



ERIE COUNTY WATER AUTHORITY

INTEROFFICE MEMORANDUM

October 7, 2022

To: Terrence D. McCracken, Secretary to the Authority

From: William W. Wheeler, Distribution Engineer

A handwritten signature in blue ink, consisting of a large 'W' followed by several loops, enclosed in a blue circle.

Subject: Contract NC-043
New Pump Station at Newstead Storage Tank
ECWA Project No. 202100048

The following material is attached:

- Authorization Form requesting Board Authorization to execute the attached Amendment No. 1 to Professional Service Agreement with Nussbaumer & Clarke, Inc. (NC).
- Amendment No. 1 to Professional Service Agreement for the above referenced project.

This project, budgeted for design in 2021 and construction in 2022/23, will consist of the development of a Basis of Design and the Detail Design for a new pump station within the pedestal of the existing Newstead Tank. The Newstead Tank is an elevated tank and as the pressure zone developed in the vicinity of the tank, the pressure in the system has decreased such that the tank is currently unable to be filled completely. Due to aging infrastructure, ECWA is currently unable to simply increase the system pressure using upstream pump stations, without the risk of causing line breaks. The ability to completely fill the tank will provide increased pressure in the pressure zone and enhanced fire flows. In addition, the extra capacity can be used to ensure that we meet our contractual agreement for supplemental supply to Genesee County.

The additional fee to complete the work is \$32,840.00. ECWA and the Consultant discussed the level of services that were out of scope and associated additional fees. The additional fees are consistent with the fees associated with the original scope of work.

A summary of the out-of-scope items is presented below and detailed within the attached request for amendment from NC.

- Increased Operational Flexibility – the original SOW required the Consultant to design a pump station to fill the tank. To provide additional operational flexibility the Consultant was asked to design the station with three operational modes (tank filling, tank bypassing, and tank back feed)
- Flow Meter – ECWA requested that the station be designed with a bi-directional flow meter to assist with water management for flow leaving the tank. The water meter is better suited to assist ECWA with future water audits to determine volumes of unaccounted for water.

To: Terrence D. McCracken,
Secretary to the Authority

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- Station Bypass – ECWA requested the addition of temporary pumping connections to allow for temporary pumps to be installed in the event the pumps in the station are taken out of service. These connections will allow for ECWA to maintain serviceability from the tank.

Note that none of these items were contemplated within the scope of work provided to the consultants within the request for proposals for the design but were identified during the basis of design phase.

Budget Information:

Unit 2520 Eng/Const Control

Item No. 101589 Newstead PS Improvements

WWW:jmf

Attachments

cc: L.Kowalski

M.Quinn

L.Lester

CONT-NC-043-2101-X-01

ERIE COUNTY WATER AUTHORITY
 AUTHORIZATION FORM
 For Approval/Execution of Documents
 (check which apply)

Contract: NC-043 **Project No.:** 202100048
Project Description: New Pump Station at Newstead Tank

Item Description:


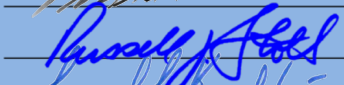





Agreement Professional Service Contract Amendment Change Order
 BCD NYSDOT Agreement Contract Documents Addendum
 Recommendation for Award of Contract Recommendation to Reject Bids
 Request for Proposals
 Other _____

Action Requested:


Board Authorization to Execute Legal Approval
 Board Authorization to Award Execution by the Chairman
 Board Authorization to Advertise for Bids Execution by the Secretary to the Authority
 Board Authorization to Solicit Request for Proposals
 Other _____

Approvals Needed:

APPROVED AS TO CONTENT:

<input checked="" type="checkbox"/> Sr. Distribution Engineer	<u></u>	Date: <u>10/10/2022</u>
<input checked="" type="checkbox"/> Chief Operating Officer	<u></u>	Date: <u>10/10/2022</u>
<input checked="" type="checkbox"/> Executive Engineer	<u></u>	Date: <u>10/10/2022</u>
<input checked="" type="checkbox"/> Director of Administration	<u></u>	Date: <u>10/10/2022</u>
<input checked="" type="checkbox"/> Risk Manager	<u></u>	Date: <u>10/10/2022</u>
<input checked="" type="checkbox"/> Chief Financial Officer	<u></u>	Date: <u>10/10/2022</u>
<input checked="" type="checkbox"/> Legal	<u></u>	Date: <u>10/10/2022</u>

APPROVED FOR BOARD RESOLUTION:

<input checked="" type="checkbox"/> Secretary to the Authority	<u></u>	Date: <u>10/11/22</u>
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Remarks: _____

Resolution Date: _____ **Item No:** _____

**AMENDMENT NO. 1 TO
PROFESSIONAL SERVICES AGREEMENT**

AMENDMENT, effective October 20, 2022 (“Amendment No. 1”), to the Professional Services Agreement, effective on March 4, 2021, by and between

ERIE COUNTY WATER AUTHORITY
295 Main Street, Room 350
Buffalo, New York 14203

hereinafter referred to as the “Authority,” and

NUSSBAUMER & CLARKE, INC.
3556 Lake Shore Road, Suite 500
Hamburg, New York 14219-1494

hereinafter referred to as the “Engineer.”

