

BUFFALO WATER BOARD MINUTES
December 13, 2017

MEMBERS PRESENT:

Oluwole A. McFoy
Gerald Kelly
Michael Finn
William Sunderlin

OTHERS PRESENT:

Peter Merlo
Jack McMahon
David Hill
Charles Martorana
Stephen Waldvogel
Tim Shea
Patrick Martin
Damon Sykes
William Ferguson
Lisa Foti
Michael Wolasz

The regular monthly meeting of the Buffalo Water Board was called to order at 8:00 a.m.

1. Motion by Mr. Finn to approve the agenda. Seconded by Mr. Sunderlin. Approved.

Motion by Mr. Finn to approve the minutes from the November 14, 2017 meeting. Seconded by Mr. Sunderlin. Approved.
2. Staff Update: Mr. Hill with Veolia Water provided a staffing update to the Buffalo Water Board.
3. The Buffalo Water Board discussed accepting the new watermain installed on Chalmers Avenue as a new asset. The Board decided to require the contractor to provide a 5-year bond in an amount to cover the cost to loop the watermain with the existing distribution system as originally designed if subsequent phases of this project are not constructed.
4. The Buffalo Water Board discussed accepting the new watermain installed on Lancaster Avenue as a new asset. The Board decided that a permanent easement is necessary to allow for maintenance of the watermain until title to this portion of right of way in the extended Lancaster Avenue is conveyed to the City of Buffalo.
5. Upon the recommendation of the Principal Engineer of the Division of Water, motion made by Mr. Finn to allocate funding for the City of Buffalo Division of Purchase to purchase large valves and appurtenances in an amount not-to-exceed \$150,000.00. Seconded by Mr. Kelly. Approved.
6. Upon the recommendation of the Principal Engineer of the Division of Water, motion made by Mr. Kelly to accept the report of competitive bids and authorize funds for the Division of Water Site Security Improvements Project with the following contractor in the amount not-to-exceed :

CIR Electrical Construction Corp. \$ 319,000.00
(See attached bid report for other bid information)

The contract will be engaged by the City of Buffalo. Seconded by Mr. Finn. Approved.
7. Upon the recommendation of the Principal Engineer of the Division of Water, motion made by Mr. Kelly to authorize Veolia Water to increase its contract for the Loop System for the project involving the State University of New York at Buffalo Corrosion Control Research Project, in an amount not-

to-exceed \$20,000, inclusive of Veolia Water's 10% administrative fee. Seconded by Mr. Finn. Approved.

8. Upon the recommendation of the Principal Engineer of the Division of Water, motion made by Mr. Sunderlin to authorize Veolia Water to increase its contract with Ancor for work associated with the replacement of two Poly Aluminum Chloride (PAC) storage tanks at Colonel Ward Water Treatment Plant in an amount not-to-exceed \$8,000, inclusive of Veolia Water's 10% administrative fee. Seconded by Mr. Finn. Approved.
9. Upon the recommendation of the Principal Engineer of the City Division of Water, motion made by Mr. Sunderlin to authorize Veolia Water to increase its contract with Evoqua Water Technologies for repairs to the Influent Screen at Colonel Ward Water Treatment Plant in an amount not-to-exceed \$19,000, inclusive of Veolia Water's 10% administrative fee. Seconded by Mr. Finn. Approved.
10. Upon the recommendation of the Principal Engineer of the City Division of Water, motion made by Mr. Sunderlin to authorize funding for a professional services contract with GHD Consulting Services, Inc. for Influent Screen Rehabilitation Project in an amount not-to-exceed \$232,700, to be made with and administered by the City of Buffalo. Seconded by Mr. Finn. Approved. (See attached proposal).
11. Upon the recommendation of the Principal Engineer of the Division of Water, motion made by Mr. Sunderlin to authorize Veolia Water to extend their contract with Matrix for the Door Hanger Service Disconnection Notification Program through June 30, 2018, in an amount not-to-exceed \$30,000.00, inclusive of Veolia Water's 10% administrative fee. Seconded by Mr. Finn. Approved.
12. The City of Buffalo Accountant, Mr. William Ferguson, reviewed the Audited Draft Financial Report with the Buffalo Water Board. Motion by Mr. Kelly to approve the Audited Draft Financial Report. Seconded by Mr. Finn. Approved.
13. Mr. Maving of GHD Consulting Services, Inc. presented a summary of the invoices to be paid to Veolia Water and recommended payment to Veolia Water for services rendered by Destro & Brothers Concrete Co. and Kandey Company Inc. as follows:
 - a) Motion by Mr. Finn to approve payment of \$74,306.82 inclusive of Veolia's 10% administrative fee for services by Destro & Brothers Concrete Co. for emergency watermain repair. Seconded by Mr. Sunderlin. Approved.
 - b) Motion by Mr. Sunderlin to approve payment of \$31,469.58 inclusive of Veolia's 10% administrative fee for services by Kandey Company Inc. for emergency watermain repair. Seconded by Mr. Finn. Approved.
14. Motion by Mr. Finn to approve a Fund Transfer of \$516,641.67 from Buffalo Water Board Reserve Account to Engineering and Technical Account (# 53023516-432004). Seconded by Mr. Sunderlin. Approved.
15. Mr. Waldvogel of GHD Consulting Services, Inc. delivered a report of GHD's on-going professional services to assist the Buffalo Water Board on a number of projects, including the Pumping and Filtration Plant Improvements Project, blue-green algae evaluation in Lake Erie and ongoing review of collection of accounts receivable.
16. Mr. Hill from Veolia Water presented and reviewed Veolia Water's monthly report with the Buffalo Water Board. He discussed current projects that are progressing at the Colonel Ward Water Treatment Facility, including services to improve the accuracy of the City's model

