



## Public Facilities Committee Report

### City of Newton In City Council

**Wednesday, September 22, 2021**

Present: Councilors Leary (Chair), Laredo, Kelley, Kalis, Norton, Danberg, Gentile and Crossley

Public Safety & Transportation members: Councilors Downs (Chair), Malakie, Oliver, Bowman, Grossman and Lucas

City Staff Present: Commissioner of Public Works Jim McGonagle, City Engineer Lou Taverna, Director of Utilities Ted Jerdee, Chief Operating Officer Jonathan Yeo, Director of Planning, Project Management and Sustainability Stephanie Gilman, ADA Coordinator Jini Fairley, Commissioner of Inspectional Services John Lojek and Transportation Coordinator David Koses

**#315-21      Appointment of John Synnott to the Designer Selection Committee**

HER HONOR THE MAYOR appointing John Synnott, 22 Winona Street, Auburndale to the Designer Selection Committee for a term of office to expire December 31, 2021. (60 days: 10/08/21)

**Action:**      **Public Facilities Approved 7-0 (Councilor Laredo not voting)**

**Note:**      John Synnott joined the committee to discuss his appointment to the Designer Selection Committee. Mr. Synnott explained that he has been in the architectural field for more than 40 years. He also explained that he looks forward to using his experience to review RFPs as a member of the Designer Selection Committee.

Councilors asked the following questions:

Q: Are you partial to any design standards for housing?

A: Mr. Synnott explained that for most of his career he did not work in housing so he is not biased or partial to any standards. He explained that his interests are to make sure that the buildings are energy efficient. The passive house standards are a way that the City can cut down on emissions.

Councilors thanked Mr. Synnott for his willingness to serve.

Councilor Gentile motioned to approve which passed 7-0 with Councilor Laredo not voting.

**#343-21      Disposition of an easement for 39-41 Terrace Ave**  
HER HONOR THE MAYOR requesting the disposition of an easement on City property adjacent to 39-41 Terrace Ave for the purposes of allowing the owner of 39-41 Terrace Ave to allow connection to the public sewer system in accordance with Section 2-7 of the City of Newton Ordinances.

**Action:**      **Public Facilities Approved 7-0 (Councilor Laredo not voting)**

**Note:**      Lou Taverna, City Engineer presented the request for the disposition of an easement on City property adjacent to 39-41 Terrace Ave for the purposes of allowing the owner of 39-41 Terrace Ave to allow connection to the public sewer system in accordance with Section 2-7 of the City of Newton Ordinances. Mr. Taverna explained that the owners of #39-41 Terrace Avenue would like to abandon their septic tank and connect to the City’s sewer system. The existing sewer main in Terrace Avenue stops short of their property due to ledge. Mr. Taverna explained that it will be simpler for the owner to connect to the sewer at the back of the property that is on city property. This does require an easement from the City to the owner. The City Council must authorize the Mayor to grant this easement.

Councilor Crossley motioned to approve which passed 7-0 with Councilor Laredo not voting.

**Referred to Public Facilities and Finance Committees**

**#321-21      Appropriate \$138,620 for the rehabilitation of the Bullough’s Pond Dam**  
HER HONOR THE MAYOR requesting authorization to appropriate and expend one hundred thirty-eight thousand six hundred and twenty dollars (\$138,620) for the purpose of funding engineering design services for the rehabilitation of the Bullough’s Pond Dam.

**Action:**      **Public Facilities Approved 7-0 (Councilor Laredo not voting)**

**Note:**      Lou Taverna, City Engineer presented the request for the authorization to appropriate and expend \$138,620 for the purpose of funding engineering design services for the rehabilitation of the Bullough’s Pond Dam. Mr. Taverna explained that last fall the Department of Public Works came to the Council with a similar docket item and the Council requested the DPW issue a request for a qualification proposal to engineering design firms. In January, this was issued for investigating the alternatives and design solution to satisfy the Office of Dam Safety requirements while minimizing the impact to the historic site and the landscape of the area. He further explained that the City received qualification proposal from GEI Consultants, GZA GeoEnvironmental and Weston & Sampson. There was a selection committee made up of six City of Newton employees which included Senior Planner Jennifer Steel, Recreation Program Manager Carol Stapleton, Director of Utilities Ted Jerdee, Engineering Project Manager Frank Nichols, Chief Operating Officer Jonathan Yeo and City Engineer Lou Taverna. The selection committee chose GEI Consultants which provided a total price of \$138,620. Ms. Taverna noted that they have provided the attached scope of work for GEI Consultants. He further explained that this is a time and material contract. The design engineer will bill the City monthly passed on the time they spent on the project and any material they may need to perform the work. It was

also noted that the consulting engineer needs to meet with city officials, Bullough's Pond Association, Conservation Commission and any other concerned citizens.

Councilors asked the following questions:

Q: How will this proposed design be different from the last proposal in terms of green space?

A: Mr. Taverna explained that GEI Consultants did propose a unique solution that may save many trees. They were comfortable with a sheet pile wall approach and/or a new spillway approach to meet the requirements of the Office of Dam Safety. GEI Consultants did do a similar project in Washington state that was successful. The other two consultants were not comfortable with these approaches.

Q: How will the Bullough's Pond Association be involved as this project moves forward?

A: Mr. Taverna explained that there will be three meetings with the Newton Conservation Commission which are open to the public. There will also be meetings with other representatives, including the Bullough's Pond Association.

Q: Why does this approach need to be further evaluated?

A: Mr. Taverna explained that GEI needs to further evaluate the sub service conditions adjacent to the dam. They do have experience designing the sheet pile wall to sit within the existing bedrock. Mr. Taverna added that he will be returning to the committee with the consulting engineer as the projects moves forward.

Q: If this approach does not work, can the city use a different design engineering firm to ensure to save as many trees as possible in the area?

A: Mr. Taverna explained that at this time they do not know what the GEI consultants will find but there are other options that may save many of the trees. But this does need to be advanced further to know the next steps.

Councilors made the following comments:

It is important the vegetation in this area is preserved through this project. It was also noted the importance of having the Bullough's Pond Association apart of the process.

The Chair noted that the City is committed to having the Bullough's Pond Association a part of the process.

There is a concern that the other two consultants were not comfortable with this approach. A concern was also raised that the City has not worked with GEI Consultants in the past.

Regarding the previous comment. Mr. Taverna explained that other state agencies have worked with GEI consultants on numerous dam projects.

Kathleen Kouril Grieser, Vice President of the Bullough's Pond Association joined the committee for this discussion. Ms. Kouril Grieser explained that the association is grateful to the city for restarting this project. She also explained the importance for resident groups to be a part of projects like these. The association did prefer Weston & Sampson because from the start they were generous with their expertise and were interested in the historical importance of the dam. Ms. Kouril Grieser explained that it is important for GEI Consultant to involve the Bullough's Pond Association and questioned whether they can receive the meeting dates in writing.

Jim McGonagle, Commissioner of Public Works explained that once the funding is approved, they will set a schedule for future meetings. He is also committed to including the Bullough's Pond Association.

Councilors thanked DPW and the other City staff for their work on this project.

Councilor Crossley motioned to approve which passed 7-0 with Councilor Laredo not voting.

**Chair's Note:** *The committee met jointly with Public Safety & Transportation to discuss the following three items.*

### **Referred to Public Facilities Committee**

**#344-21**      **Update on the proposed Street Sweeping Pilot**  
PUBLIC FACILITIES COMMITTEE requesting an update from the Department of Public Works on the proposed Street Sweeping Pilot.

**Action:**      **Public Facilities Held 8-0**

**Note:**              This report will be made available at a later date.

### **Referred to Public Facilities and Public Safety & Transportation Committees**

**#250-21**      **Discussion regarding the status of fire hydrants throughout the City**  
COUNCILORS LAREDO, LIPOF, LEARY, GREENBERG AND OLIVER requesting a discussion with the Fire Department and the Department of Public Works regarding the status of fire hydrants throughout the city, including their current condition and plans for future maintenance, repair, and replacement as needed.

