Public Facilities Committee Agenda

City of Newton
In City Council

Wednesday, September 22, 2021

The Public Facilities Committee will hold this meeting as a virtual meeting on Wednesday, September 22, 2021 at 7:00 pm. To view this meeting using Zoom use this link: https://us02web.zoom.us/j/84179099274 or call 1-646-558-8656 and use the following Meeting ID: 841 7909 9274

Item Scheduled for Discussion:

#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)

#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.

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.

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

The location of this meeting is accessible and reasonable accommodations will be provided to persons with disabilities who require assistance. If you need a reasonable accommodation, please contact the city of Newton's ADA Coordinator, Jini Fairley, at least two business days in advance of the meeting: jfairley@newtonma.gov or (617) 796-1253. The city's TTY/TDD direct line is: 617-796-1089. For the Telecommunications Relay Service (TRS), please dial 711.

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.

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.

Chair's Note: *The committees will discuss the criteria to use when prioritizing sidewalk installation and repair, as well as changes to sidewalks for ADA compliance and crossing safety.*

Referred to Public Facilities and Public Safety & Transportation Committees

#81-20 Discussion on transportation priorities and public works
PUBLIC FACILITES 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 Facilities Held 7-0 (Councilor Kelley not voting) on 01/22/20
Public Safety & Transportation Held 5-0, on 01/22/20
Public Safety & Transportation Held 7-0, Councilor Lipof not voting on 04/21/21

#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)

Respectfully submitted,

Alison M. Leary, Chair

Ruthanne Fuller
Mayor

City of Newton, Massachusetts
Office of the Mayor

315-21
Telephone
(617) 796-1100
Fax
(617) 796-1113
TDD/TTY
(617) 796-1089
Email
rfuller@newtonma.gov

July 19, 2021

RECEIVED
2021 AUG -2 PM 2:27
CITY CLERK
NEWTON, MA. 02459

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

To the Honorable City Councilors:

I am pleased to appoint John Synnott of 22 Winona Street, Auburndale as a member of the Designer Selection Committee. His term of office shall expire on December 31, 2021 and his appointment is subject to your confirmation.

Thank you for your attention to this matter.

Warmly,

Ruthanne Fuller

Ruthanne Fuller
Mayor

Newton, MA Boards & Commissions

Submit Date: Jul 06, 2021

315-21

Application Form

Profile

John (Jack) — First Name
D — Middle Initial
Synnott — Last Name

[redacted] — Email Address

22 Winona Street — Home Address
Suite or Apt

Auburndale — City
MA — State
02466 — Postal Code

What Ward do you live in?

☑ Ward 4

[redacted] — Primary Phone
[redacted] — Alternate Phone

Retired — Employer
Architect — Job Title

Which Boards would you like to apply for?

Newton Commonwealth Foundation: Submitted

Interests & Experiences

Please tell us about yourself and why you want to serve.

Why are you interested in serving on a board or commission?

I am (mostly) retired after a 44-year career in architecture. And I am also a 41-year resident of Newton, all but one of those years in the same house in Auburndale. I've played golf at Newton Common wealth for 40 of those years. Our son was educated at Burr, Day and North. We have enjoyed all the benefits of living in this great community. And now is the time to start giving back. On my resume you will see that my career was spent solving difficult planning, design and budget issues on large health care projects at some of the most prestigious academic medical centers in the country. In addition, I have been a volunteer with MassGolf the last three years. This last year I became a rules official. Taken together my experiences will help me learn quickly. I am ready to contribute. Thanks for your consideration, Jack Synnott

John_D_resume.doc — Upload a Resume

John (Jack) D Synnott

John D. Synnott
22 Winona Street
Auburndale, Massachusetts 02166
[redacted]

PROFESSIONAL EXPERIENCE

TSOI / Kobus & Associates, Inc. *1999 to 2014*
Cambridge, Massachusetts

ASSOCIATE PRINCIPAL

Mount Sinai Medical Center, New York, NY
Cleveland Clinic Health System, Hillcrest Hospital, Cleveland, OH
Tsoi / Kobus & Associates Offices, Cambridge, MA
Boston Medical Center, Boston, MA

CANNON *1994 to 1999*
Boston, Massachusetts

VICE PRESIDENT / PRINCIPAL

Polaroid World Headquarters, Cambridge, MA
Mercy Hospital "Family Life Center", Springfield, MA
Boston University Medical Center/Boston City Hospital Facilities Study, Boston
Mid-Maine Medical Center, Waterville, ME
- **Facilities Master Plan.**

Boston Medical Center, New MRI Facility, Boston, MA
MetroWest Medical Center, Framingham, MA
New England Center for Children, Southborough, MA
Boston University, Boston, MA. Managing Principal for the following:
- **Executive Administration Center**
- **University Athletic and Recreational Sports Master Plan**
- **Men's Hockey Team Lockers**
- **Women's Varsity Soccer, Lacrosse and Basketball Lockers**

THE ARCHITECTS COLLABORATIVE, INC. *May 1979 to 1994*
Cambridge, Massachusetts

SENIOR ASSOCIATE / PROJECT MANAGER

The International Centre for Advanced Medical Care, Clydebank, Scotland
Lahey Clinic Medical Center, Burlington, MA
Complejo Medico de las Americas, Guatemala City, Guatemala
RAF Lakenheath Composite Medical Facility, Lakenheath, England
University of California, Davis, Medical Center, Davis, California
Fort Drum Troop Medical, Dental and Ambulatory Health Care Clinics, Watertown, NY
St. Joseph's Hospital - Master Site Plan Development, Tampa, FL

Loring Air Force Base Composite Medical Facility and Dental Clinic, Limestone, ME
Veteran's Administration Medical Center, West Roxbury, MA
Temple University Hospital, Philadelphia, PA
Melrose-Wakefield Hospital, Melrose, MA
Schneider Children's Hospital, New Hyde Park, NY

HOSPITAL INVESTORS, INC *May 1978 to May 1979*
Reston, Virginia

ARCHITECT / CONSULTANT

Westbrook Hospital Psychiatric Prototype, Richmond, VA
Chesterfield County Hospital, Chesterfield County, SC
Coastal Medical Center, Biloxi, MS
Desert Springs Hospital, Las Vegas, NV

MEDICUS PLANNING, INC. *May 1977 to May 1978*
Reston, Virginia

ARCHITECT / CONSULTANT

Hermann Hospital, Houston, TX
Mesquite Memorial Hospital, Mesquite, TX
Mercy Hospital, Baltimore, MD

EDUCATION AND REGISTRATIONS

Rensselaer Polytechnic Institute *1966 to 1970*
Troy, NY
BACHELOR OF SCIENCE, MANAGEMENT

Rensselaer Polytechnic Institute *1974 to 1976*
Troy, NY
BACHELOR OF ARCHITECTURE, CUM LAUDE

Massachusetts Reg. No. 5086 *1980*

NCARB *1997*

Ruthanne Fuller
Mayor

City of Newton, Massachusetts

Office of the Mayor

343-21
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rfuller@newtonma.gov

August 30, 2021

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

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 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,

Ruthanne Fuller

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

Telephone: 617-796-1009 • Fax: 617-796-1050 • Jmcgonagle@newtonma.gov

VTP
ASSOCIATES
INC.