distribution system, analysis of a preliminary draft report regarding the Cyber Vulnerability Assessment, Customer Service resulting in call answer rates of 99 percent and our work force becoming more mobile with the delivery today of 5 Bak computers for Water Board vehicles with 15 more on order..

17. Motion by Mr. Sunderlin to enter Executive Session to discuss current litigation. Seconded by Mr. Finn. Approved
18. Motion by Mr. Finn to exit Executive Session. Seconded by Mr. Sunderlin. Approved.

Motion by Mr. Kelly to adjourn at 8:52 A.M. Seconded by Mr. Finn. Approved.

Next meeting, Wednesday, January 10, 2018 at 8:00 a.m. in Room 502 in City Hall.



December 12, 2017

Reference No. 11137544

Peter J. Merlo, P.E.
Principal Engineer/Division of Water
City of Buffalo
602 City Hall
Buffalo, New York 14202

Dear Mr. Merlo:

**Re: City of Buffalo
Screen Replacement and Building Improvements Proposal**

GHD Consulting Services Inc. (GHD) is pleased to submit this letter proposal to provide professional engineering services to the City of Buffalo for the Screen Replacement and Building Improvements Project at the on-shore screen house located at the Colonel Water Treatment Facility.

1. Project Background

The Buffalo Water Board (BWB) owns, operates and maintains two redundant traveling raw water screens located within the on-shore screen house. The screens remove debris from the gravity-fed supply protecting the low service pumping equipment from damage. The two existing US Filter/Link Belt Model #45 traveling water screens were originally installed in 1951 and have undergone only modest part replacements in the years since. In particular, in 2000 GHD completed an on-site rehabilitation of the west screen to address only the wear parts, the foot shaft assembly and presumably the splash housing. During this project, the east unit was not addressed. In 2016, the east screen failed, leaving the BWB with a single operational unit and no redundancy.

Each existing screen is rated for 104,000 gallons per minute (gpm) at 5.5-feet per second through a 100 percent clean screen operating at a low water level. The screens are cleaned using a nozzle-based spray wash system that was designed to prevent the normally negligible head loss from exceeding 6 to 8 inches across the screen. Each screen measures 7 feet, 2 ½ inches in width and 34 feet in length (as measured from the center of the head shaft sprocket to the center of the foot sprocket). The single speed drive units were designed for a screen travel of approximately 10 feet per minute.



2. Project Qualifications

Below are examples of GHD's recent screening projects with brief descriptions of the scope of work.

Colonel Ward Screen Rehabilitation | City of Buffalo (Completed in 2000)

- USC Screen was retained to perform a field inspection and evaluation.
- GHD prepared plans and specifications for the removal and rehabilitation of the existing screens.
- Design of a temporary screen used in place of the existing screen while the screen was off-site during the rehabilitation process.