**Public Safety & Transportation Held 6-0 on 09/22/2021**

**Action:**      **Public Facilities Held 8-0**

**Note:**              This report will be made available at a later date.

**Referred to Public Facilities and Public Safety & Transportation Committees**

**#81-20**      **Discussion on transportation priorities and public works**  
PUBLIC FACILITIES COMMITTEE, PUBLIC SAFETY & TRANSPORTATION COMMITTEE AND COUNCILOR LEARY requesting a discussion with the administration and school officials on transportation priorities and public works/streets/sidewalks etc.

**Public Safety & Transportation Held 6-0 on 09/22/2021**

**Action:**      **Public Facilities Held 8-0**

**Note:**      This report will be made available at a later date.

**#316-21**      **Reappointment of Puja Vohra to the Citizens Commission on Energy**  
HER HONOR THE MAYOR reappointing Puja Vohra, 130 Day Street, Newton to the Citizens Commission on Energy for a term of office to expire June 15, 2024. (60 days: 10/08/21)

**Action:**      **Public Facilities Approved 8-0**

**Note:**      With no questions or concerns from the committee, Councilor Crossley motioned to approve which passed unanimously.

**Respectfully Submitted,**

**Alison Leary, Chair**



Ruthanne Fuller  
Mayor

City of Newton, Massachusetts  
Office of the Mayor

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TDD/TTY  
(617) 796-1089  
Email  
rfuller@newtonma.gov

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

RECEIVED  
2021 AUG 30 PM 4:54  
CITY CLERK  
NEWTON, MA. 02459

Honorable City Councilors:

I respectfully submit this docket item to this Honorable Council requesting the disposition of an easement on City property adjacent to 39-41 Terrace Ave for the purposes of allowing the owner of 39-41 Terrace Ave to connect to the public sewer system.

The owners at 39-41 Terrace Avenue wish to abandon their existing septic system and wish to connect to the city's public sewer system. The last manhole of the existing public sewer main in Terrace Ave is shallow, and it stops short of their property due to the existence of bedrock ledge. Extending the public sewer main up Terrace Ave to this property is not feasible due the requirement to remove the ledge by blasting and/or rock hammering. Also, the proposed sewer extension is too shallow, and does not have the proper slope. The owner proposes to connect to another existing city sewer main that exists behind their property. However, the sewer connection must cross city property. An easement is required.

On December 18, 1950, the City acquired the property adjacent to 39-41 Terrace Ave by a tax taking. The land is not under the control of any specific department and thus is under the control of the Mayor in accordance with M.G.L. c. 40, Section 3. For the city to grant an easement to the owner of 39-41 Terrace Ave., the easement area must be declared available for disposition and go through the re-use process under Section 2-7 of the Ordinances.

The Health Dept. will also provide support for the sewer connection through city property. The owner's wish to abandon the septic system and the sewer connection is preferable from a public health perspective.

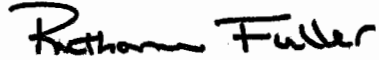
The property owner will provide the necessary easement plan and any technical plans and drawings required by DPW. The Law Department will draft and record an easement instrument along with a Mylar plan after the grant has been approved. The Council must authorize the Mayor to grant the easement.

DPW does not believe that the granting of this sewer easement will have a current or future service impact on the city's property.

Please see the attached memo from for DPW Commissioner James McGonagle and City Engineer Lou Taverna for additional information.

Thank you for your consideration of this matter.

Sincerely,

  
Mayor Ruthanne Fuller

City of Newton

DEPARTMENT OF PUBLIC WORKS  
OFFICE OF THE COMMISSIONER  
1000 Commonwealth Avenue  
Newton Centre, MA 02459-1449

Ruthanne Fuller  
Mayor

Date: July 19, 2021

To: Jonathan Yeo, Chief Operating Officer  
Maureen Lemieux, Chief of Staff

From: James McGonagle, Commissioner of Public Works  
Louis M. Taverna, P.E., City Engineer

Subject: Request for Grant of Sewer Easement  
39-41 Terrace Avenue and Adjacent City Property

The owners at 39-41 Terrace Avenue wish to abandon their existing septic system and wish to connect to the city's public sewer system. The last manhole of the existing public sewer main in Terrace Ave is shallow, and it stops short of their property due to the existence of bedrock ledge. Extending the public sewer main up Terrace Ave to this property is not feasible due the requirement to remove the ledge by blasting and/or rock hammering. Also, the proposed sewer extension is too shallow, and does not have the proper slope. The owner proposes to connect to another existing city sewer main that exists behind their property. However, the sewer connection must cross city property. An easement is required.

On December 18, 1950, the City acquired the property adjacent to 39-41 Terrace Ave by a tax taking. The land is not under the control of any specific department and thus is under the control of the Mayor in accordance with M.G.L. c. 40, Section 3. For the city to grant an easement to the owner of 39-41 Terrace Ave., the easement area must be declared available for disposition and go through the re-use process under Section 2-7 of the Ordinances.

The declaration that the land is available for the disposition as an easement must technically come from the Mayor. However, since the Mayor's involvement is only by virtue of the land's status and the purpose of the disposition is for an easement for a sewer connection, the DPW will work with the Mayor's office to initiate and work through the Section 2-7 process.

The Health Dept. will also provide support for the sewer connection through city property. The owner's wish to abandon the septic system and the sewer connection is preferable from a public health perspective.

The property owner will provide the necessary easement plan and any technical plans and drawings required by DPW. The Law Department will draft and record an easement instrument along with a Mylar plan after the grant has been approved. The Council must authorize the Mayor to grant the easement.

It is my opinion that such granting of this sewer easement does not have a current or future service impact on the city's property.

cc: A. Guliani, Law Department  
A. Lee, Law Department  
N. Khan, City Clerk  
S. Sullivan, DPW Chief of Staff



VTP  
ASSOCIATES  
INC.

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132 ADAMS STREET  
2<sup>ND</sup> FLOOR, SUITE 3  
NEWTON, MA 02458

July 23, 2021

**39-41 Terrace Avenue, Newton (217204)**

**Sewer Easement (3,039±SF)**

Beginning at a point eleven and 22/100 feet (11.22') east of the Northwesterly rear lot corner of land now or formerly of 39-41 Terrace Avenue, LLC, and running:

North60°46'26"Westerly, thirty and 11/100 feet (30.11') to a point, then running;

North63°42'20"Westerly, ninety-two and 15/100 feet (92.15') to a point, then running;

North54°04'20"Westerly, twenty-nine and 64/100 feet (29.64') to a point, then running;

North30°36'40"Easterly, fifteen and 8/100 feet (15.08') to a point, then running;

South63°42'20"Easterly, one hundred and twenty and 75/100 feet (120.75') to a point, then running;

South60°46'26"Easterly, thirty-eight and 66/100 feet (38.66') to a point, then running;

South51°06'40"Westerly, twenty-one and 55/100 feet (21.55') to the point of beginning.

