional Services Agreement between GHD and the Town.

Should this proposal meet with your approval, please sign in the space on the following page and return a copy to us for our files.



Thank you for the opportunity to submit this proposal. We look forward to working with you on this important project. If you have any questions or require additional information, please do not hesitate to call me.

Sincerely,

GHD

Robert P. Lannon Jr., PE
Vice President

RPL/DMB/las/1

cc: Lewiston Town Board
David M. Britton, PE – GHD
Mr. Mel G. Gates – GHD
Mr. Daniel J. Kolkmann – GHD

Acceptance by the Town of Lewiston

This proposal was accepted by the Town Board pursuant to a duly adopted Resolution at its November 27, 2017 Board meeting, and the Supervisor was duly authorized to sign this Agreement.

Dated: 11/27/17

Steven Broderick, Supervisor