WHEREAS, on March 4, 2021 the Authority awarded the Engineer a professional service contract to provide engineering and consulting services relating to the construction of a new pump station at the Newstead Water Storage Tank (the “Contract”); and

WHEREAS, based on the recommendation of the Authority’s Chief Operating Officer and Executive Engineer, the Authority seeks to amend the Contract’s scope of services to include the evaluation of three design alternatives for the pump station as set forth in the Engineer’s letter dated July 19, 2022 and attached to and incorporated in this Amendment No. 1 as Appendix A; and

WHEREAS, the Engineer has requested an additional fee of \$32,840.00 for performing the additional services relative to the design alternatives; and

WHEREAS, in accordance with Article 5, § 5.02 of the Contract, any modification or variation from the terms of the Contract, must be in writing, authorized by a resolution of the Board of Commissioners of the Authority (the “Board”), and signed by all parties to be effective;

NOW, THEREFORE, in consideration of mutual promises herein set forth, the parties agree to the following:

- (1) The parties agree that Article 1, § 1.01, paragraph A in the Contract is deleted in its entirety and replaced with the following:

1.01 The Engineer shall provide engineering services for the Project which consists of construction of a new pump station within the base of the existing Newstead Water Storage Tank site. The

Engineer shall propose and evaluate three alternatives for pump and pipe configurations for the pump station. The Engineer agrees to provide the following services, which include, but are not limited to:

A. Hydraulics:

1. Conduct a desktop hydraulic analysis to size pumps and piping based on Authority provided data;

B. Mechanical:

1. Design new pumps to fill the tank;
2. Design new piping, valves, and associated mechanical equipment;
3. Determine removal of existing piping, valves, and appurtenances for the installation of new pumps;

C. Structural:

1. Conduct a structural analysis of existing tank base and its ability to support the new pumping system;
2. Prepare design of new pump pads and pipe supports;
3. Prepare design of new portable A-frame gantry type hoist;
4. Prepare design of new condensation break and associated structural analysis for the support of the structure, as required;

D. Electrical:

1. Investigate existing electrical service and its ability to meet the new pump station's service requirements;
2. Provide a list of new electrical equipment (power, cable, conduit, etc.) associated with the new pump station including a new electrical service if necessary;
3. Provide design of VFDs for the new pumps;
4. Evaluate existing lighting and new lighting as required for condensation break;
5. Provide design of new backup power generation equipment including automatic transfer switch;

E. HVAC:

1. Provide design for new HVAC equipment (gas unit heaters, exhaust fan components, AC for electrical equipment) associated with the new pump station/room and existing tank base enclosure;
2. Evaluate for the mitigation of condensation (e.g. condensation break) between pump station and bottom of bowl;

F. Controls:

1. Provide design for new PLC, control logic, and SCADA integration to operate the new pumps (ECWA to provide programming);
 2. Provide design for new instrumentation, including, but not limited to pressure sensors, tank level sensors, flow meter, etc.
- (2) The parties agree to amend Article 4, § 4.04, Paragraph A(1) to increase the lump sum payment for Basis of Design by \$10,300.00, changing the current figure of \$36,000.00 to \$46,300.00; and
- (3) The parties agree to amend Article 4, § 4.04, Paragraph A(2) to increase the lump sum payment for Design by \$22,540.00, changing the current figure of \$110,600.00 to \$133,140.00; and
- (4) The parties agree all other terms and conditions of the Contract shall remain without change or amendment; and
- (5) This Amendment may be executed in counterparts, each of which is deemed an original, but all of which together are deemed to be one and the same agreement.

IN WITNESS WHERETO, the parties hereto have caused this Amendment No. 1 to be signed by their respective duly constituted officers, attested and sealed pursuant to proper authority.

ERIE COUNTY WATER AUTHORITY

By _____
Jerome D. Schad, Chair

NUSSBAUMER & CLARKE

By _____
Michael T. Marino, PE, CEO

STATE OF NEW YORK)
COUNTY OF ERIE) ss:

On the _____ day of October, in the year 2022, before me personally came Jerome D. Schad, to me known, who, being by me duly sworn, did depose and say that he resides in Amherst, New York, that he is the Chair of the Board of Commissioners for the Erie County Water Authority described in the above instrument; and that he signed his name thereto by order of the Board of Commissioners.

Notary Public

STATE OF NEW YORK)
COUNTY OF ERIE) ss:

On the _____ day of _____, in the year 2022, before me personally came Michael T. Marino, PE, to me known, who, being by me duly sworn, did depose and say that he resides in North Tonawanda, New York, that he is the CEO of the Corporation described in the above instrument; and that he signed his name thereto by order of the Board of Directors of said Corporation.