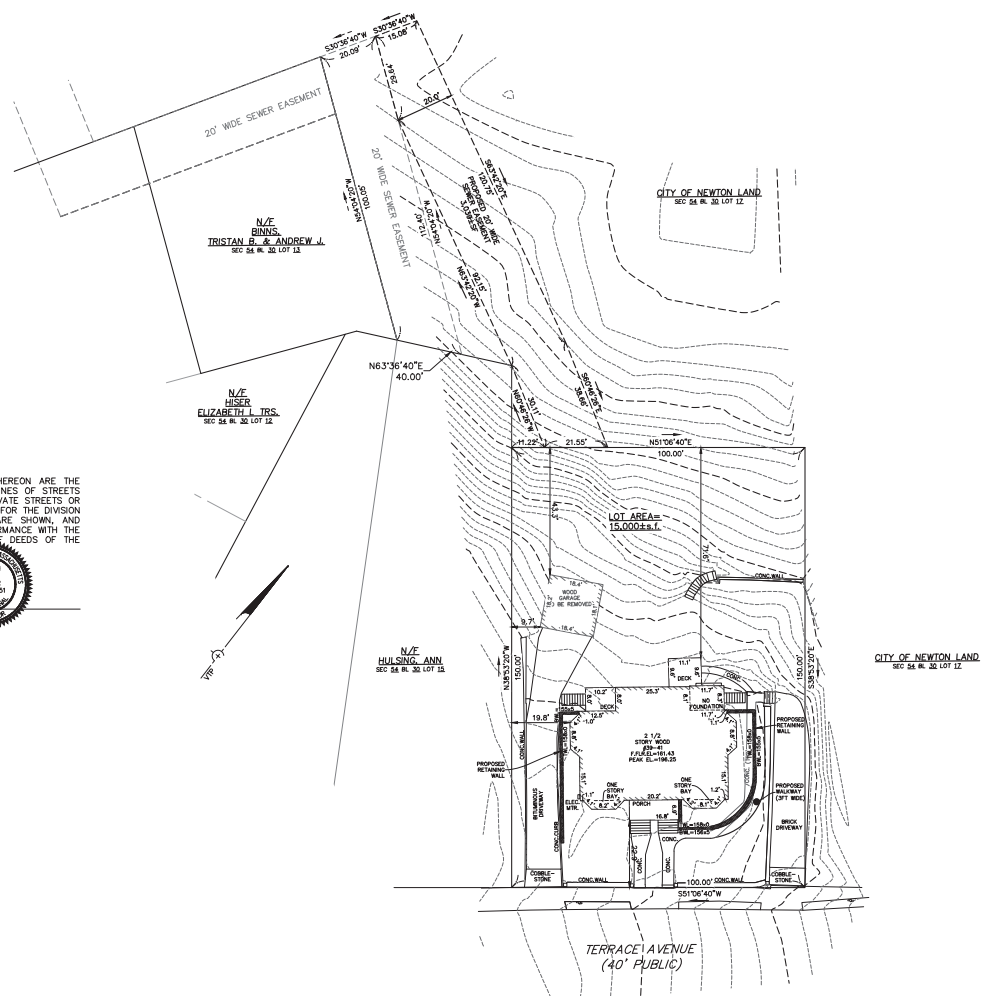
217204\_easement12.dwg (1/20/19)

MIDDLESEX REGISTRY OF DEEDS

DEED REFERENCE  
BOOK 64888 PAGE 391

OWNER OF RECORD  
OCEAN REALTY PARTNERS, LLC

RESERVED FOR REGISTRY USE



I CERTIFY THAT THE PROPERTY LINES SHOWN HEREON ARE THE LINES DIVIDING EXISTING OWNERSHIP, AND THE LINES OF STREETS OR WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND NO NEW LINES FOR THE DIVISION OF EXISTING OWNERSHIP OR FOR NEW WAYS ARE SHOWN, AND THAT THIS PLAN HAS BEEN PREPARED IN CONFORMANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS.

*Joseph R. Porter*  
JOSEPH R. PORTER PLS



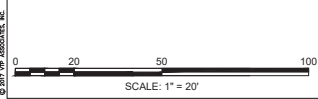
LEGEND

- BUILDING
- PROPERTY LINE W/ BEARING DISTANCE
- CONTOUR
- STOCKADE FENCE
- CHAINLINK FENCE
- PICKET FENCE
- UTILITY POLE
- LIGHT POLE
- DECIDUOUS TREE DEC. 22"
- CONIFEROUS TREE CON. 12"

EASEMENT PLAN  
NEWTON, MASSACHUSETTS  
SHOWING PROPOSED EASEMENT AT  
#59-41 TERRACE AVENUE  
SCALE: 1/4" = 20' DATE: JANUARY 31, 2019;  
REVISED: JANUARY 25, 2019  
PROJECT: 217204



LAND SURVEYORS - CIVIL ENGINEERS, 132  
ADAMS STREET, 2ND FLOOR, SUITE 3  
NEWTON, MA 02458  
(617) 332-8271  
SHEET 1 OF 1



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321-21

City of Newton, Massachusetts  
Office of the Mayor

Ruthanne Fuller  
Mayor

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August 2, 2021

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

Honorable City Councilors:

I respectfully submit this docket item to this Honorable Council requesting an appropriation of \$138,620 for engineering design services for the rehabilitation of the Bullough's Pond Dam in Newton, MA.

Bullough's Pond Dam is an approximately 170-foot long earthen embankment. The top of embankment is asphalt-paved Dexter Road. The water level in Bullough's Pond is maintained via an uncontrolled 35-foot-long spillway located toward the middle of the embankment and a gated twin 24-inch diameter low-level outlet, located on the left or west side of the embankment. The upstream and downstream slopes are grassed and heavily vegetated with woody brush and trees. The dam was last rehabilitated 95 years ago in 1926. There is a large area downstream in Newtonville that would receive significant and threatening flooding in the event of an overtopping or dam failure event. This area includes Newton North High School, over 450 homes, commercial areas, Cabot Park and the Mass Turnpike.

In 2017, the State's Office of Dam Safety (ODS) inspected the dam and found it to be in a "Poor Condition" category. The State required the City to do a Phase 2 inspection and to create a plan to bring the dam into compliance.

The Phase 2 dam inspection and report was completed in May 2020. The report recommends rehabilitation of the dam structure. The rehabilitation plan will address reported deficiencies in the follow-up inspections which include:

- Unwanted vegetation in areas of the dam;
- Scarping along the upstream slope and bare soils prone to erosion along the downstream slope;
- Areas of displaced stones from the low-level outlet downstream headwall;
- Area of scour along the downstream channel including at the low-level outlet and along the left and right banks. If erosion of the left bank continues, it could encroach on the toe of the downstream slope;
- Mortar missing from some joints of the spillway training walls;
- Additional unspecified maintenance deficiencies and potential dam safety concerns.

On January 15, 2021, the Department of Public Works issued a one-step Request for Qualifications/ Proposal (RFQ/P) for investigation of alternatives and design of a solution to satisfy ODS requirements while minimizing the impact to the historic site and the landscape of

1000 Commonwealth Avenue Newton, Massachusetts 02459

www.newtonma.gov

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CITY OF NEWTON, MASSACHUSETTS

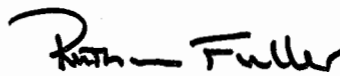
the dam area and Laundry Brook Forest below. Three highly qualified consulting engineering firms were invited to respond. The three firms were GEI Consultants, GZA Geo-Environmental, and Weston & Sampson Engineers. The selection committee recommended the selection of GEI Consultants as the consulting engineer for the design of the state-mandated rehabilitation of Bullough's Pond Dam. Attached are the selection committee's memo and GEI Consultants' proposal for engineering design services.

Through the selection process Bullough's Pond residents/stakeholders and City Councilors have been engaged and shared input with the City.

Design funds are requested at this time to do the design of the repair work. Construction funds will be requested once design is completed. All project funding is derived from the Stormwater account.

Thank you for your consideration of this matter.

Sincerely,

A handwritten signature in black ink that reads "Ruthanne Fuller". The signature is written in a cursive style with a large initial "R" and a long horizontal stroke.

Mayor Ruthanne Fuller

City of Newton



## DEPARTMENT OF PUBLIC WORKS

OFFICE OF THE COMMISSIONER

1000 Commonwealth Avenue  
Newton Centre, MA 02459-1449Ruthanne Fuller  
Mayor

Date: July 13, 2021

To: Jonathan Yeo, Chief Operating Officer  
Maureen Lemieux, Chief Financial Officer

From: James McGonagle, Commissioner

Subject: Request for Docket Item and Funding  
Bullough's Pond Dam Rehabilitation Engineering Design Services

I respectfully request an appropriation of \$138,620.00 for engineering design services for the rehabilitation of the Bullough's Pond Dam, Newton, MA. See scope and fee attached.

Bullough's Pond Dam is an approximately 170-foot long earthen embankment. The top of embankment is asphalt-paved Dexter Road. The water level in Bullough's Pond is maintained via an uncontrolled 35-foot-long spillway located toward the middle of the embankment and a gated twin 24-inch diameter low-level outlet, located on the left or west side of the embankment. The upstream and downstream slopes are grassed and heavily vegetated with woody brush and trees. The Massachusetts Office of Dam Safety (OSD) database indicates that Bullough's Pond Dam is a Small size structure with a Significant Hazard Potential.