Colonel Ward Screen Rehabilitation Study | City of Buffalo (Completed in 2016)

- Evaluated the condition of the existing traveling screens including a detailed inspection of both units, developing a scope of work and cost estimate for rehabilitation of the existing screens and completing an evaluation of rehabilitation versus replacement alternatives. This study recommended replacement of both screens versus repair and forms the basis for the current Screen Replacement and Building Improvements project.

Raw Water Intake Screen Replacement | City of Lockport (Completed in 2017)

- Replacement of an existing raw water intake screen
- Demolition of two existing screen units
- Construction of a new bypass channel with a stationary screen
- Installation of a screening debris collection hopper to be dumped in an outside roll-off using the existing overhead crane

Wastewater Treatment Influent Screen Evaluation Study Report | City of Lockport (Completed in 2014)

- Evaluation and report of the City's existing wastewater influent screens
- Evaluation included an investigation of possible causes of screen failures, developed alternatives for short-term repair, and made recommendations for long-term course of action to prevent future failures

Mechanical Bar Headworks Screen Design | City of North Tonawanda (Completed in 2016)

- Added screening process to the WWTP wet well
- Design included a mechanical bar screen, washer/compactor and discharge chute equipment
- Project required using an existing skylight for installation of the new screen
- Designed a discharge chute to lift screened materials approximately 20-feet to concrete slab discharge disposal area



Mechanical Bar Storm Screen Design | City of North Tonawanda (Completed in 2017)

- Replacement of an existing mechanical bar screen within the WWTP storm weather wet well (new unit has a peak flow of 95 mgd)
- Screen dimensions of 50-feet long by 9-feet wide was designed to span three floors
- Screenings discharge to an existing conveyor and disposal container

Mechanical Bar Headworks Screen Design | Town of Hanover (Completed in 2017)

- Added screening process to the WWTP wet well
- Screen dimensions of 30-feet long by 2-feet wide
- Washer/compactor and discharge chute equipment was included to discharge to a concrete slab discharge disposal area located at surface grade

Mechanical Bar Headworks Screen Design | Village of Springville (Completed in 2015)

- Added screening process to the WWTP wet well of an average flow of 1.15 mgd
- Washer/compactor and discharge chute equipment
- Screen and washer/compactor was housed in a new building

Mechanical Bar Headworks Screen Design | Village of Alden (Anticipated 2018 Completion)

- Replacement of a mechanical bar screen to WWTP wet well
- Washer/compactor and discharge chute equipment to lift screenings to a concrete slab discharge disposal area located 25 feet above the screen

3. Project Approach

Evoqua was retained in August 2016 to complete a comprehensive dive inspection of both the east and west screens. The condition of the screen components was consistent with the past reporting and most of both screens' components were recommended for replacement. The inspection reported significant frame corrosion at the weld locations. Based on the frame deterioration (both subaqueous and above water) that was observed, it was recommended that both frames be replaced. This proposal assumes that the proposed replacement equipment will match the existing and as such have the same dimensioning and rated capacity. This being the case, our proposal does not contemplate any well modifications. The screens can be shipped shop-assembled or in sub-assemblies. The scope of supply includes new frames, baskets/trays, main carrier chains, head shaft assemblies, spray headers, front and rear splash housings, and control panel (including new drive motor starters, overload protection, and relay logic). The replacement scope of work does not include new embedded screen guide rails, since the inspection reported rails to be in satisfactory condition and appropriate for reuse.



During construction, each rail will be fully inspected and if necessary rehabilitated; including cleaning and painting especially any areas above the waterline.

In addition to the proposed two screen replacements, the screening building is in need of repair to include:

- Replacement of the two existing effluent sluice gates and associated vault/wet well concrete modifications and repairs
- Screen controls upgrades
- Building electrical, heating and ventilation upgrades
- Roof improvements for screen installation
- Window replacement (existing main access door appears to be in good condition)
- Window removal, brick fill and backfill to eliminate the large window well along the north side of the building
- Relocation of an existing 2-foot diameter storm sewer located within the wet well
- Miscellaneous site improvements including the existing entrance sidewalk

4. Scope of Services

GHD proposes the following services for the Screen Replacement and Building Improvements Project:

4.1 Task 1 – Preliminary Design

Due to the need to maintain raw water flow to the plant and the unknown conditions below the main floor, in particular the configuration of the screen channels and the wet well, construction staging and maintenance of plant operations will be a critical component of the project. Under this phase of the work, GHD will evaluate the operations of the screen systems as it pertains to the flow of raw water to the plant and identify any pitfalls that can be encountered during the work. Key components of this evaluation will include the staging of the screen replacement especially given the fact that currently only the west screen is operational, replacement of the effluent sluice gates, and removal and relocation of the existing storm sewer. The deliverable for this task will include a maintenance of plant operations (MOPO) and construction staging plan memorandum. It is envisioned that this plan will form the basis for the construction staging plan to be included in the contract documents.