LAND SURVEYORS-CIVIL ENGINEERS
MORTGAGE INSPECTION
SPECIALISTS

TEL (617) 332-8271
TELEFAX (617) 969-2330
EMAIL: vtp@vtpassociates.com

132 ADAMS STREET
2ND 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.

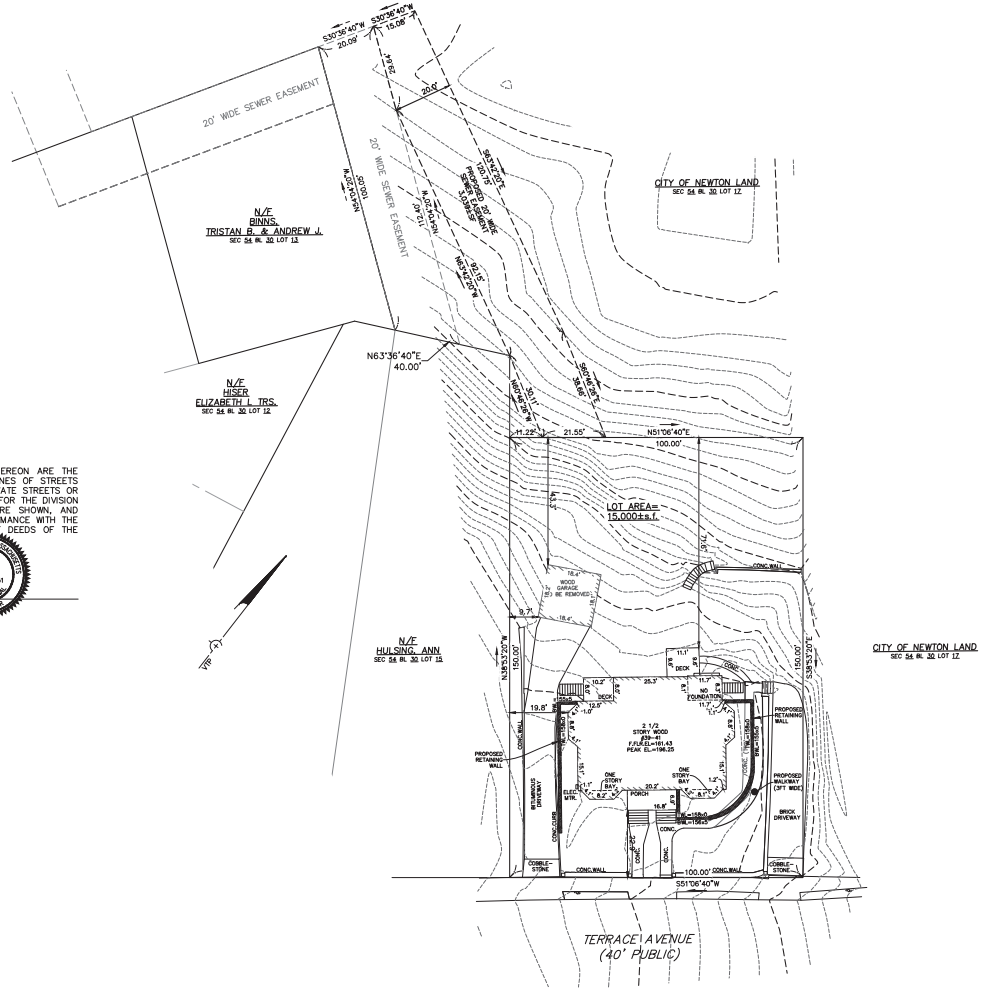
217204_easement2.dwg (2-2017)

MIDDLESEX REGISTRY OF DEEDS

DEED REFERENCE
BOOK 64888 PAGE 391

OWNER OF RECORD
OCEAN REALTY PARTNERS, LLC

RESERVED FOR REGISTRY USE



LEGEND

BUILDING	
PROPERTY LINE W/ BEARING DISTANCE	S81°56'34"E 116.23'
CONTOUR	70
STOCKADE FENCE	
CHAINLINK FENCE	
PICKET FENCE	
UTILITY POLE	
LIGHT POLE	
DECIDUOUS TREE	DEC. 22"
CONIFEROUS TREE	CON. 12"

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.

COMMONWEALTH OF MASSACHUSETTS
JOSEPH R. PORTER
NO. 39051
REGISTERED
PROFESSIONAL ENGINEER

JOSEPH R. PORTER PLS

0 20 50 100
SCALE: 1" = 20'

EASEMENT PLAN
NEWTON, MASSACHUSETTS

SHOWING PROPOSED EASEMENT AT
#39-41 TERRACE AVENUE

SCALE: 1in.=20ft. DATE: JANUARY 31, 2019;
REVISED: JANUARY 25, 2021
PROJECT: 217204

VTP ASSOCIATES INC.
LAND SURVEYORS – CIVIL ENGINEERS. 132
ADAMS STREET 2ND FLOOR SUITE 3
NEWTON, MA 02458
(617) 332-8271

SHEET 1 OF 1

321-21

Ruthanne Fuller
Mayor

City of Newton, Massachusetts
Office of the Mayor

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(617) 796-1100
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rfuller@newtonma.gov

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, 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

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,

Ruthanne Fuller

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 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.

Telephone: 617-796-1009 • Fax: 617-796-1050 • Jmcgonagle@newtonma.gov

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

Telephone: 617-796-1009 • Fax: 617-796-1050 • Jmcgonagle@newtonma.gov

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.

	TOTAL POINTS	RANK	BASE PRICE	OPTIONS	TOTAL PRICE
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

Telephone: 617-796-1020 Fax: 617-796-1051 Ltaverna@newtonma.gov

February 25, 2021

GEI Consultants

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.

GEI Consultants, Inc.
400 Unicorn Park Drive, Woburn, MA 01801
781.721.4000

- 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.
Senior Project Manager/Vice President

R. Lee Wooten, P.E.
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
	Total	$118,620
	City requested contingency budget for additional permit applications	$20,000
	Total with Requested Contingency	$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 relativity 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.