The Phase 2 dam inspection and report has been completed. The report recommends rehabilitation of the dam structure. Numerous inspections since 2017 found the dam to be in poor condition. Reported deficiencies in the follow-up inspections include:

- Unwanted vegetation in areas of the dam;
- Scarping along the upstream slope and bare soils prone to erosion along the downstream slope;
- Areas of displaced stones from the low-level outlet downstream headwall;
- Area of scour along the downstream channel including at the low-level outlet and along the left and right banks. If erosion of the left bank continues, it could encroach on the toe of the downstream slope;
- Mortar missing from some joints of the spillway training walls;
- Additional unspecified maintenance deficiencies and potential dam safety concerns.

On January 15, 2021, the Department of Public Works issued a one-step Request for Qualifications/ Proposal (RFQ/P), and three consulting engineering firms were invited to respond. The three firms were GEI Consultants, GZA Geo-Environmental, and Weston & Sampson Engineers. The selection committee recommends the selection of GEI Consultants as the consulting engineer for the design of the state-mandated rehabilitation of Bullough's Pond Dam. See selection committee memo attached.

Design funds are requested at this time to begin and complete the design of the repair work. Construction funds will be requested once design is completed. Please docket this item with the honorable City Council for consideration.

Sincerely,

James McGonagle  
Commissioner Public Works

Attachments:

Selection Committee Memo dated June 21, 2021  
GEI Consultants Scope of Work and Fee Proposal

City of Newton

Ruthanne Fuller  
Mayor

**DEPARTMENT OF PUBLIC WORKS  
ENGINEERING DIVISION  
OFFICE OF THE CITY ENGINEER  
1000 Commonwealth Avenue  
Newton Centre, MA 02459-1449**

Date: June 21, 2021

To: James McGonagle, Commissioner DPW  
Shawna Sullivan, Chief of Staff DPW

From: Louis M. Taverna, P.E., City Engineer

Subject: Bullough's Pond Dam Rehabilitation RFQ/P  
Design Consultant Proposal Scoring and Selection

### **Recommendation**

The Selection Committee recommends the selection of GEI Consultants as the consulting engineer for the design of the state-mandated rehabilitation of Bullough's Pond Dam.

### **Procurement Process**

On January 15, 2021, the Department of Public Works issued a one-step Request for Qualifications/Proposal (RFQ/P), and three consulting engineering firms were invited to respond. The three firms were GEI Consultants, GZA Geo-Environmental, and Weston & Sampson Engineers.

The proposals were originally due on February 12, 2021. The due date was extended via an amendment to the RFQ/P until February 26, 2021. All three firms submitted their proposals on the due date.

The following criteria were used to evaluate the proposals: Relevant Experience/Past Performance (25 points), Cost (25 points), Qualifications and Key Personnel (20 points), Technical Approach (20 points), and Capacity/Organization and Management Approach (10 points).

### **Selection Committee**

The Selection Committee was appointed based on the qualifications and skills of the appointees. Most of the Selection Committee members will inherit the responsibility of managing, operating and maintaining the dam once the rehabilitation is completed. The Selection Committee consists of the following city employees:

Jennifer Steel, Chief Environmental Planner and Conservation Agent, Planning and Development Department, 7.5 years city, 30 years total.

Carol Stapleton, Program Manager, Parks, Recreation & Culture, 46 years city, 46 years total.

Ted Jerdee, Director of Utilities, Department of Public Works, 29 years city, 32 years total.

Frank Nichols, P.E., Engineering Project Manager, Department of Public Works, 11 years city, 25 years total.

Louis M. Taverna, P.E., City Engineer, Department of Public Works, 19 years city, 42 years total.

Jonathan Yeo, Chief Operating Officer, Mayor's Office, former MWRA Watershed Manager, 3 years city, 33 years total.

### Proposal Review and Ranking

The Selection Committee members individually reviewed each proposal. Virtual interviews with each of the three firms were held on May 3, 2021 via Zoom; ninety minutes were allocated for each firm to present their proposal and for questions and answers. The Selection Committee members then scored each firm individually based on the criteria. The scores were combined (averaged) and the results are shown below. The Selection Committee then met as a group to discuss the proposals and the results of the scoring.

	<u>TOTAL POINTS</u>	<u>RANK</u>	<u>BASE PRICE</u>	<u>OPTIONS</u>	<u>TOTAL PRICE</u>
GEI Consultants	464.6	1	\$118,620	\$20,000	\$138,620
Weston & Sampson Eng.	410.8	2	\$162,630	\$77,750	\$240,380
GZA Geo-Environmental	366.3	3	\$110,800	\$30,500	\$141,300

Based on a detailed review of the proposals, and after interviews were conducted, the Selection Committee unanimously selected the top ranked firm, GEI Consultants, for this design contract.

GEI has worked on thousands of projects across the country for dam engineering work, including engineering designs, emergency action plans, and dam safety compliance. GEI Consultants has been awarded numerous contracts with the Massachusetts Water Resources Authority and has substantial experience performing Phase 1 and Phase 2 regulatory dam inspections for the Massachusetts Department of Conservation and Recreation and several other Massachusetts municipalities.

The Selection Committee was impressed by GEI Consultants' skills, ability, and integrity, all necessary qualities to perform the rehabilitation design work for this contract. GEI Consultants is well qualified, and they offered a very competitive budget and schedule to accomplish the work. They proposed a project completion, barring any unforeseen permitting issues, one year ahead of the other two firms. GEI Consultants' project team includes four senior dam geotechnical engineers, one of whom is a nationally recognized expert in dam rehabilitations; an expert in hydraulics and hydrology; and an expert in environmental permitting. The Selection



Committee was particularly impressed by GEI Consultants approval of presenting several possible innovative dam rehabilitation techniques, including the possibility of a sheet pile wall or I-wall, keyed into the bedrock, as a means to minimize site disturbance and save as many of the existing trees on the upstream and downstream slopes as possible. (Note: The other two firms did not include the exploration of the option of a sheet pile wall deeming it as infeasible for this site). GEI Consultants will meet with and discuss creative rehabilitation options with the Office of Dam Safety, and they have had success in the past gaining approval for innovative dam rehabilitation techniques that emphasis environmental conservation. Very importantly, GEI Consultants is prepared to meet with City staff, City Council, the Conservation Commission, Bullough's Pond Association, and other concerned residents, and organizations for interactive discussions about options and concerns. GEI Consultants recognize that community engagement is a critical aspect of design development. Reference checks from MWRA were favorable.

Weston & Sampson Engineers also scored highly across the spectrum of evaluation criteria, and the Selection Committee ranked them very highly in terms of capability. Their cost proposal was the highest of the three firms by a significant margin. Weston & Sampson Engineers proposed a variety of possible rehabilitation techniques, including core wall enhancement. They noted that the sheet pile wall technique used for the Arlington Reservoir Dam rehabilitation may not work for the Bullough's Pond Dam and that if applied in Newton, would result in large-scale tree loss.

GZA scored third. They had a competitive cost proposal but an approach that focused on over-topping and slope stability and they presented no new innovative dam rehabilitation techniques, other than those presented in their Phase 2 dam inspection report. GZA eliminated the sheet pile wall option as infeasible for the Bullough's Pond Dam site.

### **Conclusion**

The Selection Committee unanimously recommends the selection of GEI Consultants as the consulting engineer for the design of the rehabilitation of Bullough's Pond Dam.

cc: Jonathan Yeo, Chief Operating Officer  
Ted Jerdee, Director of Utilities  
Frank Nichols, P.E., Engineering Project Manager  
Jennifer Steel, Chief Environmental Planner  
Carol Stapleton, Program Manager, PRC

February 25, 2021



Louis M. Taverna, P.E.  
 City Engineer  
 City of Newton  
 1000 Commonwealth Avenue  
 Newton Centre, MA 02459-1449

Consulting  
 Engineers and  
 Scientists

Dear Mr. Taverna:

**Subject: Engineering Design Services for Bullough's Pond Dam Rehabilitation Preliminary and Final Design**

GEI Consultants, Inc. (GEI) is pleased to submit our proposal for Engineering Design Services for the Bullough's Pond Dam Rehabilitation project. We are uniquely experienced and qualified to undertake these services due to our past and current work on thousands of dam and flood control projects in Massachusetts and nationwide. Our relevant experience is demonstrated by our long-time clients such as Massachusetts Department of Conservation and Recreation (DCR) Office of Dam Safety (ODS), Massachusetts Water Resources Authority, the U.S. Army Corps of Engineers (USACE), and numerous other local, state, and federal agencies.

