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MAYOR

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August 1, 2022

Honorable City Council  
Newton City Hall  
1000 Commonwealth Avenue  
Newton Centre, MA 02459

Councilors:

I respectfully submit a docket item to your Honorable Council requesting authorization to appropriate and expend \$4,120,000 and authorize a general obligation borrowing of an equal amount for the construction and engineering services for the City of Newton Pump Station Rehabilitation CIP Project 1 and design for Project 2. Details of the project are attached.

Further, I request that your Honorable Council authorize any premium received upon the sale of the bonds or notes, less the cost of preparing, issuing and marketing them, and any accrued interest received upon the delivery of the bonds or notes be applied to the costs of the project being financed by the bonds or notes and to reduce the amount authorized to be borrowed for the project by a like amount.

Thank you for your consideration of this matter.

Sincerely,

Ruthanne Fuller  
Mayor

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Newton City Clerk  
2022 AUG - 1 PM 3:02

DEPARTMENT OF PUBLIC WORKS  
OFFICE OF THE COMMISSIONER  
1000 Commonwealth Avenue  
Newton Centre, MA 02459-1449  
Ruthanne Fuller-Mayor  
January 28, 2021

**To:** Maureen Lemieux, Chief Financial Officer

**From:** James McGonagle, Commissioner of Public Works  
Thomas Fitzgerald, Utilities Director  
Kelly Cadman, Financial Director DPW

**Subject:** Request to Docket funding in the amount of \$4,127,000.00 for Construction and Engineering Services for the City of Newton Pump Station Rehabilitation CIP Project 1 and Design for Project 2

**Brief Description:**

The City of Newton Department of Public Works-Utilities Division operates and maintains twelve (11) wastewater pump stations, one (1) stormwater pump station and three (3) potable water booster stations throughout the City. The mechanical, electrical and HVAC components of these stations were last rehabilitated in 1990-1991. The City entered into an Engineering Agreement with Brown & Caldwell to perform a Pumps Station Condition and Performance Assessment in order to develop a 10 year Capital Improvement Plan

The scope of work for the construction (attached) for CIP Project 1 consists of the following:

- Replace Heating, Ventilation and Dehumidification at Quinobequin Road, Elliot Street, Islington Road and Edgewater Park wastewater pump stations.
- Replacement of the discharge piping within the wet wells of the Hamlet Street and Grayson Lane wastewater pump stations.
- Replacement of the main influent gate valves at the Quinobequin Road and Elliot Street wastewater pump stations.
- Replacement of the wet well isolation gate valves at the Elliot Street wastewater pump station.
- The replacement of the Oldham Road Pump Station.

Included with this request is Engineering Services During Construction and Engineering Services for the Design of Project 2 (attached)

Please docket this request with the Honorable City Council for their consideration.

Sincerely,

James McGonagle  
Commissioner Public Works

## Attachment A

# Scope of Work for City of Newton Pump Station Rehabilitation CIP Project 1 – Services During Construction

May 27, 2022

The Brown and Caldwell (BC) scope of work is provided below. The objective of the project is to provide the City of Newton with engineering services during construction for Pump Station Rehabilitation -Project 1.

### Project Understanding

The proposed scope is comprised of engineering services during construction tasks associated with the construction of the pump station rehabilitation work as part of Project 1.

### Pump Station Rehabilitation

The scope for this project is to provide rehabilitation and replacement work critical to improving the serviceable lifespan of the aging equipment at Newton's largest pump stations, as well as mitigating issues at multiple facilities that severely threaten the reliable operation of the pump station. The scope of this work will include the following:

#### Quinobequin Road, Elliot Street, Islington Road, Edgewater Park Pump Stations

- Demolish existing exhaust fans and install new supply and exhaust fans sized to provide air changes required by NFPA 820 or as allowed by electrical and spatial constraints.
- Install ductwork to provide supply ventilation and modify existing exhaust ductwork if required.
- Demolish the existing failed dehumidifiers and replace with units sized appropriately.
- Demolish unit heaters and replace with units sized for the improved air change rate.
- Demolish and replace existing carbon filters.
- Install gas monitoring and loss of ventilation alarming where required and wired back to SCADA.

#### Hamlet Street and Grayson Pump Stations

- Replacement of the force main and suction piping within the wet well of both pump stations.