Notary Public

APPENDIX A

July 19, 2022



William W. Wheeler, P.E.
Distribution Engineer
Erie County Water Authority
3030 Union Road
Cheektowaga, NY 14227-1097

Transmitted by E-mail

RE: Contract NC-043
New Pump Station at Newstead Water Storage Tank
ECWA Project No. 201900048
Proposed Amendment No. 1 to Engineering Contract
File No. 20J1-0154

Dear Mr. Wheeler:

Nussbaumer & Clarke, Inc. (Nussbaumer) recently completed the Design phase work under our agreement with the Erie County Water Authority (ECWA) for the New Pump Station at the Newstead Water Storage Tank (Tank). During the Preliminary Investigation and Due Diligence phase of the project, which preceded the detailed design, Nussbaumer completed a Basis of Design (BOD) Report in coordination with ECWA. Pursuant to the items presented under "other issues/concerns" and "scope changes" in the biweekly status reports, the scope of work performed during the Preliminary Investigation and Due Diligence phase and Design phase of the project were different than that anticipated during the Proposal phase and included in the Request for Proposals. Additionally, several changes were made during the Design phase that required revision or re-evaluation of elements previously designed.

The following are detailed descriptions of the extra work performed as part of the Preliminary Investigation and Due Diligence (a.k.a. BOD) phase, and during the Design phase of this project.

SCOPE CHANGES

Our proposal was based on the design of a single operating mode for the pump station. That is, to use the pumps to sufficiently fill the Tank thereby increasing pressure in the downstream distribution system without the risk of causing line breaks in the upstream pipe network. Following the project kickoff meeting, ECWA provided Nussbaumer with a suggested layout for the proposed pump station. This proposed layout included piping to bypass the Tank by pumping directly to the outlet pipe and downstream distribution system. Using the ECWA's initial layout, Nussbaumer created a pump/pipe configuration to meet these requirements. During a meeting held to review the proposed pump/pipe configuration, ECWA staff asked for a third operating mode to be added to the layout, that of back feeding the upstream pipe network via the Tank inlet. Consequently, Nussbaumer was tasked with the design of a pump station and associated piping/valving for three (3) operating modes. When all reviews were complete and the pump/pipe configuration was approved, the three (3) operating modes consisted of: No. 1, use the pumps to fill the Tank; No. 2, use the Tank as a supplemental source of supply for fire protection in the upstream pipe network (with the pumps off); and No. 3, use the pumps to supply the downstream distribution system when the Tank is out of service for inspection, maintenance, or repair.

Nussbaumer staff expended a significant effort on the new pump/piping configuration and operational requirements. This effort included a more complex instrumentation and control system, motorized isolation valves, and sequence of operations to meet the requirements of the three (3) operation modes. We initially evaluated the use of a Ross style pump control valve during the BOD phase per the ECWA design standards and then changed to the use of a swing check valve per ECWA, which required further investigations and redesign.

Mr. William W. Wheeler, P.E.
Erie County Water Authority
July 19, 2022



In addition to the above, at the project kickoff meeting, ECWA staff requested the addition of a venturi meter to the design. Since space within the tank base was limited, Nussbaumer investigated a location outside of the water storage tank. It was determined that this was not feasible and required the investigation of other metering options. This investigation resulted in Nussbaumer recommending a mag meter. Furthermore, ECWA staff requested that the mag meter be capable of bi-directional operation to allow metering of Operating Modes No. 1 and 2 described above. This investigation and design element was not anticipated in the preparation of the project proposal. The ECWA engineering personnel settled on using the recommended mag meter. However, after review of the draft BOD Report, ECWA commented that use of a venturi meter was still desired, and if still not possible, use an insertion mag meter rather than a flow through mag meter. This resulted in further investigation into both of these types of meters as well as preparing a response to these comments.

As noted above, part of the control system for the operating modes was the use of motorized isolation valves. During preparation of the 90% design plans and specifications, ECWA informed Nussbaumer that electric actuators would no longer be required on the three (3) butterfly valves used to isolate the pump/piping configuration for each operating mode. As a result, Nussbaumer had to modify the design plans, details, and specifications to eliminate the actuators from the design.

Lastly, during preparation of the proposal, Nussbaumer understood that the Tank would be taken out of service and bypassed for the duration of construction. ECWA requested that the design include piping connections for temporary pumping to allow for the Tank to remain in operation during construction. These connections have been shown on the plans and the temporary pumping has been described in the specifications (sequence of construction) to maintain an operating Tank throughout construction. Although a relatively minor element, it required specific unanticipated design considerations to incorporate the temporary connections into the permanent piping.

Based on the above scope changes Nussbaumer requests the ECWA prepare an amendment to account for the additional services described above and increase the engineering contract amount for the BOD phase and the Design phase by \$10,300.00 and \$22,540.00, respectively. This amount is approximately 22 percent of the original fee (\$146,600.00) for the BOD and Design phases of the project.

Nussbaumer appreciates the opportunity to submit this proposed Amendment No. 1 and continue working with ECWA on the project work for the ECWA. Should you have any questions, or need additional information, please do not hesitate to contact us at our convenience.

Sincerely,

NUSSBAUMER & CLARKE, INC.

Mark C. DiPasquale, P.E.
Project Manager

c: File – 01