As outlined in our Technical Approach, we believe that improvements can be made to the Phase II stability evaluation that may reduce the extent of the recommended improvements. We have recently helped the ODS develop updates to the state's requirements for seismic evaluations of dams, and we have worked with ODS providing spillway design flood evaluations on many of their own dams.

We understand that the City is looking for alternatives that include the least intrusive, most natural-looking ways of addressing the dam deficiency. Our team members have recent experience with a similar design challenge and used steel-sheet-pile floodwalls to modify a levee in the City of Kent, Washington, that allowed the woody vegetation to remain on the bank of the river.

We have reviewed and understand the scope of work outlined in the Request for Qualifications Statements/Proposals (RFQ/P) issued by the City of Newton. We have prepared our response in accordance with the requirements outlined therein. With this submittal, we make the following certifications and declarations:

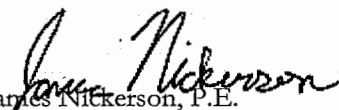
- 4.1.1 GEI will meet the deliverables schedule due dates as proposed herein.
- 4.1.2 All cost information, salaries, rates, policies, etc. are current, complete, and accurate.
- 4.1.3 All individuals listed in this submittal are committed to perform on the project and are available to start on the date services are required in the contract.
- 4.1.4 If selected, GEI will sign the City's Professional Engineering Services Agreement. We request a minor text edit included in the attached documents.
- 4.1.5 GEI will meet the insurance requirements for the project, as described in the "City's Professional Engineering Services Agreement."
- 4.1.6 Neither GEI nor any members of the proposed team are currently debarred from doing business with any governmental entity. GEI has no pending or current litigation that might adversely affect performance on this project.
- 4.1.7 GEI will comply with all local, state, and federal requirements concerning the rights of an access for disabled persons.
- 4.1.8 In the last seven years, no petition has been filed by or against GEI, with or without consent, under any federal or state law concerning bankruptcy, reorganization, insolvency or relief from creditors, including, without limitation, a petition for protection of a Bankruptcy Court.

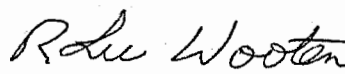
- 4.1.9 GEI acknowledges and agrees to treat this RFQ/P and all documents related to it in accordance with the City's directions in "Section 1.2 – Notice," of the RFQ/P.
- 4.1.10 GEI has supplied the information necessary to meet the minimum Threshold Requirements found in Section 4.2 of the RFQ/P, including evidence of financial stability.
- 4.1.11 If selected for award, the "City's Professional Engineering Services Agreement" will be executed by GEI Consultants, Inc. at address provided on this letterhead.
- 4.1.12 We have received the questions and City's responses on 2/3/2021 and Addendum 1 dated 2/11/2021 and have considered this information in preparation of this proposal.

GEI understands that are no minimum required percentages of participation by Minority Business Enterprises and by Women Business Enterprises have been established for this project. While GEI strives to use these businesses as appropriate to achieve our clients' goals, we do not anticipate a need for subcontracted services, having the in-house expertise required to complete this project efficiently and cost-effectively. We look forward to the opportunity to provide engineering services to provide evaluation and alternative designs that would bring the dam into compliance with dam safety regulations.

If you have any questions, please feel free to contact me at 339-221-1527, jnickerson@geiconsultants.com, or Lee Wooten at 781-424-9923, lwooten@geiconsultants.com.

**GEI Consultants, Inc.**

  
 James Nickerson, P.E.  
 Lee Wooten, P.E.  
 Senior Project Manager/Vice President

  
 R.  
 Vice President

**1 Cost**

GEI will perform the scope of work presented in this proposal on a time and materials basis. Billings will be based on actual accrued time and material basis in accordance with our Schedule of Fees.

Our not-to-exceed budget to complete the work is \$118,620. Our estimated budget by task for the scope of services described in this proposal is included in the table below. As requested, we have included a \$20,000 contingency for additional permit applications. The costs presented below include compensation for all direct labor costs, associated indirect costs, profit, and allowable other direct costs for the deliverable. We will not exceed the budget without prior written authorization from the City of Newton.

Task No.	Description	Not-to-Exceed Cost
1	Project Kickoff Meeting	\$1,960
2	Additional Field Investigations and Laboratory Testing	\$8,490
3	Additional Engineering Analyses, Design Computations, and Alternative Recommendations Evaluation Report and Design Report	\$32,845
4	Preliminary and Final Design and Development of Plans and Specifications	\$35,370
5	Operations and Maintenance (O&M) Plan	\$2,985
6	Environmental Permitting Assistance	\$17,805
7	Construction Bid Phase Assistance	\$4,295
8	Project Management	\$8,750
9	Additional Follow-Up Inspections	\$6,120
	<b>Total</b>	\$118,620
	City requested contingency budget for additional permit applications	\$20,000
	<b>Total with Requested Contingency</b>	\$138,620

## 4 Technical Approach

### PROJECT UNDERSTANDING

We understand that Bullough's Pond Dam is a 225-foot-long, 14.5-foot-high earthen embankment that was originally constructed in 1664. The dam presently at the site is believed to have been constructed in 1926. The upstream and downstream slopes are inclined at 2H:1V and are covered with grass and heavily vegetated with woody brush and trees. According to historic drawings and investigations in 2019, a concrete core wall is present along the length of the dam embankment. The top of the dam is asphalt-paved Dexter Road with a bridge over the spillway.

The water level in Bullough's Pond is maintained by an uncontrolled 35-foot-long spillway located upstream of the Dexter Road Bridge. An additional downstream weir is located below the bridge. Low flows can be passed via two gated 24-inch-diameter cast iron low-level outlet pipes located toward the left (west) end of the embankment. The gates valves are in a vault in the upstream slope and are exercised by City personnel on a yearly basis. There is a roadway drainpipe outlet on the downstream embankment and another drain outlet along the right abutment downstream of the spillway.

Based on prior inspections by others, the dam was judged to be in poor condition. In response to the poor condition rating, the Massachusetts Department of Conservation and Recreation, Office of Dam Safety (DCR-ODS) issued a Certificate of Non-Compliance and Dam Safety Order dated July 16, 2018. The DCR Order required the City to complete follow-up inspections, a Phase II evaluation, and rehabilitate the dam to bring it into compliance with current dam safety regulations. The Phase II evaluation was performed in 2020 and confirmed the condition of the dam and identified the following specific deficiencies:

- Inadequate minimum freeboard during the SDF and the potential for embankment overtopping.
- Inadequate calculated factors of safety for embankment seepage stability and slope stability.
- Unwanted vegetation in areas of the dam including large trees along the downstream slope.
- Scarping along the upstream slope and bare soils prone to erosion along the downstream slope.
- Deterioration/potentially unstable headwall at the downstream end of the low-level outlet.
- Areas of scour along the downstream channel including at the low-level outlet headwall and along the left and right banks.
- Mortar missing from some of the spillway training wall joints.

The Phase II evaluation provided several alternatives to address the noted deficiencies. Each include alternatives for overtopping protection and improving embankment stability. The preferred alternative included:

- Removal of trees and vegetation on the upstream and downstream slopes. Removal of all roots/root balls associated with trees and vegetation and backfilling resulting voids with compacted sand/gravel.
- Regrading and armoring of the upstream slope with riprap to increase slope stability and reduce erosion (scarping) along the normal water elevation.
- Flattening and armoring of the downstream slope to increase slope stability and provide erosion protection during an overtopping event.

Because of the historic and environmental importance of the dam and the adjacent forest, the City is seeking alternatives that will satisfy ODS dam safety requirements, while protecting the historic site and landscape of the Bullough's Pond Dam and adjacent Laundry Brook Forest. The City's goal is to seek alternative repair measures that include the least intrusive, most natural-looking ways of addressing the dam deficiency.