4.2 Task 2 – Design Phase Services

Design Phase services will consist of the following:

1. Attending a kick-off meeting with City and Veolia representatives to discuss the project team, project goals, budget, schedule, design criteria, and concepts. The City/Veolia shall provide all pertinent existing plant as-built drawings, specifications, and equipment information.
2. Attending two additional progress meetings representing 60 percent and 90 percent design documents completion for review and comment by the City and Veolia. Progress meetings will be held to discuss project status, issues and concerns.
3. Preparing the basis of design letter for New York State Department of Health (NYSDOH) approval. Basis of design reporting will include the construction staging and MOPO plans, screen replacement concepts, original and proposed design criteria, and hydraulic calculations supporting the flow rate.
4. Preparing design documents for the following items in accordance with the Project:
 - a. Demolition and removal of both screening units, associated equipment and electrical disconnection and removal.
 - b. In-kind replacement of the proposed screens retrofitted into the existing channels. Demolition and replacement of the existing wash water pump and water supply piping to screen equipment. Due to the unknown capacity and horsepower of the existing pump, the new wash water pump will be sized to accommodate the screening equipment requirements. The building electrical system will be evaluated to accommodate any changes in pump horsepower.
 - c. In-kind replacement of the raw water sampling pump, sample sink and associated piping/tubing.
 - d. Electrical design to power the screening equipment control panel and wiring to the screening equipment. The screening equipment controls scheme will be determined during final design and new controls will be provided. The screen control panel will include alarm light for local notification. Wash water pumping will be controlled by solenoid and timer located in the screen control panel. New starters for screen equipment will be included in electrical design and the existing motor control center will be replaced due to its age and condition.
 - e. Demolition and in-kind replacement of the two existing effluent sluice gates. Gates will be replaced with similarly sized cast iron gates with electrical actuators. Gates will be controlled by manual ON/OFF controls with security key interlock system. New electrical service to the gates will be provided.
 - f. Demolition and replacement of the existing concrete slab located adjacent to the Screening Building, which covers the wet well. The concrete is in poor condition and requires removal to access the sluice gates for replacement purposes.



- g. Screen Building electrical 110V and 480V circuit/conduit demolition and replacement including receptacles, local disconnects and lighting.
 - h. Provide for Screen Building demolition and replacement of the existing heating and ventilation (H&V) systems. H&V equipment will be sized for six air changes per hour for unoccupied space and City standards.
 - i. If necessary, evaluate two options to be considered by the City to improve the Screen Building roof. Option #1 includes the replacement of the existing wood roof with precast concrete panels that can be removed for future screen maintenance/replacement. Option #2 includes roof replacement with precast concrete panels with the addition of two roof hatches sized sufficiently for screening equipment installation and removal. Structural analysis will be included in design services. A structural analysis will be completed to provide adequate roof stability for both Options #1 and #2. For the purposes of this proposal, we have assumed that the existing opening is adequately sized and properly located such that only limited structural modifications will be required to accommodate the access modifications.
 - j. Demolition and replacement of new windows. The existing main access door appears to be in good condition but will be evaluated for replacement.
 - k. Removal of below floor level windows and fill the remaining openings with block or brick. The existing retaining wall and wall supports will be removed, and the existing window well area will be backfilled to match the surrounding grade.
 - l. Relocation of the 2-foot diameter cast iron storm sewer located above the wet well. New storm sewer will be located around the outside of the wet well. The existing internal pipe sections will be removed and all openings sealed watertight. Cleanouts or manholes will be installed at each bend along the new piping alignment.
5. Preparing contract documents in compliance with NYS Wicks Law. General Construction, Electrical, and H&V Construction contracts are anticipated and are the basis for the proposed project budget.
 6. Preparing an engineer's opinion of probable construction cost prior to bidding.