City of Newton

Ruthanne Fuller
Mayor

DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER

1000 Commonwealth Avenue
Newton Centre, MA 02459-1449

Date: September 20, 2021

To: City Council

From: James McGonagle, Commissioner
Shawna Sullivan, Deputy Commissioner

Subject: Street Sweeping Pilot

At the request of the Ward 1 Councilors and a few community leaders, we have begun to develop a street sweeping pilot proposal. Below is a proposal that should be brought to a community meeting for input.

The draft proposal includes the below targeted streets which comprise approximately 4 miles of curb line.

Targeted Streets
- Dalby St, Faxon St, Jasset St, Beech St, Allison St, Los Angeles St, Cook St, Morgan Pl, Green St, (from Cook to Pearl), Kennedy Circle, and Middle St

The pilot would ban parking on both sides of the street one day a month (preferably a Tuesday, Wednesday, or Thursday) between the hours of 7 am to 11 am. Data will be gathered on current parking conditions prior to the pilot and monitored throughout the pilot.

The proposed enforcement would be a written warning the first month, a ticket the second month and ticket and towing the third month.

The duration of the pilot should be at least six months to gather accurate data.

We anticipate starting this on April 15, 2022 after the snow season.

James McGonagle
Commissioner
Telephone: (617) 796-1010 • Fax: (617) 796-1050 • jmcgonagle@newtonma.gov

City of Newton
Department of Public Works
Utilities Division

Theodore J. Jerdee, Utilities Director
60 Elliot Street
Newton, Ma. 02461
Telephone (617) 796-1623
tjerdee@newtonma.gov

Memorandum

TO: James McGonagle, Commissioner of Public Works
Shawna Sullivan, DPW Chief of Staff

FROM: Theodore J. Jerdee, Utilities Director

DATE: September 20, 2021

RE: Response to question for 9/22/21 PFC-Hydrants

The following are my responses to questions to Teresa Sauro's email dated August 1, 2021 pertaining to malfunctioning hydrants during a fire at 44/46 Cook Street on January 23, 2019.

RESPONSES TO TERESA SAURO EMAIL DATED AUGUST 1, 2021:

1. Q; When does street sweeping start and when does it end? The first week of November I saw the street sweeper hook up to the hydrant and then proceeded to sweep the street. I said to myself "why on earth would he street sweep today as it is freezing out. Then I said to myself he should have waited till next week as the parking ban starts and then he actually can sweep the street as their will be no cars on the street. (The night of the fire this hydrant was frozen. From doing my research if the hydrant is not secured properly condensation sets up and the hydrant freezes.)

   A: Street sweeping is weather dependent, normally starting in mid-March and ending around mid-December. All hydrants in Newton are dry barrel hydrants, the hydrant is designed so that when the hydrant is closed, any water remaining in the barrel is to drain through waste holes at the base of the hydrant. When hydrants are inspected, this is one function that is checked.

2. Q: How many hydrants are in the City? Do you keep track of old ones and new ones?

   A: There are 2,577 public hydrants in the city, we do not keep track of the old ones, hydrants are replaced when the city performs water main rehabilitation annually, hydrants are replaced/repaired by the Utilities Division when they are reported by Fire Department, residents or DPW personnel.

3. Q: Who maintains the hydrants? Is it Public Works? How often are they checked once a month, 6 months, or once a year? If a hydrant is broken how long does it take to repair it? (Picture attached shows the hydrant to the side of Steamers collapsed the night of my fire as they hooked up the hose and it fell over) This hydrant was reported broken prior to my fire. If a hydrant is checked within the said time and then breaks how do you know? Is there an alarm in them or is there something in them that it will show that it is broken to Public Works? We all know the first few minutes are crucial in fighting a fire..

   A: The DPW-Utilities Division maintains the hydrants, the hydrants are checked annually by the Fire Department. Once a broken hydrant is reported to the Utilities Division, the repair is attempted to be completed in 10 days. If a hydrant breaks between inspections you will not know, unless the hydrant is hit by a car and reported, is wasting water and located by our semi-annual leak detection survey, or personnel are authorized to use the hydrant and is reported to the Utilities Division that it is not functioning. There are no alarm systems that would report a non-functioning hydrant.

4. Q: The hydrant to the side of my house was frozen, the one up the street (Steamers) collapsed when they tried to hook up, they were able to run a hose up at Middle Street and then one at the end of Cook Street, and then went to Pearl hooked up and ran hoses through neighbor's back yard coming into my back yard. My husband went to the Chief to have him send message to the men as there was a pool there. It was 2:00 in the morning.

   A: The NFD has in the past contacted the Utilities Emergency On Call person to report an issues that arises out of the distribution system in the course of firefighting.

5. Q: I understand the fire departments flushes the hydrants as well. How many times does that happen in a year and does that coincide with Public Works checking the hydrants.

   A: The NFD in the course of testing the hydrant for functionally will flow water from the hydrant in order to remove sediment from the barrel of the hydrant in order to maintain water quality within the system, this is done during the summer/fall seasons (annually). The Utilities Division performs unidirectional hydrant flushing spring through fall. This requires the Utilities Division to operate the hydrants and valves to assure their functionally, this is not done city wide annually, but through about 20% of the city annually.

6. Q: After the fire on Cook Street, two fire hydrants were changed. After the fire the frozen hydrant was changed and moved to a different location on Cook Street and then they relocated the other hydrant at end of the street and moved it across the street. Why? How many hydrants to a street? Cook Street has two hydrants

   A: On Wednesday January 23, 2019, crews were sent to Cook Street to defrost/unthaw hydrants in the area. The two hydrants you mentioned above were relocated under the watermain cleaning & lining program in 2020, also an additional hydrant was installed. Hydrants in residential areas are normally placed 500 feet apart from each other.

7. Q: Chief Proia and his crew did an amazing job despite conditions as if it was the night before with such horrific winds the street would have gone. Thank God nobody was hurt, nobody perished in the fire, and the two cats were also saved. It was a three-alarm fire.

   A: I agree with your statement

8. Q: There is a hydrant on Mill Street top of the hill that looks like 100 years old. I worry as I am a walker and now look at all hydrants throughout the City. I noticed the fire hydrants in Newton Highland locations look newer as the ones in Nonantum seem older. How long do fire hydrants last and how frequently are they changed.

   A: Well maintained hydrants have a service life of 50-60 years, during the city's cleaning and lining program, hydrants are replaced on the streets that the work is being performed, since 2009 there have been 307 new hydrants installed. The Utilities Division (9/1/18 to 8/11/21) has repaired 30 hydrants. The City entered into an Engineering Service Agreement in 2019 with Tata & Howard to perform Hydrant Inspections/Unidirectional Flushing and enter that data into the city' PeopleGIS data base, to date over 400 hydrant inspections have been performed.