### PROJECT APPROACH

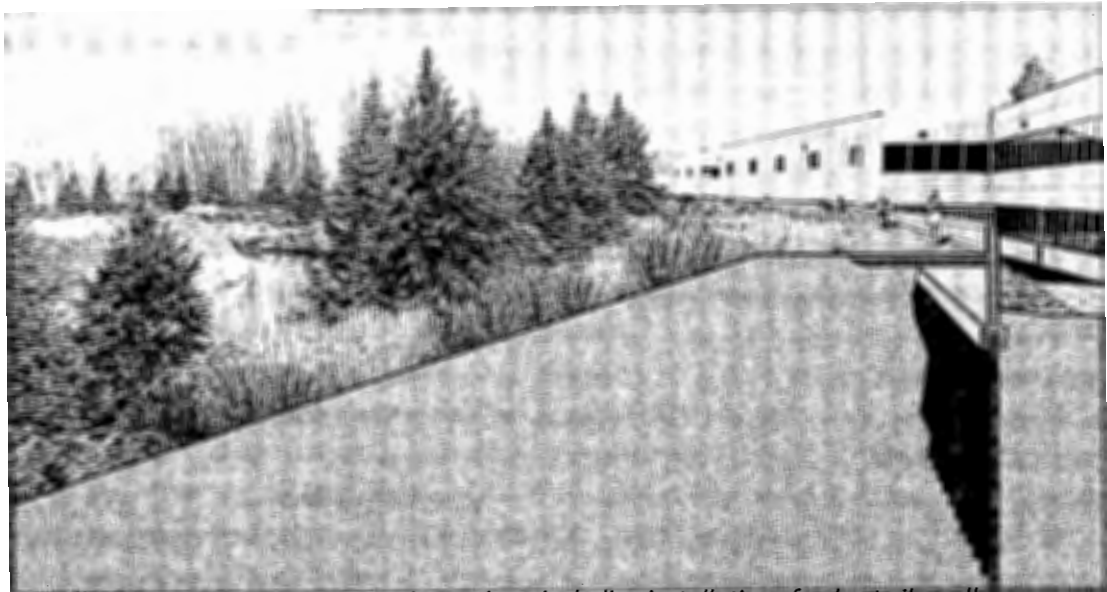
Our approach to this project will be to focus our alternatives evaluation on the three deficiencies that will have the highest costs and environmental disruption to remediate:

- Overtopping during the SDF
- Trees on the dam
- Slope Stability Safety Factors

We believe that the alternatives that GZA presented in their Phase II evaluation are reasonable, conservative, and will accomplish the goals of remediating these three primary deficiencies. However, we believe there are other alternatives that could be evaluated that may address the City's concerns with historical and environmental impacts. In our alternatives evaluation we will consider these following options:

- **Overtopping Prevention** – We will evaluate the following options to allow the dam to pass the SDF without overtopping.
  - Modifying operational criteria to drawdown the pond in advance of pending storms.
  - Dredging the pond to create more reservoir storage.
  - Modifying the spillway to pass additional flows. The Phase II report included an alternative to modify the spillway that required reconstructing a longer span bridge. We will evaluate two options to modify the spillway crest without modifying the bridge. These include:
    - Constructing a new, longer spillway with a semi-circular or three-sided footprint extending into the pond, allowing the crest to pass more flow at lower flood levels.
    - Adding flashboards that can trip at higher flows allowing more flow at peak pond levels.
- **Overtopping Protection** – We will evaluate options to protect the dam if it is overtopped during the SDF. We will evaluate these options:
  - Leaving the dam in its current condition. The shallow depth and short duration of overtopping, the protection provided by the paved crest, and the width of the dam make it highly unlikely that the dam will wash out during the SDF. We will review the hydrology and hydraulics (H&H) conditions, the mitigating factors, and engage ODS in a discussion about the viability of their support of this option.
  - Installing a sheet pile wall between the concrete core wall at the upstream slope, similar to a recent project our key personnel designed for the City of Kent, Washington (see image below). This option will protect a part of the dam crest even if the downstream slope is washed out.
    - This will allow the sheet pile and core wall to serve as the dam and the downstream slope could be considered unnecessary.
    - With this option, the existing trees on the dam could safely remain in place.

- To accomplish this, we would need to demonstrate and get concurrence from ODS that the steel sheet pile floodwall will provide suitable protection against breaching of the dam and that loss of part of the downstream slope is acceptable.
  - Regrading the downstream slope and covering it with grass-covered articulated-concrete-block erosion protection (similar to the alternative recommended in the Phase II report). We designed the first use of this type of dam remediation in the United States. The obvious drawback to this option is the need to remove the existing trees.



*GEI will evaluate overtopping protection options, including installation of a sheet pile wall, similar to a recent project (shown above) designed by our key project personnel.*

- **Slope Stability Measures** – We will evaluate the slope stability of the dam to see if remediation is needed, and, if so, what type of remediation is required. As described below, we expect that the slope stability is more favorable than described in the Phase II report and that it is highly unlikely that any instability would result in a breach of the dam.
  - We believe there is a potential for refinement of the Phase II analyses that would likely demonstrate improved safety factors of the current dam geometry.
    - **Steady-State Seepage at Flood Pool:** We believe the previous evaluation is overly conservative and could be improved in the following ways:
      - The selected drained friction angles (31 degrees for the embankment fill and 29 degrees for the fine sand) are conservative. We believe higher shear strengths could be justified and would improve safety factors.
      - The identified critical failure surface includes most of the downstream slope but leaves most of the relatively wide asphalt-covered dam crest intact. If the reported critical surface was to fail, the remaining portion of the dam would be enough to retain the reservoir. Failure surfaces that include the downstream slope and most of the embankment crest will demonstrate higher safety factors, and these would be more appropriate to demonstrate

the dam's stability during the flood condition if the overtopping issue is eliminated.

- The analysis assumes a steady-state seepage condition caused by the flood event. However, the H&H study includes a hydrograph demonstrating that the flood peak has a very short duration. A transient seepage evaluation would likely demonstrate that pore water pressures inside the embankment during the flood are lower than what was used in the stability evaluation, which would show improved safety factors.
- Earthquake Loading: In our opinion, the current earthquake assessment in the Phase II report is overly conservative. The analysis was performed with a 0.218g horizontal acceleration in their pseudo-static analysis, which, in our experience, is significantly higher than required for this dam. We have recently worked with the ODS to develop an update to the State Dam Safety Regulations, providing clearer guidance on the appropriate seismic loading for embankment dams in Massachusetts. We are confident our seismic evaluation will result in higher safety factors for the earthquake loading case.

## SCOPE OF WORK

We propose to perform the scope of work described below as requested in the RFQ/P.

### TASK 1 – PROJECT KICKOFF MEETING

We will meet with City personnel at a kick-off meeting. The purpose of the kickoff meeting will be to:

- Introduce key project management and subject matter technical expert personnel and establish connections between GEI and the City personnel.
- Review the scope in detail and confirm or refine the overall project schedule and deliverable expectations.
- Review the history of the project and key challenges and confirm path forward to resolution.
- Review list of available information. Identify any data gaps and develop a plan to collect the information.
- Review site access, locations of laydown areas, and other logistical site constraints.
- Review health and safety requirements and site-specific considerations.

We will make a site visit prior to the kick-off meeting to observe the current conditions and discuss the various deficiencies, associated rehabilitation design concepts, and site access and staging areas for construction. We will also incorporate this site visit as one of the additional inspections required in Task 9.

### TASK 2 – ADDITIONAL FIELD INVESTIGATIONS AND LABORATORY TESTING

We will conduct site visits and field investigations to support the evaluation and design efforts. This will include:

**Developing Health and Safety Plan**: Prior to any on-site activities, a site-specific Health and Safety Plan (HASP) will be developed that will incorporate specific activities for the planned work. The HASP will



include procedures per the Commonwealth of Massachusetts COVID-19 guidelines and procedures for all construction sites and workers at public work facilities.

**Performing Test Pits:** GEI will perform one (1) half-day site visit to complete three (3) hand-excavated test pits to verify the thickness of topsoil in areas that may be stripped during construction and to obtain three (3) samples to support the downstream slope filter design. Before excavating, GEI will submit a Chapter 253, Part A permit to DCR for approval, and perform utility clearances with Dig Safe and pertinent local authorities.