#### Quinobequin Road and Elliot Street Pump Stations

- Replacement of the main influent gate at Quinobequin Road Pump Station which does not reliably close.
- Replacement of the main influent gate at Elliot Street Pump Station which is currently damaged and in danger of failing and sealing off flow to the pump station.
- Replacement or complete removal of wet well isolation gates within Elliot Street Pump Station which have not been operated in years and are damaged from corrosion.

### Replacement of Oldham Road Pump Station

The scope for the replacement of Oldham Road Pump Station Project is to replace the failing pump station with a facility that eliminates the need for confined space entry. The scope of this project will include the following:

- Evaluation of site and existing pump station drywell to confirm that it can be converted into a submersible pump station.
- Development of a performance based bypass specification
- Demolition of the existing pumps and piping within the pump station interior.
- Rehabilitation/demolition/replacement of existing subsurface structures and utilities.
- Installation of a new valve vault.
- Replacement of electrical equipment.
- Installation of two 300 gpm submersible pumps.

### Phase 100 Engineering Services During Construction

**Objective:** BC will provide general engineering services during construction for the duration of the construction Projects.

**Activities:** This task includes the following activities:

- Provide overall project management. Task includes monthly reports, invoicing, team and subcontractor coordination, contract communications, scheduling, and oversight.
- Provide general construction administration. BC shall provide consultation and advice during construction and provide technical engineering support during construction activities. Update and modify the Contract Documents to meet changed site and project conditions or variations in State/Federal requirements as necessary to supplement and/or provide clarity to the Contract Documents during the construction phase of the project (to address RFIs, Change Orders, and other issues requiring modified Contract Documents). This does not include revisions required for Record Drawings as required in subsequent sections of this Scope.
- Attend pre-construction conference and distribute minutes
- Attend progress meetings, BC shall assume progress meetings are held once per month during active construction. In addition to attendance at the progress meetings, BC shall facilitate the meetings, prepare a package for each meeting containing agenda, submittals log, RFI logs, and PCO/Change Order logs (Excel spreadsheets or Primavera logs) to be reviewed at each meeting, and a 3-week look

ahead schedule (to be provided by General Contractor), and other documentation that may be required for meetings that are not specified. Meeting minutes will be prepared by BC and provided to the City.

- Coordination with other municipal agencies as required during monthly progress meetings. BC assumes no effort beyond typical tasks associated with monthly progress meetings.
- Attend monthly project management meetings. BC shall assume that Project Management Meetings will be held subsequent to Construction Progress Meetings on an as-needed basis.
- Attend issue resolution meetings. BC assumes construction related issues will arise that will require formal meetings between the contractor, the City and BC to reach an agreeable resolution. BC shall assume no effort beyond typical tasks associated with monthly progress meetings.
- BC shall review all shop drawing submittals prepared by the contractors along with associated illustrations, samples, and other submittals required by the Contract Documents. BC shall assume 50 submittals requiring review. A table listing the submittals and number of reviews will be included as an attachment for the City's review. BC shall review and respond to all submittals, shop drawings, samples within fourteen (14) calendar days. BC shall coordinate and track submittals, including preparing and maintaining a submittal log, and BC will distribute the shop drawings and submittals. Copies of each submittal including subsequent revisions shall be provided to the City.
- BC shall respond to Requests for Information submitted by the contractor. BC shall assume 5 RFIs. BC shall coordinate and track RFI's, including preparing and maintaining a RFI log. Copies of each RFI including responses and subsequent revisions shall be provided to the City. Review and provide recommendations for approval of payment requisitions. BC shall issue necessary clarifications and interpretations of the Contract Documents as appropriate for the orderly completion of the work. Such clarifications and interpretations will be consistent with the intent of and reasonably inferable from the Contract Documents. BC may issue Field Orders authorizing minor variations from the requirements of the Contract Documents through coordination with City. BC shall recommend Change Orders and Work Change Directives to the City as appropriate, and shall prepare written recommendations concerning Change Orders and Work Change Directives as required in consultation with the City.
- Development of RFP has not been included in BC's scope of work.
- Review applications for payment. Based on BC's observations and on review of Applications for Payment and accompanying supporting documentation: Determine the amounts that Engineer recommends Contractor be paid. Recommend reductions in payment based on the provisions stated in the Construction Contract. Such recommendations of payment will be in writing and will constitute Engineer's representation to Authority, based on such observations and review, that, to the best of Engineer's knowledge, information and belief, Contractor's Work has progressed to the point indicated, the Work is generally in accordance with the Construction Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, and to any other qualifications stated in the recommendation), and the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work. In the case of unit price Work, Engineer's recommendations of payment will include final determinations of quantities and classifications of the Work (subject to any subsequent adjustments allowed by the Contract Documents).
- Attendance of commissioning team meetings. BC shall attend meetings with the City, contractors, and any necessary vendors or equipment representatives to coordinate system and equipment startups. BC