9. Q: We had a Safety Meeting two years ago when Jay was head of this committee. Chief Proia attended the meeting. We couldn't ask these questions as they did not pertain to him and that's when we learned it was Public Works who maintain the hydrants and fire department flushes them, I think twice a year?

   A: The DPW-Utilities Division is responsible for the Operation & Maintenance of the fire hydrants, The NFD is responsible to inspect the hydrants for operability annually. Any deficiencies discovered with any hydrants during the inspection is brought to the attention of the Utilities Division for repairs or replacement.

10. Q: Why was the street sweeper doing street sweeping the second week of November? Do they extend timelines? Does it always end in October?

    A: The DPW-Streets Division sweeps streets throughout the year. Water is not used when temperatures fall below freezing.

Hydrant Inspection Procedure Updated 2021

General information

- The City of Newton uses dry barrel fire hydrants that are open "RIGHT" clockwise.
- For safety reasons, operation of fire hydrant should be done from behind the hydrant.
- Do not use a persuader or leverage bar on any part of the fire hydrant.
- Board/tarp needed on ground so flowed water from hydrant minimizes lawn damage.

PROCEDURE

1. Note fire hydrant location.
2. Visually inspect the area around the hydrant.
    a. Hydrant visible on arrival, hydrant marker flag, minimum clearance of 3 feet around the hydrant is required in all directions.
3. Visually check the hydrant for any defects.
    a. Remove all caps and check the threads. (remove the first cap slowly to ensure there is no pressure on the hydrant).
    b. Check for water or ice in barrel.
    c. Clean threads with a wire brush, lubricate inside of caps with Never Seez, replace caps.
    d. If hydrant has safety chains on caps, ensure the chains are loose and do not bind on the cap.
    e. Check the breakaway flange for damage or loose bolts.
4. Remove 4 ½" cap, open hydrant SLOWLY, approximately 3 to 5 turns. Allow time for the air to escape from the hydrant barrel (approximately 1/3 of 4 ½" barrel should be flowing).
    a. Check the ease of operation – if opening is difficult try opening and closing the hydrant.
    b. Check for leakage at the flanges, operating nut, nozzles, and nozzle caps.
    c. Allow the water to flow for a minimum of 3 to 5 minutes to flush the hydrant and water lines.
5. When testing is complete, check the water using a solid white cup.
    a. Look for discoloration and debris. Continue to flush hydrant until water is clear.
    b. If needed, the flow may be reduced by closing the hydrant VERY SLOWLY.
6. Once the water is clear (using the white cup to check), close hydrant VERY SLOWLY.
    a. Be aware that some hydrants may not seem to slow down when you turn them, this usually means the hydrant may slam (it will have some slop in the stem and may make a thump sound when closing). This causes water hammer and could cause major damage to the water distribution system. Therefore it is imperative that hydrants are closed VERY SLOWLY.
7. Wait to make sure the hydrant stops dripping. It should not be necessary to close the hydrant with great force.
    a. If the hydrant does not shutoff completely, there may be debris stuck between the disc and seat. Over tightening of the hydrant can do permanent damage to the disc. Open the hydrant to flush the debris, then close the hydrant again. If the hydrant will not shut off completely, notify the Utilities - Water Division.

Hydrant Survey, Static/Flow Test, Flushing and GPS Proposal

FOR THE CITY OF NEWTON MASSACHUSETTS

PROPOSAL PREPARED FOR

Theodore Jerdee
City of Newton, Massachusetts
1000 Commonwealth Ave
Newton, MA 02459

PREPARED BY
Jon Levulis
Inspector/Consultant
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2000 N Loop W
Houston, TX 77018
281-407-6161

HYDRANT.COM

General Description of Project

This agreement outlines tasks to be performed by HYDRANT.COM (further known as "Contractor") in fulfillment of the City of Newton Massachusetts Hydrant Survey, Inspections, Static/Flow Testing, Flushing. And GPS Project (Newton Massachusetts further known as "The City"). The purpose of the project is to survey, inspect, static/flow test, flush, gather data, and provide notices and reports about The City's water distribution system and hydrants. Contractor will provide all labor, materials, and equipment required to SURVEY and CONDUCT a Fire Hydrant Survey, Inspections, Static/Flow Testing, Flushing, GPS and Work Order Program for The City.

Project Overview

HYDRANT.COM provides a Hydrant Survey, Inspections, Static/Flow Testing, Flushing, and GPS, and Worker Order Program to evaluate and improve water distribution system reliability through the execution of a hydrant survey project. Data gathered during the program helps increase the reliability of the distribution system by documenting and evaluating the operational and physical characteristics of all water distribution system hydrants throughout The City.

Through THE comprehensive pressure and flow testing program, low flow areas affected by valve closures will be identified. Low flow areas are considered flowing under 750 GPM (20 PSI) or significantly lower than adjacent hydrants. Two pressure tests will be conducted on each hydrant (static and flow). Each hydrant is fully opened and fully pressurized (before flowing) to gather a static pressure. Each hydrant is fully flowed to determine flow capabilities. Residual fire flow tests using 2 hydrants will also be conducted throughout The City. Residual tests provide data representing pressure potential throughout the system.

Flushing lines freshens the water supply and identifies areas needing to be flushed at more regular intervals. Locations where hydrants flow dirty over 5 minutes are immediately reported to The City. Through a 50+ point safety inspection, the ISO Condition of each hydrant is recorded. ISO Conditions provided for each hydrant help minimize ISO ratings and provide data necessary for an ISO audit review. Hydrants needing to be GPSed will have their coordinates differentially corrected.

Upon completion of the survey, all information gathered will be provided in a hard and soft copy report containing prioritized and categorized deficiencies. Information can be used to update and amend The City's GIS through the integration of all survey data. Categorized reporting combined with a detailed work order system allows for the current hydrant status and maintenance history to be prioritized, electronically recorded, and easily accessible. Pressure testing, inspections, and flushing is vital to a comprehensive assessment of the water distribution system.

Phase 1: Review Water System Distribution Data

Contractor will use GIS shapefiles of The City's water distribution system information to review data of hydrant locations and attributes. If GIS maps are unavailable, a copy of all available maps will be provided. For GIS maps, all hydrants will have or will be assigned Unique ID #s by The City before generating shapefiles. Unique ID #s are used for post-hydrant survey data integration. The City will provide Contractor with two hard copies of maps of the water distribution system with the following attributes: hydrant, hydrant unique ID #, water lines, water line sizes, street names, parcels, and City boundaries. Contractor will review The City's existing water distribution system information databases and other relevant data about hydrants.