The test pits will be excavated using hand tools and backfilled with onsite material. No surface restorations or plantings at the test pit locations are planned. We will perform up to three (3) geotechnical grain size analyses [ASTM D6913] on the samples collected below the topsoil.

**Performing Sediment Probes:** We will perform sediment probes to evaluate the extent of the soft sediment thickness along the upstream slope and toe to support the design of upstream slope improvements and evaluation of dewatering options. GEI will conduct a depth of refusal (DOR) survey in Bullough's Pond, which will consist of pushing metal rods through impounded soft sediment to the top of the stiffer underlying material. The probe penetration will be measured to document the thickness of the sediment. The DOR survey will be performed from a boat provided by the City of Newton and field staff will use a GPS to log the location of each of the DOR probes performed. GPS location data will be used to update the existing conditions of the upstream slope of the dam. The probing will be performed in one day of field work. The probes will be limited to the area within 30 feet of the upstream toe of the dam.

**Collecting Sediment Samples:** We proposed to collect three (3) sediment samples from locations upstream of the dam during the sediment probing program. The samples will provide information to assess the impacts of sediment management on the potential repair alternatives.

The samples will be composited across the thickness of the soft sediments encountered at each sample location. Based on the anticipated total water depth, we assume that we will collect the samples manually using hand tools from the boat provided by the City of Newton during our probing effort.

The samples will be delivered to a state-licensed laboratory to be analyzed for the following parameters required in 314 CMR 9.00 and on Massachusetts Department of Environmental Protection (DEP) form BRP WW 07, 08 (Dredging):

- Volatile organic compounds (VOCs)
- Polycyclic aromatic hydrocarbons (PAHs)
- Extractable petroleum hydrocarbons (EPH)
- Polychlorinated biphenyls (PCBs) by NOAA summation on congeners
- Total metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc)
- Percent moisture
- Total organic carbon
- Grain size analysis
- Volatile solids
- Toxicity Characteristic Leaching Procedure (TCLP), if necessary

**Observing Low-Level Outlet Inspection:** We will make one (1) site visit to observe the existing condition and configuration of the existing Low-Level Outlet (LLO) gate valves while the City of Newtown Department of Public Works performs a CCTV inspection of the LLO discharge pipes downstream of the gates. We assume the City will pump excess water from the existing gate chamber so we can make observations by video or camera inspection. No GEI staff will enter the confined space.

### TASK 3 – ADDITIONAL ENGINEERING ANALYSES, DESIGN COMPUTATIONS, AND ALTERNATIVE RECOMMENDATIONS EVALUATION REPORT AND DESIGN REPORT

We will perform the following engineering analyses to support the alternative evaluation and final design:

**Alternative Evaluation:** We will evaluate the alternatives outlined in our Project Approach, including:

- Modifying operational criteria to drawdown the pond in advance of pending storms.
- Dredging the pond to create more reservoir storage.
- Constructing a new, longer spillway extending into the pond to pass more flow at lower flood levels.
- Adding flashboards that can trip at higher flows allowing more flow at peak pond levels.
- Installing a sheet pile wall between the concrete core wall at the upstream slope to address stability and trees.
- Installing articulated-concrete-block overtopping protection.
- Leaving the dam in its current condition.
- Updating Earthquake and Flood Pool slope stability analyses of the existing dam.

Each alternative will be evaluated for its technical feasibility by engineering calculation and will include a description, approximate dimensions or area of improvement, and an opinion of probable cost.

We recognize that the City has already invested in developing a hydrologic and hydraulic model of the existing dam. We request that the City provide the previously developed model so that we can review, check, and modify it as necessary to evaluate our alternatives. However, we understand that the City may not be able to provide this model, and, if so, we will develop our own model for option evaluation.

We will prepare an Alternative Evaluation report to summarize our assessment to help the City select a technically feasible, and historically, aesthetically, and financially appropriate repair alternative.

**Design Report:** We will prepare final engineering calculations and to support the design of the alternative selected. We assume that the final engineering calculations will include the items listed below. Our scope and budget do not include the design of a new spillway or bridge, if an option is selected that involve those features.

- Updating our slope stability and seepage model for the final design geometry.
- Design of graded downstream filter/drain.
- Design of an overtopping protection alternative (e.g., sheet pile wall or articulated concrete blocks), if selected.
- Designing civil improvements to scarps and footpaths on the dam.

We will prepare a Preliminary and Final Design Report to present the project overview, design criteria, assumptions, updated H&H, updated stability evaluation, updated alternatives, and basis for the final design. Our design calculations will be included as attachments.

#### TASK 4 – PRELIMINARY AND FINAL DESIGN AND DEVELOPMENT OF PLANS AND SPECIFICATIONS

We will prepare Preliminary and Final Designs for repairs to the dam to address the following deficiencies:

- Embankment improvements, including slope regrading and armoring (if selected),
- Seepage filter materials and configuration,
- LLO improvements, including gate replacement or rehabilitation and pipe lining, and
- Repairs to the concrete and stone masonry components of the dam.

We will prepare preliminary design plans, technical specifications, and an updated opinion of probable construction costs for the proposed dam rehabilitation for review by the City. The City will prepare up-front boilerplate documents (e.g., bid instructions, agreement, insurance, and bonding requirements) and the consultant will provide technical specification sections.

We expect that our Preliminary and Final Design packages will include:

- **Drawings:** We will provide up to 9 design drawings. Our assumed list of drawings is:
  - G-1: Cover Sheet/Drawing List
  - G-2: General Notes
  - G-3: Erosion Control Plan
  - C-1: Existing Conditions Plan
  - C-2: Plan of Improvements/Grading Plan
  - C-3: Overtopping Protection Details
  - C-4: Earthwork/Filter Details
  - S-1: Concrete and Masonry Repair Plan/Details
  - S-2: Low-Level Outlet Repairs
- **Technical Specifications:** We will prepare the following technical specifications
  - Summary of Work
  - Measurement and Payment
  - Project Management and Coordination
  - Submittal Procedures
  - Construction Facilities and Temporary Controls
  - Erosion and Sediment Control
  - Contract Closeout
  - Site Clearing
  - Earthwork
  - Riprap and Riprap Bedding
  - Drainage Structures
  - Concrete Rehabilitation
  - Masonry Rehabilitation
  - Site Restoration and Seeding
- **Bidder Qualifications:** We will prepare bidder qualification requirements that the City can include in their up-front bid instructions. The bidder qualification requirements will be to solicit bids from

Contractors that are experienced, qualified, and have successfully completed similar dam rehabilitation projects.

- **Engineers Opinion of Probable Construction Costs:** We will prepare an engineer's opinion of estimates for probable construction costs. The cost estimates will be based on quantity take-offs and on unit prices based on recent experience with other dam rehabilitation projects, published MassDOT Bid tabulations, and general cost estimating guidance.
- **Estimate for On-site Resident Engineer Representation:** We will prepare a preliminary construction schedule and outline the requirements for on-site resident engineer representation, including an estimate of costs.

**Design Submittals:** As requested by the City, our Preliminary Design will be a 25% submittal that will be intended to define the scope and extent of the repairs. We assume the City will provide consolidated review comments. Upon receipt of comments, we will begin our Final Design. Final Design documents will be provided to the City for final review. We will incorporate the City's comments into a final 100% Design submittal that the City can include in their preparation of the bid package. The final design will include two (2) hard copies of the final contract plans and technical specifications, which will be stamped and signed by a Professional Engineer licensed in the Commonwealth of Massachusetts. All other submittals will be in PDF format.

#### TASK 5 – OPERATIONS AND MAINTENANCE (O&M) PLAN

We will prepare an Operations and Maintenance plan for future dam operations that will meet the requirements of the Chapter 253 Dam Safety Permit. The O&M plan will include the following:

- Routine Maintenance Measures including measures to control and unwanted vegetation on the dam.
- Recommended observations for seepage, erosion, and other indicators of stability problems with the embankments of the dam.
- Recommended instrumentation (if applicable).
- LLO operation and maintenance.