assumes these meetings will be scheduled in conjunction with progress meetings and will require no additional effort.

- Prepare record drawings. BC shall prepare record drawings that reflect as-built conditions based on information provided by the City, the construction contractor, and BC's own on-site inspections. BC shall reconcile and log that all construction document changes (i.e., shop drawings, RFIs, Field Change Orders, etc.) have been incorporated into the record drawings.
- Attendance of closeout meeting. BC shall attend a close out meeting with the City and construction contractor to officially close-out the project and to discuss warranty procedures.

## **Phase 200 Field Services During Construction**

**Objective:** BC will perform field visits during construction for the duration of the construction Projects.

**Activities:** This task includes the following activities:

- Perform Field Visits. BC assumes that periodic visits to site will be required to observe progress and assure compliance with the contract documents and design intent. BC shall assume a maximum of two (2) field visit per week through the duration of the construction project. However, BC assumes daily field fields will be required during a 3-month period while the rehab of Oldham Road Pump Station is underway. BC shall make visits to the site at intervals appropriate to the various stages of construction as BC deems necessary to monitor the Contractor's work for compliance with the contract documents as outlined above. The visit may coincide with the progress meeting if the progress meeting is held on site. Such visits and observations are not intended to be exhaustive or to extend to every aspect of the work in progress, or to involve detailed inspections of the work beyond the responsibilities specifically assigned in this scope of services and the Contract Documents, but rather are to be limited to spot checking, selective sampling and similar methods of general observation of the work based on BC's exercise of professional judgment as assisted by the City. Based on information obtained during such visits and such observations, and from the City, BC shall determine in general if such work is proceeding in accordance with the Contract Documents and BC shall keep the City informed of the progress of the work.
- During the site visits, BC shall notify the City if BC believes that work should be rejected because such work will not produce a completed Project that conforms generally to the Contract Documents or that it will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents.
- Provide field support during start-up. BC shall provide on-site personnel during equipment startups to provide assistance to the contractor and equipment vendors as needed and to confirm that equipment is performing as designed and expected. The work of this item shall also include the development of a process start-up plan that will be used a guide and to coordinate equipment startups. BC will schedule period site visits to coincide with startup activities. BC shall provide technical engineering support and on-site personnel for specific functional and performance testing that may be required by the Contract Documents to confirm that specified process systems are performing as designed and specified. This shall include providing assistance to the City in coordination of required testing with the contractor, City, and other agencies (as may be required). The work associated with this item shall include all the development of process start-up plans, testing forms/documentation, scheduling, observing testing, compiling results, and other activities required by the Contract Documents.
- Instrumentation check out services. BC shall perform checkout services of the instrumentation and control equipment installed by the contractor. BC shall witness and document control loop check-outs,

perform a check of the control strategy (remote manual/remote auto/final testing), and provide follow-up control systems work as needed after the system is started up and running. BC will perform checkouts in conjunction with periodic site visits and assumes no additional effort.

- Determination of substantial completion. Following notice from the Contractor that the Contractor considers the entire work ready for its intended use, BC and the City, accompanied by the Contractor, shall conduct an inspection to determine if the work is substantially complete. BC shall deliver a certificate of Substantial Completion to the City and Contractor after the resolution of any objections of the City and BC and after it is mutually agreed upon by the City and BC that the certificate of Substantial Completion shall be issued. Before BC issues a Certificate of Substantial Completion, submit to Contractor a list of observed items requiring completion or correction (Punch list). Determine whether necessary inspections and approvals by public agencies having jurisdiction over the Work have been performed and advise the City accordingly.
- Final site inspection. BC shall perform a final site inspection and walk-through of all the project areas with the City, CM, Resident and Contractor to determine final completion status. BC shall prepare a final report and submit it to the City for review and acceptance. BC shall assume one 4-hour day on site.
- Provide final notice of acceptability of the work. BC and City shall conduct a final inspection to determine if the completed work of Contractor is acceptable so that BC may recommend, in writing, final payment to Contractor. Accompanying the recommendation for final payment, BC shall indicate that the work is acceptable to the best of BC's knowledge, information and belief and based on the extent of the services performed and furnished by BC under this scope of services.