Phase 2: Inspections, Static/Flow Test, Flushing, GPS, & Report

Contractor will physically locate, identify, inspect, static test, flow test, flush, GPS, record data, and assess the operational condition of hydrants in The City's water distribution system. Contractor will document various operational attributes, necessary repairs, and ISO conditions of each hydrant. The purpose of Phase 2 is to provide the framework for maintaining operational water distribution system hydrants and an optimal ISO rating, and remedy areas possibly affected by low flows. Once the hydrant survey report is complete, a finalized Hydrant Survey, Static/Flow Test, Inspection, and Flush Report of all system hydrants will be provided to help with water distribution system optimization.

Scope of Survey

50+ Point Safety-Inspection:

A 50+ point inspection is performed on each hydrant to ensure safe use during emergencies.

- Inoperable hydrants are immediately reported to The City
- Verify hydrants are unobstructed and easy to access.
- Remove hose cap and verify adequate lubrication is present on hose and pumper nozzle threads.
- Inspect each flange and bonnet bolt and record the quantity of structurally compromised bolts.
- The hydrant is fully opened and fully pressurized to ensure safe use during an emergency.
- The hydrant is slowly depressurized with the flow apparatus, then a flow test is conducted with the hydrant fully open.
- The flow test is conducted flowing from a 2.5in hose nozzle through the flow apparatus.

50+ Point Safety-Inspection (continued):

- Hydrant is fully flowed to verify maximum flow out of hose nozzle and verify valves are open.
- Verify all chains are present and S-hooks are properly connected.
- Determine if the hydrant needs to be raised or lowered.
- Locate position of the hydrant isolation valve cover and notate if valve cover is not visible.
- Notate if the blue marker needs to be replaced or is missing.
- Check the condition of the paint and notate if the hydrant is properly color-coded for flow.
- Verify hydrant main valve closes properly (valves that do not close properly increase the probability of a water hammer).
- Classify the hydrant according to its ISO rating.
- Hydrants exhibiting possible unauthorized operation will be documented.
- The exact location of the hydrant will be taken using GPS "x,y,z" coordinates (if not already GPSed). GPS coordinates will be differentially corrected.
- Hydrant mapping discrepancies will be recorded to ensure an up-to-date GIS/mapping system.

Static Test

- The hydrant is opened gradually to prevent rapid pressurization of the hydrant barrel.
- The hydrant is fully opened, pressurized, and inspected for leaks.
- The static pressure apparatus is used to fully pressurize the hydrant without flowing it.
- During pressurization, any excessive underground leakage is recorded.
- Once pressurized, the static pressure apparatus is used to verify static pressure.
- Any part of the hydrant visibly leaking (gaskets, o-rings, flanges, bonnet, nozzles, quick connects, etc.) is notated. A static PSI is recorded.

Flow Test

Flow testing determines the hydrant's capabilities before an emergency and the general conditions of the distribution system. In addition to the static pressure test, a flow pressure test is also is conducted.

Flow Test (continued)

- To minimize potential water hammers, hydrant flow is reduced 90% PRIOR to shutting down the hydrant.
- Once flow pressure is reduced 90%, the hydrant is shut down. In such cases where the hydrant malfunctions and cannot be shut down, The City will be immediately notified.
- A calculation using static and simulated residual pressure provides a simulated Hazen Williams value at 20 PSI
- To prevent excessive flooding in case the hydrant cannot shut down, the flow is slowly reduced until the flow is reduced to zero.
- Occasionally, hydrants do not drain properly, water main valve issues will be notated.
- Main valves which have issues increasing the probability of a water hammer are notated

Residual Fire Flow Testing

Residual fire flow testing verifies water main capabilities and is conducted using 2 hydrants. Static pressure is taken on a residual hydrant. An adjacent flow hydrant is fully opened and fully flowed out of two hose nozzles. Flow rates are measured simultaneously as the residual pressure is recorded on the residual hydrant. Available GPM at 20 PSI is calculated using the Hazen-Williams formula with results provided both numerically and graphically. Testing is performed per NFPA 291. Up to two residual tests will be conducted daily, throughout The City. During the project planning, Contractor, along with The City staff will identify any potential locations of interest where residual fire flow testing is needed. Results can be used to place priorities with respect to upgrading older, smaller water mains and determine fire flows for new developments.

Flushing

Each hydrant is flushed to minimize corrosion, rust, sediment build-up within the distribution system, restore proper residuals and freshen the water supply. In cases when water quality is questionable, (not fully clear and colorless) a white cup will be used to verify water is clear and colorless. In cases when hydrants flush excessively dirty (over 5 minutes), The City is immediately notified. In locations where multiple hydrants flow dirty over 5 minutes, The Contractor will notify The City, and move to another location to provide time for The City to flush the dirty area. Once an excessively dirty area is flushed until water is clear and colorless, Contractor will return to the area. To provide an idea on water usage, if 60 hydrants are tested and flushed in a day, and flow an average of 1,000 gallons per minute, an estimated 60,000 gallons of water will be used daily.

Delivery of Report and Submission of Repairs Required for Water Distribution System Optimization

Upon the completion of the hydrant survey project, Contractor will develop a finalized Hydrant Survey, Static/Flow Test, Inspection, and Flush Report of all system hydrants. Included with the report is an inventory of repairs required for optimal hydrant operation and accessibility. Reports provided allow The City to prioritize repairs and remedy issues uncovered during the hydrant survey.

A work order management system is included with the report. Each report with hydrants in need of repair contains a link to all hydrants associated with the specified repair. Work orders can be generated for each specific issue, categorized, printed, filled out in the field, and updated electronically. After a hydrant is repaired, the work order can be added to its associated hard copy report and electronically updated within the work order management system.

Reports provided include:

1. **OUT OF SERVICE** hydrants
2. Low-pressure hydrants
3. Flow rates (GPM)
4. ISO condition classifications
5. Hydrant valves that slam closed
6. Hydrant valves that do not close properly while under pressure
7. Leaking hydrant main valves
8. Hydrants in extreme need of lubrication
9. Seized hose and pumper caps
10. Dirty flow locations
11. New hydrant locations found during the survey
12. Hydrant accessibility issues
13. Residual flow test data (results are provided both graphically and numerically)
14. Blue markers missing
15. Bonnet repairs
16. Chains and S-hooks
17. Extensions needed
18. Flange repairs
19. General lubrication
20. Hydrants in GIS that are not present in the field during the survey
21. Hydrants not in GIS
22. Main valve replacements
23. Make/Model/Year
24. Miscellaneous parts
25. Notes not associated with other reports
26. Private hydrant locations
27. Re-caulk hose/pumper nozzles
28. Hydrants needing paint
29. Unlabeled hydrants in GIS
30. Estimated gallons of water used to flow test and flush hydrants

Other reports are available, and additional reports can be added upon request.