4.3 Task 3 – Bid Phase Services

GHD's services under Task 3 will include:

1. Furnishing up to 20 sets of Contract Documents for bidding and construction purposes. GHD will distribute the Contract Documents to prospective bidders during the bid period. Should the City decide to issue contract documents electronically, GHD will coordinate document transmission.
2. Assisting the City with advertisement for bids. GHD will prepare the notice of advertisement for the City to publish in the required newspapers.
3. Providing the City with a list of potential bidders for each Contract. Attending a pre-bid meeting/site walk-through with prospective bidders, and assisting the City in responding to bidders' questions



and issuing addenda (as necessary for design clarification). For the purposes of this proposal, GHD assumes that one addendum will be issued.

4. Assisting the City by attending the bid opening, and tabulating and analysing bid results.
5. Making recommendations on the award of each construction contract.

4.4 Task 4 – Contract Administration Services

Under this task, GHD will provide the following services:

1. Schedule and conduct a pre-construction meeting, and prepare and distribute meeting minutes to involved parties.
2. Review and approve contractor submittals for material and equipment to be used on the project for compliance with design plans and specifications.
3. Conduct bi-weekly progress meetings to review project progress, schedule, and costs (for the duration of the construction contract), and issue typed minutes.
4. Review and make recommendations to the City for all construction progress payment requests, and generate summary and continuation sheet consistent with construction contract proposal.
5. Review and make recommendations to the City for payment of any change order requests by the contractor, generate summary and execution sheet detailing proposed change(s).
6. Conduct visits to the project site during construction by either the Construction Manager or Project Manager, as required.
7. As necessary, provide general consultation, advice, and problem resolution during construction.
8. Interpret Contract Documents and resolve unanticipated field problems by communications and visits to the site, as necessary.
9. Provide two sets of plotted paper copy sets and one CD/DVD of the electronic files (AutoCAD format or compatible version) of the record drawings for the completed work.

4.5 Task 5 – Resident Inspection Services

A full-time resident inspector will be assigned during periods of active construction for this project. The anticipated on-site construction duration is 16 weeks for construction of the Screen Replacement and Building Improvements. Resident inspection services are based on the following:

1. Active on-site construction duration of 16 weeks at 45 hours per week.
2. Documenting the contractor's daily work progress.
3. Observing work to determine the progress, quality, quantity and conformance of the work in accordance with the final contract documents.
4. Reviewing and clarifying contractor questions.



5. Making recommendations for field adjustments to the work.
6. Assisting with coordination between each contractor and verifying that the sequence of construction is properly followed, as required.
7. Obtaining measurements and quantities for contractor payments
8. Obtaining measurements and preparing record documents.
9. Completing final walkthrough and generating a project punch list with the City prior to final acceptance of the work.

5. Project Schedule and Fee

GHD proposes to complete the Project design work within 120 days from authorization by the City, and anticipates that construction will take up to 16 weeks following award and notice to proceed for the construction contracts.

GHD proposes to complete the above-referenced scope of services for \$232,700 in accordance with Table 5.1 below.

Table 5.1 Fee Breakdown

Task	Description	Proposed Fee	Fee Type
1	Preliminary Design	\$ 19,700	Lump Sum
2	Design Phase Services	\$ 86,000	Lump Sum
3	Bid Phase Services	\$ 7,000	Lump Sum
4	Contract Administration Services	\$ 25,000	Lump Sum
5	Resident Inspection Services (budgeted 720 hours)	\$ 95,000	Hourly Not-to-Exceed
TOTAL		\$232,700	

Invoicing for Tasks 1 through 4 will be issued monthly based on the percentage of work completed in the prior month. Task 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.



We trust that the proposed scope of services and budget meet the needs of the City, and we look forward to continuing our relationship with the City of Buffalo on this important project. Should you have any questions or wish to discuss this proposal, please feel free to contact me.

Sincerely,

GHD

A handwritten signature in black ink, appearing to read 'Stephen Waldvogel', written in a cursive style.

Stephen C. Waldvogel, PE
Project Manager

SCW/las/2

cc: Oluwole A. McFoy, PE – Water Board Chairman
Mr. Kenneth Maving – GHD
Robert P. Lannon Jr., PE – GHD