**Deliverables:** Meeting minutes, submittal reviews, RFI reviews, pay application review, record drawings, substantial and final completion recommendations

### Overall Project Assumptions

1. The City's integrator will be responsible for integrating new signals resulting from this project, this would include HVAC related alarms and sensors and additional inputs.
2. BC is not responsible for additional effort that may be required for issues related to unknown conditions that may impact the design or construction.
3. Generally, BC shall assume a maximum of two (2) field visit per week through the duration of the active construction period (1 -year). However, it is assumed daily field fields will be required during a 3-month period while the rehab of Oldham Road Pump Station is underway.

### Schedule

It assumed that the total construction contract period will be a 1 year & 6 months duration with 1 year of active construction.

## Attachment A

# Scope of Work for City of Newton Pump Station Rehabilitation CIP Project 2

May 27, 2022

The Brown and Caldwell (BC) scope of work is provided below. The objective of the project is to provide the City of Newton with engineering design services for critical rehabilitation and improvements work identified in the recent pump station condition and performance assessment.

### Project Understanding

The proposed scope is comprised of engineering design services to address issues with critical equipment/infrastructure identified during the recent pump station condition and performance assessment.

### Pump Station Rehabilitation

The scope for this project includes critical architectural repair work at Quinobequin Road Pump Station, process mechanical valve replacement work at Elliot Street Pump Station and pump replacement at Manet Road and Edgewater Park Pump Stations. The scope of this work will include the following:

#### Quinobequin Road

- Demolish existing slate roof and replace with an alternative roofing system.
- Repoint the existing brick chimney and other identified areas
- Demolish and replace the brick entrance steps
- Recaulking around openings and penetrations around the building exterior
- Repaving of the driveway
- Any other issues identified during a detailed site review conducted by BC's architectural staff.

#### Elliot Street Pump Station

- Replacement of pump isolation valves
- Replacement of pump discharge check valves

#### Manet Road Pump Station

- Replacement of both pumps
- Crack repair of the leak in the vicinity of the pump VFDS

#### Edgewater Park Pump Station

- Replacement of pumps and discharge and suction valves



## Phase 100 Project and Design Management

The purpose of this task is to provide for the initiation and overall management of Project and Design activities. An overall schedule and work plan will be implemented so that work activities are completed in a properly-integrated and timely manner. In addition, this task includes those elements necessary to properly manage, lead, and control the Project.

- A project kickoff conference call will be organized to discuss the project goals and objectives, scope of work, deliverables, schedule, critical success factors, and establish lines of communications with the project team.
- A Project Schedule showing conceptual dates for deliverables and anticipated dates for workshops, QC reviews, meetings, and submittals will be prepared and provided.
- BC will share monthly status updates with City staff and provide information on the activities, information needs, schedule, and budget for the various tasks. The monthly status update will be included with the invoice.
- Conference calls will be scheduled as needed to resolve questions, obtain direction, and communicate with City staff.
- Communicate changes in scope of project if new information is identified that changes the proposed alternatives for evaluation or scope of conceptual design.
- BC will manage the health, safety, and environmental activities of its staff to achieve compliance with applicable health and safety laws and regulations. In accordance with standard procedures, BC will prepare Field Safety Instructions that contain fundamental health and safety information that must be followed by employees involved in field activities.
- BC will maintain Project records, manage and process Project communications, and coordinate Project administrative matters.
- As part of the Project Management Plan for this project, BC will develop and implement a quality assurance/quality control (QAQC) program. Senior reviewers will participate and perform internal QAQC review of work products for project deliverables and milestones. Issues identified during the formal internal QAQC review will be addressed prior to submittal to the City of Newton. Formal QAQC periods will be included in the project schedule and this project schedule will be revisited at all internal team meetings.

