

TOWN OF WEST SENECA



ENGINEERING DEPARTMENT

TOWN SUPERVISOR  
SHEILA M. MEEGAN  
TOWN COUNCIL  
EUGENE P. HART  
JOHN M. RUSINSKI

December 12, 2013

Honorable Town Board  
Town of West Seneca

**Re: Cazenovia Creek Siphon Installation  
Professional Services**

Honorable Board Members,

As part of the Town of West Seneca's ongoing Order on Consent with the New York State Department of Environmental Conservation improvements are necessary at the Cazenovia Creek siphon in order to mitigate sanitary sewer.

GHD Consulting Engineers, LLC (formally Stearns & Wheeler) has provided a proposal to complete engineering design services for the mitigation of flows at the Cazenovia Creek siphon. They will complete the design services for the installation of a new siphon and modifications to the junction chamber located near Plant 5 for a total fee of \$348,000, as noted in the attached proposal. This amount includes a \$10,000 allowance for assisting Clark Patterson Lee (CPL) during the bidding and construction phases.

Please note GHD will be working directly for the Town of West Seneca and all payments and correspondence should be directed to GHD Consulting Services, LLC. Funding for these engineering services is budgeted under the capital sewer project (Account No. 005.8100.0200.0524).

Please authorize GHD Consulting Engineers, LLC to complete the required engineering services for the design of the new siphon and convergence structure. Upon your review and approval please sign one copy of the attached Agreement.

Very truly yours,

A handwritten signature in black ink that reads "Jason A. Foote".

Jason A. Foote, P.E.  
Town Engineer

cc: Files: TB.  
Project



December 6, 2013

Mr. Richard Henry, P.E.  
Town Engineer  
Engineering Department  
Town of West Seneca  
1250 Union Road  
West Seneca, NY 14224

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TOWN OF WEST SENECA  
ENGINEERING DEPT

Re: Proposal for Engineering Services-Siphon,  
Connecting Chamber and Miscellaneous Piping Design  
And Permitting

Dear Mr. Henry:

Thank you for the opportunity to discuss and submit a proposal for Engineering Design Services for the mitigation of flow restrictions at the site of SSO 003 which is located at the Cazenovia Creek siphon crossing near Seneca and Main Streets. GHD has been providing engineering services to the Town since January 2009 associated with the Town's sanitary sewer overflow (SSO) elimination program of which mitigation of sewer system flow restrictions is an integral part.

#### PROJECT UNDERSTANDING

As part of the original I/I evaluation several locations within the collection system were identified to have flow restrictions. These locations include:

1. Cazenovia Creek Siphon near Seneca and Main Streets
2. Orchard Park Road West of Ridge Road
3. Willowdale Drive near Emerald Drive
4. Seneca Street near Mill Road

These restrictions generally are the result of the confluence of sewers with insufficient downstream sewer capacity to convey the combined flow from the upstream sewers. These flow restrictions often contribute to SSO discharges to receiving waters. Location 1 has been evaluated using the computer model developed by GHD for the Town of West Seneca (Town) and it has been determined that the configuration of the siphon and the downstream 36-inch interceptor sewer are subject to high flow and low velocities leading to sediment buildup in the siphon and interceptor sewer. This condition severely limits the capacity of these facilities and contributes to discharges from SSO 003, however, the model is predicting that the siphon and interceptor sewer are undersized for expected peak flows even under clean pipe conditions.

We understand that the Town is implementing a program to investigate the amount of sediment in the siphon and interceptor sewer and will schedule their cleaning following this investigation. Based upon modeling results this will improve the hydraulics but will not mitigate discharges from SSO 003 during most wet weather events. Modeling results demonstrate that to improve siphon operation a new siphon barrel, sized for dry weather flow, will increase velocities and will help reduce the buildup of sediment in the siphon. The model further demonstrates that additional interceptor capacity is required to further mitigate discharges at SSO 003. The addition of a parallel interceptor provides added capacity and in line storage for wet weather flows which will help reduce the volume of discharges from SSO 003. It should be noted that these improvements will not eliminate discharges under all conditions but represent cost



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effective and environmentally sensitive mitigation strategy for SSO 003 and will provide significant benefit for Cazenovia Creek and downstream water bodies.

The installation of a dry weather flow siphon barrel and flow distribution modifications will more appropriately distribute flow to the original siphon barrels and will improve velocities for reduced sediment buildup. Influent sewer configuration at the upstream end of the siphon will be evaluated and modified to improve hydraulics and the ability of dry and wet weather flow to enter the upstream siphon chamber, reducing the hydraulic grade line and the potential for SSO discharges. The outlet on the downstream end of the siphon will be configured to direct flow into the original 36-inch interceptor thereby avoiding, to the greatest extent possible, the need to reconfigure existing lateral sewer connections. The existing interceptor will be used for dry weather flow and a portion of wet weather flow allowing the new parallel interceptor to be used during wet weather conditions only. At the downstream end of the interceptor sewers a chamber will be required to combine flow for conveyance to the Buffalo Sewer Authority for treatment. This chamber will be in the vicinity of Old Plant 5 and will permit the discharge of extreme high flow through SSO 002. GHD will assist the town and Clark Paterson Lee (CPL) in the evaluation and design of site specific areas such as the connection of the Orchard Park Road and Erie County Sewer District No. 3 (ECSD #3) connections and the Ashmund Road.

GHD has prepared the following scope and budget to assist the town in the design, permitting and State and Federal Environmental Quality Reviews for these sewer system improvements.