Risk of Loss:

Many issues can occur when performing these tests. Hydrant.com cannot be held liable for issues that may occur during testing. Issues include but are not limited to: hydrant main valves which do not operate properly may slam closed and could result in a water hammer. Water hammers can rupture water lines and cause property damage. Hydrants can break when pressurized which may cause property damage and/or flooding. Flushing water lines can cause sediment to be displaced causing issues with commercial and residential water supply. Hydrants may separate from the flange upon pressurizing. Isolation valves may need to be dug up when main valves do not seal properly, or main-line valves may need to be shut down for hydrants without isolation valves. Several other issues can occur during this type of testing. Although most of these items do not cause any damage and rarely occur, The City of Newton backnowledges these risks and cannot hold Hydrant.com liable for any damage caused by performing fire hydrant testing. The primary purpose for inspecting, pressurizing, and flow testing hydrants is to discover any problems with fire hydrants, water lines, and valves.

Costs:

The cost of the physical inspection, flow test, and flush is $55 per hydrant location surveyed, and a cost of $8 to GPs each hydrant location. The cost to GPS only new hydrants/unapped hydrant locations would be a daily cost determined by the number of hydrants to be GPSed. An additional charge of $55 for any hydrants that need to be re-tested applies. The hydrant survey project schedule is currently pending. Pricing is subject to local regulations and ordinances in your area.

Conclusion:

A hydrant survey program will assure your residents, and community that the fire hydrant's operability is verified, and deficiencies can be remedied before an emergency. Annually testing all hydrants within your system helps lower your ISO rating which lowers insurance costs for residents. Immediate notifications are provided regarding serious issues. A hardcopy report provides specific details of each fire hydrant. Reports provided to The City at the end of the survey contain all data gathered during the surveying, inspecting, testing, and flushing project, in multiple file types.

Hydrant Survey, Static/Flow Test, Flushing, and GPS Preliminary Proposal

Date: August 2nd, 2021

To: City of Newton Massachusetts
1000 Commonwealth Ave
Newton, MA 02459
617-796-1623

Start Date:	TBD	*Contact:*	Jon Levulis
Finish Date:	TBD	*Payment Terms:*	TBD
Location of work:	City of Newton, MA (On-site)	*Payment Due:*	TBD

ITEM NO.	QTY.	DESCRIPTION	PRICE EACH	AMOUNT
1	2,575	Hydrant Safety Inspection, Static/Flow Tests, Flushing and Survey (4-6 week time frame - 6:00 AM to 5:00 PM)	55.00	141,625.00
2	2,575	GPSing all hydrants for the purpose of integrating hydrant survey data into GIS (*if all hydrants are not GPSed). Shape file will be provided	8.00	20,600.00
3	1	Provide soft copy back up with work order management system.	25.00	25.00
4	1	Hardcopy report of fire hydrant distribution system.	100.00	100.00
5	85	Estimated total of 85 residual flow tests No Charge provided when hydrant survey takes places	480.00	0.00
			Total:	162,350.00

1. All hydrants maintained by the City of Newton.
2. Pricing based on actual number of hydrants surveyed, GPSed and conducting GPS locations during hydrant survey.
3. *To GPS only new hydrants, a daily cost would be determined based on the amount of hydrant locations to GPS.
4. The City of Newton understands the risks involved with a fire hydrant flow testing and surveying program. The City of Newton will incur cost related to repairing/replacing broken/damaged hydrants and any/all costs related to a hydrant testing program.
5. A charge of $55 applies for each re-tested hydrant.
6. Pricing based hydrant survey scheduled for 2022.

REPLY TO: ***HYDRANT.COM***
5380 West 34th Street #214
Houston Texas, 77092
Phone: (281) 407-6161
E-Mail: Jon@Hydrant.com

This pricing is preliminary and based on the information we have received. Pricing will be finalized once we receive all requested documentation.

8. After the hydrant is closed, back off on the operating nut about 1/4 turn.
    a. This removes the pressure from the operating nut and stem. The main valve will remain closed.
9. Check to see if hydrant drains, if hydrant does not drain notify the Utilities–Water Division.
10. Replace the caps.
    a. Caps should be tight enough to prevent removal by hand but loose enough to be removed with ease using a spanner wrench.

Note any problems on inspection form:

If the hydrant operates with difficulty, discontinue the inspection.

Place "Out of Service" ring

- If the hydrant will not open.
- Caps cannot be removed.
- Water leaking from hydrant.

Any problems with hydrants need to be reported to the Utilities-Water Division with the following information.

- Date,
- Location
- Problem
- Type of hydrant. (Darling, Kennedy, Mueller, etc.)

City of Newton

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

Ruthanne Fuller
Mayor

Date: September 20, 2021

To: Public Facilities Committee

From: James McGonagle, Commissioner
Shawna Sullivan, Deputy Commissioner

Subject: Criteria Used when Prioritizing Sidewalk Installation and Repair, and ADA Compliance and Sidewalk Crossing Safety during Construction

Sidewalk Prioritization

Sidewalk improvements include the construction of new concrete sidewalks where none currently exist or filling in missing gaps of sidewalk networks. Public Works is focusing on school zones, as well as village centers, for new sidewalk installations and the repair to existing sidewalks that are cracked, lifted or otherwise not properly accessible. Accessible curb cuts are also added and/or updated along with sidewalk installation and repair.

Public Works is in consultation with Safe Routes to School, the Transportation Advisory Group, the Council on Aging, the Commission on Disabilities, and Community Development Block Grants, in selecting sidewalks and ADA ramps to be installed.

Utilizing construction contractors dedicated to sidewalk repair, as well as in-house staff, the Department of Public Works will add over 2 miles of new sidewalk to the City and repair over 2 miles of existing sidewalks annually. Public Works does numerous sidewalk repairs across the City both proactively when DPW sees a problem and when a resident should alert us to an issue. In FY 2022, Public Works started on sidewalk installation and repairs along walking routes near the Pierce School. In FY2023, Public Works will focus on installing and repairing sidewalks in the walking routes around Mason Rice School, Williams School, and City Hall campus.

Sidewalk maintenance is prioritized based on the 311-work order system and is performed by city crews.

Currently, Public Works is completing an inventory of all sidewalks and accessible ramps city wide. The inventory should be completed by spring 2022. Once completed, our consulting engineer will be tasked to develop a sidewalk and accessible ramp priority list, based on asset management techniques, like that prepared for the roads' maintenance program. This should be completed by Fall 2022.

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ADA Compliance and Sidewalk Crossing Safely during Construction

Public Works has developed, and has been using, "Temporary Access During Construction" methods for the past two construction seasons, and we continue to insist that city contractors, as well as utility contractors, implement these techniques. All Public Work contracts for construction projects include requirements that the contractor provide temporary access for pedestrians. These techniques worked well during the West Newton Square and Newtonville Square construction projects. Public Works construction inspectors will continue with training on these techniques this upcoming winter, so they can recognize deficiencies and instruct contractors to perform to these techniques.