## Phase 200 Evaluations

**Objective:** Confirm or adjust the critical projects identified in the project understanding section.

- Perform field visit at Quinobequin Road Pump Station with architectural design staff to confirm assumptions.
- Conduct a hazardous material assessment at Quinobequin Road to determine if hazardous construction material are present that may be disturbed by building improvements.

**Activities:** This task includes the following activities:

- Architectural design staff will perform a tour of the Quinobequin Road Pump Station.
- Hazardous materials sample collection and lab analysis

**Deliverables:**

- Architectural field review memo
- Hazardous material sampling results report

**City of Newton responsibilities:**

- Allow access to pump stations for field visits

**Phase 300 Design Documents**

**Objective:** Prepare detailed design drawings, specifications and contract documents at 60%, 90% and 100% design stages.

**Activities:** This task includes the following activities:

- Meetings with the City after delivery of the 60%, and 90% design documents.
- Review of available drawings previously furnished by the City.
- Preparation of final plans, sections, and job specific details drawings.
- Preparation of contract specifications.
- Preparation of a quantity take-off and opinion of probable construction cost provided with the delivery of the 60% design document and updated at the 90% design document.
- Obtaining Massachusetts Prevailing Wage Rates and inserting them into the specifications.

**Deliverables:** .PDFs and Four (4) hardcopy sets of review copies of the drawings, specifications and other contract documents during the 60%, 90% and 100% design.

- CADD files
- Design meeting minutes

**City of Newton responsibilities:**

- Assist with identifying key scheduling milestones
- Participate in meetings
- Review, and provide comments

**Phase 500 Bidding Services**

**Objective:** Support the City during the bidding phase by facilitating a pre-bid meeting, answering questions, issuing addenda, and reviewing bids and recommending award.

**Activities:** This task includes the following activities:

- Facilitate a pre-bid meeting.
- Formally respond to bidder questions.
- Prepare and distribute addenda as required to clarify, correct, or change the issued documents.
- Aid the City in securing bids, tabulating bid results, analyzing bid results, and making recommendations on the award of each construction contract.

**Deliverables:**

- Ten (10) sets of final construction documents (contract drawings, final specifications, and other documents) required for bidding and construction purposes
- Digital .pdf file of final construction documents
- Pre-bid meeting minutes

**Overall Project Assumptions**

1. Project documents will be developed into filed sub-bids in accordance with Massachusetts state law.
2. BC shall utilize the City's "front-end" documents, specifications and drawings will be developed in accordance with BC's standards.
3. BC assumes pdf plans are available for Manet Rd. Pump Station.
4. City of Newton will provide safe access to all required areas of the site for the purposes of project design.
5. City of Newton will review the draft deliverables for accuracy of understanding of the issues and data assumptions. City of Newton will provide one set of compiled written comments.
6. BC is not responsible for any schedule or cost impacts related to delays caused by protracted reviews, changes in scope of work, or other situations outside of our control.
7. BC is not responsible for additional effort that may be required for issues related to unknown conditions that may impact the design or construction.

## **Schedule**

Project will commence with written notice to proceed (NTP) provided by the City of Newton. 6 months is estimated for design and bidding of the project.

## Preliminary Drawing List

### Pump Station Rehabilitation

<b>Drawing No.</b>	<b>Title</b>
G-000-01	Cover Sheet
G-000-02	Location plans – Quinobequin Rd. PS, Elliot St. PS, Manet Rd. PS, Edgewater Park PS
G-000-03	Abbreviations
G-000-04	General Notes and Symbols
G-000-05	Architectural Notes
G-000-06	Structural notes
G-000-07	Process Mechanical Notes and Symbols
G-000-08	Process Mechanical Notes Continued
A-000-01	Architectural Details
A-000-02	Architectural Details II
A-100-01	Quinobequin Rd. Pump Station Plan
A-100-02	Quinobequin Rd. Pump Station Roof Plan
A-100-03	Quinobequin Rd. Pump Station Elevations
M-000-01	Process Mechanical Details
M-200-01	Elliot St. Pump Station Pump Level – Demolition and Replacement - Plan
M-200-02	Elliot St. Pump Station Pump Level – Demolition and Replacement - Sections
M-300-01	Manet Rd. Pump Station Pump Level – Demolition and Replacement – Plan and Section
M-400-02	Edgewater Park Pump Station Pump Level – Demolition and Replacement – Plan and Section