The draft O&M plan will be submitted to the City for review. We have assumed we will receive a consolidated set of review comments from the City and will prepare a final O&M plan. The plan will be submitted in PDF format (no hardcopy).

#### TASK 6 – ENVIRONMENTAL PERMITTING ASSISTANCE

We will prepare documentation for the filing of applications for the above-referenced permits and approvals, including all application forms, plans, project descriptions, and abutter notifications. We will prepare and have published all public notices required under these permit programs. Drafts of all applications will be submitted to the City for review and approval prior to submission to the regulatory agencies. We anticipate that the following permits and approvals will be required for the proposed rehabilitation of the Bullough's Pond Dam.

- Order of Conditions from the Newton Conservation Commission, pursuant to the provisions of the Massachusetts Wetlands Protection Act (M.G.L.c. 131, s. 40) and City of Newton Floodplain/Watershed Protection District ordinance.

- Water Quality Certification from the DEP, pursuant to the provisions of Section 401 of the Federal Clean Water Act of 1972.
- Dam Safety Repair Permit from the Massachusetts Department of Conservation and Recreation, ODS, pursuant to the provisions of M.G.L.c.253.
- Department of the Army General Permit for Massachusetts (GP1) from the USACE, pursuant to the provisions of Section 404 of the Federal Clean Water Act of 1972. Concurrent with the filing of documentation with the USACE, GEI will submit a complete Historic Property Notification Form with the Massachusetts Historical Commission. This filing will serve the dual role of achieving compliance with both State and Federal historic preservation statutes.
- A Project Notification Form will be filed with the Massachusetts Historic Commission in accordance with 950 CMR 71.00.

GEI will attend one (1) meeting in Newton and two (2) virtual public hearing meetings during the review of the project by the Newton Conservation Commission in support of the filing and will coordinate the agency reviews of all filed applications, including preparing and submitting responses to agency comments/questions.

GEI will prepare a summary informational package with preliminary designs to the City for distribution. The City will distribute the package to the City council, the Conservation Commission, the Parks, Recreation and Culture Commission, Abutters, and the Bullough's Pond Association (BPA) to solicit public feedback. GEI will participate in up to three (3) remote public informational meetings to present the project.

Although the Scope of Services provided as Attachment A to the RFQ/P identifies several additional permits/approvals as possibly being required, it is not clear at this time that they will, in fact, be necessary. Accordingly, GEI will complete the following subtasks to ascertain applicability. If found to be applicable to the project, as designed, appropriate applications and documentation will be prepared and filed as an additional service using the City's established contingency budget.

- Waterways License from the DEP pursuant to the provisions of M.G.L.c. 91 – GEI will consult with the DEP to determine if a Waterways License will be required for the proposed reconstruction of the dam. Bullough's Pond is not a Great Pond, and it does not appear that reconstruction work will occur within a non-tidal river or stream on which public funds have been expended for stream clearance, channel improvement, or any form of flood control or prevention work; therefore DEP's jurisdiction pursuant to the Waterways Act is questionable. If such jurisdiction is established, a Waterways License application will be required.
- Massachusetts Environmental Policy Act (MEPA) project review pursuant to the provisions of M.G.L.c. 30, s. 61-62 – GEI will assess the applicability of MEPA as the design of the dam rehabilitation is advanced. Specific project impacts will be assessed against the MEPA review thresholds specified at 301 CMR 11.03(1, 2, 3, and 10) to determine if a filing will be required. If required, GEI will prepare the appropriate forms (i.e., Environmental Notification Form) and documentation to secure a Final Certificate from the Secretary of Energy and Environmental Affairs.

#### TASK 7 – CONSTRUCTION BID PHASE ASSISTANCE

We will assist the City in the bidding process by:

1. Attending one (1) pre-bid meeting at the site.
2. Considering bid-phase questions and issuing up to two (2) Clarifications or Addenda.
3. Tabulating the bids.
4. Checking references of the selected bidder.
5. Issuing an opinion memorandum regarding the responsiveness of the bidders and a recommendation regarding the acceptance of the apparent low bidder.

#### TASK 8 – PROJECT MANAGEMENT

We will perform the project management tasks described below throughout the work to coordinate with the City staff and report on progress to City Management. For budgeting purposes, we assume that we will perform these activities for 10 months.

1. Project Management – We will review the project schedule, progress, and budget throughout the project.
2. Project Meetings – We will attend up to three (3) meetings with the City to discuss progress and design plans. We expect these will occur:
  - a. At the conclusion of the field investigations (Task 2)
  - b. Completion of the alternative evaluations (Task 3)
  - c. Following submittal of the preliminary (25%) design (Task 4)

The RFQ/P requested the consultant meet with members of the Department of Public Works with the Bullough's Pond Association, the Department of Parks and Recreation (including the Tree Warden), the City Council, the Conservation Commission Agent, and the Conservation Commission. We assume the City will invite these stakeholders to one of the above meetings as they see fit.

3. Budget Management & Reporting – We will provide the City with regular updates on the project. This will include a monthly progress reports, which will be prepared and submitted with our invoices. The report will include work completed and an update on the project budget.

#### TASK 9 – ADDITIONAL FOLLOW-UP INSPECTIONS

It is understood that the July 2018 DCR Certificate of Non-Compliance and Dam Safety Order requires follow-up inspections every 6 months until the repairs are complete. The most recent follow-up inspection was performed in April 2020. We will perform up to four (4) additional follow-up inspections at 6-month intervals during design and construction. A registered professional engineer experienced in dam engineering will perform the follow-up inspections.

#### ASSUMPTIONS

Our proposal is based on the following key assumptions:

1. The City will provide all topographic survey and city right of way property boundary survey, in AutoCAD format.
2. A copy of the previous HEC-HMS model and HY-8 hydraulic analysis developed for the dam will be provided to GEI along with associated study reports.
3. The City will provide the location of above and below-ground utilities, City-owned property boundaries (and easements) at and adjacent to the site to support the final design effort in AutoCAD format.

4. The City will delineate and flag wetland and include the flagged locations on the topographic survey in AutoCAD format.
5. The City will perform a CCTV inspection of low-level outlet drainpipes, vault structure, and downstream discharge area.
6. The City will pump excess water from the existing gate chamber so observations can be made by video or camera inspection. No GEI staff will enter the confined space.
7. The City will operate the existing gate valves to lower the water level in the pond.
8. The City will provide a flat bottom boat (by Newton Fire Department) for additional probes in the pond (if necessary).
9. The City will provide bid document up front provisions, including prevailing wage rates.
10. The inflow design flows, reservoir stage area curve, and outflow hydraulics of the current condition as developed in the Phase II hydrological and hydrologic assessment will be used as the basis of our evaluations.
11. Permitting Assumptions:
  - a. No Department of the Army Individual Permit will be required for the proposed project.
  - b. No Environmental Impact Report (Draft or Final Environmental Impact Report) will be required for the project pursuant to the provisions of MEPA.
  - c. No Chapter 91 Waterways license or permit is required for the proposed project.
  - d. All wetland boundary delineation flagging will be conducted and mapped by the City and all boundary delineation documentation required by the USACE will be provided to GEI by the City. We assume no wetland replication will be required in the final design documents.
  - e. Field surveys for nature resources or habitat will not be required or will be performed by the City and provided to GEI.
  - f. Not traffic impact studies will be required for permitting.
  - g. All application and advertising fees associated with permitting will be paid directly by the City. These fees are not included our proposed budget.
  - h. Agency coordination services are limited to a total of 16 hours of labor. Coordination services, in excess of these 16 hours, will be provided when requested by the City, as an additional service.

### PROJECT PLAN AND SCHEDULE

We have developed a schedule in MS Project based on the milestone dates given in the RFQ/P and our proposed task durations and sequence. Our Project Schedule outlines our project work plan and includes our proposed work activities, sequent of events, milestones, and starting and completion dates for the work elements included in our scope of work. As requested, we have included twenty-one (21) workdays for the City to review of each submission of deliverables.

We will provide periodic project schedule updates to demonstrate how the project is tracking relative to the planned schedule to apprise the City and other stakeholders of our activities. We believe that attention to communications and coordination is the key to keeping the project running smoothly, on time, and on budget.