#### SCOPE OF SERVICES

GHD has structured our scope of services to address improved siphon operation for reduced sediment buildup, and added carrying capacity, storage in the interceptor sewer and hydraulic improvements at various locations. GHD understands that the Town's Engineer Clark, Paterson, Lee (CPL) will provide the design services for the parallel 36-inch interceptor sewer. GHD has included an allowance to assist and coordinate with CPL during this design process.

##### *General Design Services*

- Attend one project kick-off meeting with CPL and the Town of West Seneca.
- Assist during the inspection and preparation of contract specifications for the cleaning of the existing siphon and 36-inch interceptor.
- Attend 8 monthly progress meetings.
- Attend 4 meetings with NYSDEC and USACE for permitting and approval purposes.
- Coordinate with CPL during the design of the upstream and downstream connection chambers to the existing and proposed 36-inch interceptor sewers and at the Orchard Park Road and ECSD #3 connections.
- Prepare monthly status memorandums.
- Prepare permitting applications and backup documentation for submittal of a Joint Application to the NYSDEC and US Army Corps of Engineers.
- Provide progress submissions at 30, 60 and 95 percent design completion stages.
- Attend 3 submittal review meetings and incorporate CPL/Town comments as appropriate.
- Provide twenty-five (25) sets of the final contract documents for bidding purposes.

##### *Design Assumptions*

- CPL will act as the Town's representative and will provide design services for the parallel 36-inch interceptor sewer.
- CPL will provide SEQR services for the entire project.
- One (1) new dry weather flow siphon barrel crossing of Cazenovia Creek will be designed.

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- Siphon entrance and exit chambers modifications will be designed as necessary and will accommodate the proposed 36-inch parallel interceptor sewer.
- One junction chamber at Old Plant 5 will be designed.
- Town/CPL will provide topographic survey and soil boring information.
- A single construction contract will be issued for the siphon installation and will include the siphon inlet and outlet chambers, piping modifications at the upstream of the siphon inlet chamber, piping modifications at or near the junction chamber near Old Plant 5 at the confluence of the interceptor barrels and modifications to the existing flow meter.

#### *Preliminary Design*

- Obtain and evaluate existing record drawings for the siphon chambers and sewer connections near Old Plant 5.
- Evaluate flow metering alternatives and prepare preliminary designs for the selected flow metering technology.
- Obtain the services a subconsultant to assist in performing confined space entry to gather as built information at the up and downstream siphon chambers and Old Plant 5 junction and flow meter chambers.
- Size the proposed dry weather flow siphon barrel.
- Prepare schematic chamber layouts for review with Town/CPL.
- Establish the siphon flow distribution methodology and if appropriate control weir elevations.
- Evaluate piping modifications at the upstream siphon inlet chamber and connecting sewers to improve the hydraulics to reduce SSO discharges.
- Evaluate siphon installation methodologies to determine what method is the most appropriate and cost effective.
- Prepare a preliminary assessment of probable construction cost.
- Submit 30 percent design drawings for review and comment by the Town/CPL.
- Incorporate Town/CPL comments, as appropriate, and proceed to final design.
- Coordinate with CPL regarding the 36-inch parallel interceptor sewer connections to the junction chambers and lateral sewer connections.
- Identify locations for soil borings and coordinate with CPL to obtain the borings.
- Prepare a Basis of Design Report for submittal and approval by the NYSDEC.

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#### *Detailed Design*

- Prepare contract plans and specifications for one (1) construction contract suitable for competitive bidding purposes.
- Incorporate into the design: upstream and downstream siphon chamber modifications, siphon influent pipe modifications to improve hydraulics and reduce SSO volumes, Plant #5 junction chamber modifications and flow metering modifications.
- The design shall provide: plan and profile; structural drawings with dimensions and reinforcing indicated; standard details providing sufficient information for construction purposes.
- Submit design drawings at the 85 percent complete stage to Town/CPL for review and comment.
- Incorporate comments, as appropriate, and proceed to 95 percent design.
- Submit 95 percent contract Engineers Basis of Design Report, plans and specifications to the NYSDEC for review and comment.
- Respond to one round of comments from the NYSDEC and incorporate comments, as appropriate, into the final plans and specifications and submit the revised documents for approval by the NYSDEC.
- The bid package will include boiler plate (GHD standard) and required technical specifications.



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*Permitting*

- Prepare a Joint Application for Permit for submittal to the NYSDEC and US Army Corps of Engineers. The permit will cover stream bank disturbance and State and Federal wetlands.
- Submit supporting documentation.
- Respond to one round of comments from each regulator.

*Proposed Fee*

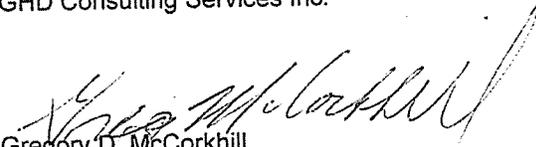
GHD has prepared our Lump Sum Fee based upon the above scope of services.

|  |                  |
|--|------------------|
| Preliminary Design 30%                 | \$122,000        |
| Detailed Design                        | \$184,000        |
| Permitting                             | \$ 32,000        |
| Assistance During Bid and Construction | \$ 10,000        |
| <b>Total Fee</b>                       | <b>\$348,000</b> |

GHD looks forward to working with the Town on this important project. If there are any questions please feel free to call.

Sincerely;

GHD Consulting Services Inc.

  
Gregory D. McCorkhill  
Senior Project Manager – Infrastructure

GDM/snb

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