See attached "Pedestrians Checklist and Considerations for Temporary Traffic Control Zones"

Sincerely,

James McGonagle
Commissioner Public Works

Telephone: 617-796-1009 • Fax: 617-796-1050 • Jmcgonagle@newtonma.gov

Pedestrians Checklist and Considerations for Temporary Traffic Control Zones

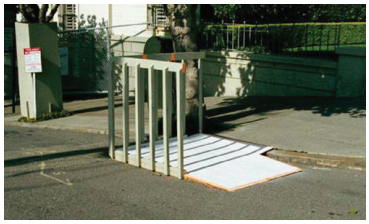
For those who plan, design, and construct temporary traffic control (TTC) zones, the *Manual on Uniform Traffic Control Devices* (MUTCD) provides guidance considerations regarding pedestrians, accessibility, and worker safety. This document provides a checklist and overview of pedestrian-related considerations during planning, design, and construction phases for a project and is designed to enhance pedestrian safety and accessibility, maintain Americans with Disabilities Act of 1990 (ADA) compliance, and provide positive guidance to avoid pedestrian confusion throughout each phase. This side of the document provides pedestrian considerations for use during the planning and design phases, while the other side provides information for users while out in the field.

Pedestrian Considerations during Planning and Design

Planning

- ☐ Provide a safe, convenient travel path for pedestrians that replicates as nearly as possible the most desirable characteristics of the existing sidewalks or footpaths throughout all phases of construction.
- ☐ Avoid creating pedestrian paths that lead pedestrians into direct conflicts with work site vehicles, equipment, operations.
- ☐ Avoid creating pedestrian paths that lead pedestrians into direct conflicts with mainline traffic moving through or around the work site.
- ☐ Determine the TTC impact on pedestrians, including significant generators such as schools, senior centers, transit stops and shopping areas.
  - Determine the level of accessibility needed for pedestrians in the TTC zone through observing existing pedestrian travel patterns, and make accommodations prior to the start of work. Consider meeting with local community organizations (i.e., local blind organization, city ADA coordinator, etc.) through open houses to address concerns and needs. Develop outreach products available in the appropriate formats for those with specials needs.
- ☐ Assess the TTC impact on existing pedestrian flow.
  - Ensure that temporary facilities replicate as nearly as practical the accessibility features present in the existing pedestrian facility when the existing facilities are disrupted, closed, or relocated in a TTC zone.

photo courtesy of AAA Foundation for Traffic Safety



Design

- ☐ Provide pedestrian information throughout the TTC zone.
  - Provide advance information, transition information, work area information, and ingress and egress directions for pedestrians. See *Accommodating Pedestrians in Work Zones* brochure developed by FHWA; FHWA-SA-03-011.
- ☐ The TTC pedestrian accommodation that utilizes a temporary route does the following:
  - Defines detoured routes clearly.
  - Provides advance signage at intersections rather than mid-block locations.
  - Separates pedestrians from vehicle traffic.
  - Avoids mid-block crossings.
  - Ensures that temporary routes are not much longer than the original route.
  - Provides clear and positive guidance to delineate a temporary route.
  - Provides continuous access to transit stops and/or relocates transit stops.
- ☐ Maintain a continuous accessible path of travel either around or through the construction site throughout all construction phases.
- ☐ Ensure compliance with Americans with Disabilities Act (ADA) of 1990 requirements.
  - Provide an alternate route when existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone. Temporary facilities should replicate the features present in the existing pedestrian facility.
  - Ensure a minimum sidewalk width of 36" (a 48" width is desirable), erect curb ramps, and provide passing space (minimum 5 foot by 5 foot space every 200 feet).
  - Maintain a minimum width and smooth surface to avoid creating tripping danger and to minimize barriers to wheelchair use. This includes providing ADA compliant facilities.
  - Make all barriers and channelizing devices detectable for pedestrians with visual disabilities. Note that the use of caution tape stretched between traffic control devices is not adequate and not acceptable.
  - Consider using additional devices for visual disabilities, such as audible information devices or accessible pedestrian signal.
- ☐ Maintain pedestrian access to businesses, residences, transit stops, etc.
- ☐ Provide temporary nighttime lighting for pedestrian walkways throughout the TTC zone.

continued on reverse

Pedestrians Checklist and Considerations for Temporary Traffic Control Zones

Continued

Pedestrian Considerations While in the Field

Construction/Maintenance/Utility

- ☐ Promote adequate pedestrian safety via physical separation from work space and vehicular traffic, overhead protection, etc.
- ☐ Provide adequate and safe detour(s) whenever sidewalks are closed or blocked.
  - Use signs at intersections to give advance notification of closures ahead, and inform pedestrians where to cross.
  - Provide audible signage for pedestrians with visual disabilities.
- ☐ Clear the path of debris and other items that may obstruct pedestrians' paths.
  - Avoid pedestrian walkway surfaces that are slippery when wet.
- ☐ Consider carefully the placement of intersection crosswalks, implement additional signing/marking, add and/or relocate transit stops, and modify traffic signals (traffic signal timing, pedestrian signals, push buttons) as necessary.
  - Take into account walking speeds and the distance pedestrians travel when traversing travel lanes to determine minimum green time.

- ☐ Inspect pedestrian accommodations during construction to ensure that the traffic control plan (TCP) is followed.
- ☐ Ensure traffic control devices are in good and safe condition.
  - Devices should be sturdy, firm to the grip, and smooth to the touch (have no rough edges).
  - Devices should not be potential tripping hazards.
  - Provide a continuous, detectable edging throughout the length of the facility such that pedestrians using a long cane can follow it.
- ☐ Make pedestrian routes ADA compliant and available to pedestrians during all phases of construction.

Helpful Resources

- U.S. Access Board www.access-board.gov
  - Public Rights-of-Way Accessibility Guidelines (PROWAG): http://www.access-board.gov/prowac/draft.htm#Text or US Access Board's PROW team: (800)872-2253.
  - Access Board videos on Accessible Sidewalks. http://www.access-board.gov/news/sidewalk-videos.htm.
  - Accessible Design for the Blind: www.accessforblind.org
- MUTCD. http://mutcd.fhwa.dot.gov/index.htm
- FHWA's pedestrian safety website. http://safety.fhwa.dot.gov/PED_BIKE/ped/index.htm.
- Federal Highway Administration, *Pedestrian Road Safety Audit Guidelines and Prompts Lists*, July 2007. FHWA-SA-07-007

ATSSA
SAFER ROADS SAVE LIVES

Developed by:
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U.S. Department of Transportation
Federal Highway Administration

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316-21

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July 26, 2021

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

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NEWTON, MA. 02459

To the Honorable City Councilors:

I am pleased to reappoint Puja Vohra of 130 Day Street, Newton as a member of the Citizens Commission on Energy. Her term of office shall expire on June 15, 2024 and her appointment is subject to your confirmation.

Thank you for your attention to this matter.

Warmly,

Ruthanne Fuller

Ruthanne Fuller
Mayor

Newton, MA Boards & Commissions

Submit Date: Jul 17, 2021

Application Form

Profile

Puja
First Name

Middle Initial

Vohra
Last Name

[redacted]
Email Address

130 day street
Home Address

Suite or Apt

Newton
City

MA
State

02466
Postal Code

What Ward do you live in?

☑ Ward 4

[redacted]
Primary Phone

Alternate Phone

Slipstream Inc
Employer

Director of Business Development
Job Title

Which Boards would you like to apply for?

Citizens Commission on Energy: Submitted

Interests & Experiences

Please tell us about yourself and why you want to serve.

Why are you interested in serving on a board or commission?

Experience: I have an undergraduate degree in architecture, followed by a masters in energy/climate as it relates to the built environment, and most recently a leadership course. I have 20 years of experience in managing strategic planning for utility energy efficiency programs, energy efficiency and green technology research and analysis, energy policy and zero energy buildings. Why do I want to serve in the commission?: For last three years I have been an active participant of energy commission and have contributed in shaping the city's climate action plan. Having had a diverse experience in both research and implementation of energy and green programs in the last 18 years, I understand the perspective of states, cities, manufacturers and end users/consumers. My collective knowledge can lend itself positively in contributing towards energy efficiency and sustainability of Newton city that I am so proud of to live in. I also believe that collective knowledge can be very powerful in making a change in a community. Hence I see myself as playing a vital role in this contribution.

Puja_resume-generic.docx
Upload a Resume

PUJA VOHRA
Slipstream | [redacted]

Slipstream—Director of Business Strategy (current).
Puja has experience with a broad range of utility energy efficiency programs, energy and sustainability related technical expertise, clean energy and codes policies. She has twenty years of professional experience in consulting, strategic planning and design of new and innovative program designs for utility energy programs and clean energy policy analysis. At Slipstream she is responsible for leading expansion of Slipstream's clean energy program offerings and consulting services in the Northeast.

Selected work in Program Design and Implementation

Lead for Utility Energy Efficiency Programs Planning. Puja led National Grid's Rhode Island commercial/industrial energy efficiency program planning. Her team organized electric and gas energy saving targets, benefit cost analysis, budgets to implement utility programs and guidelines for DSM program design. Her team successfully achieved all planned energy reduction targets for six years which resulted in significant reduction in KBTU consumption in RI. She was also the key company representative for commercial buildings during public hearings, other state regulatory meetings, stakeholder engagement, and at energy industry forums and conferences

Codes and Standards Utility Program Design and Implementation. While at National Grid, Puja was responsible for design and development of a utility-based codes and standards program for all eight MA Program Administrators (Mass Save) and National Grid Rhode Island. Her role included development of program components, stakeholder engagement to get buy-in, budgets and savings estimates for the new program and coordinating evaluation framework within utility's existing energy efficiency portfolio. This program has been successfully running since 2014 in RI and 2016 in MA.

Zero Energy Building Taskforce. To understand the current marketplace and scope for Zero Energy Buildings in Rhode Island (RI), Puja managed and facilitated a multi-stakeholder Zero Energy Building (ZEB) Taskforce for RI that addressed barriers and solutions to scale ZEBs in RI. The taskforce analyzed impacts of energy efficiency, renewable energy, battery storage and electric vehicles and impact on GHG emissions. Puja also led the long-term roadmap for zero energy buildings in RI via a white paper, that was submitted to the RI Governor's office.

Strategic Energy Management Program (SEMP). To provide large commercial utility customers with a unique energy program offering, Puja and her team designed and implemented the Strategic Energy Management Program (SEMP) for top quartile customers in RI and Massachusetts (MA), with customized technical assistance and incentives. She collaborated with leadership teams of large customers (universities, hospitals and IT offices) in establishing long-term energy savings goals for their building portfolio coordinated with their corporate environmental sustainability goals.

Third Party Implementer for California Utilities Multifamily Program: Prior to her work at National Grid, Puja was an energy and sustainability consultant and managed third party program implementation for California Utilities. She specifically managed two California state wide multifamily energy efficiency public programs through California Public Utilities Commission: one focused on affordable multifamily retrofits and another that focused on market rate new construction multifamily.

Selected work in Technical and Analytics

Market Potential Assessments. As part of energy efficiency program planning team, Puja was responsible for conducting market potential analysis of their existing building portfolio of commercial and industrial programs. This included analysis of current status of program offerings, savings achieved

and future energy savings potential for each of the market verticals within the commercial and industrial portfolio.

California Code Research and Daylighting Studies. As an energy consultant at HMG Inc, Puja conducted research and analysis of effectiveness of lay-in insulation and skylighting as part of California Energy Code change (Title-24 2005) proposal team on insulation, lighting and skylighting for California Energy Commission. This analysis was part of the Title 24 CASE project and was incorporated as a recommendation to the final code development. Puja was also part of another daylighting team and conducted research and analysis on impacts of daylighting on human performance in schools and offices for the California Energy Commission's PIER project

LEED Analysis. During her time at Davis Langdon as a sustainability consultant, Puja provided sustainable design consulting including goal setting and workshops, LEED evaluations, project management and documentation. As third part LEED assessor, she was also responsible for reviewing registered LEED projects for the US Green Building Council.

Employment experience

National Grid
Before joining Slipstream, Puja worked as a principal analyst at National Grid. She was the overall lead for the Company's Rhode Island (RI) energy efficiency programs strategic planning. Her team was responsible for electric and gas energy saving targets, benefit cost analysis, budgets to implement utility programs and guidelines for DSM program design. Her team successfully achieved all planned energy reduction targets for six years in a row which resulted in significant reduction in KBTU consumption in RI.

Davis Langdon (Now AECOM)
As a sustainability consultant at Davis Langdon, Puja focused on providing sustainable design support to large campuses, cities and individual office projects. She also provided specific LEED project management support and worked as a third party reviewer to USGBC's many registered projects.

Heschong Mahone Group (now TRC Inc)

Puja was responsible for building science research and program implementation during her time at HMG Inc. She focused on codes and standard related research, daylighting studies and third party program implementation of California Utility multifamily programs.

Education

Master of Science, Energy and Climate, Arizona State University, Arizona, US
Bachelor of Architecture, Institute of Environmental Design, Gujarat, India