



CITY OF BEACON, NEW YORK
ONE MUNICIPAL PLAZA
BEACON, NY 12508

Mayor Randy Casale
Councilman Lee Kyriacou, At Large
Councilman George Mansfield, At Large
Councilwoman Peggy Ross, Ward 1
Councilman Omar Harper, Ward 2
Councilwoman Pam Wetherbee, Ward 3
Councilman Ali Muhammad, Ward 4
City Administrator Anthony Ruggiero

City Council Workshop Agenda
July 31, 2017
7:00 PM

Workshop Agenda Items:

1. South Avenue Bridge
2. Bus Shelter Art Project Update
3. Leggette Brashears and Graham Update on Bedrock Well Drilling
4. New York Leak Detection Proposal
5. Water System Evaluation Study - Engineering Services
6. Discussion of Proposed Building Moratorium
7. Budget Amendments
8. Confirming the Chairmanship of the Conservation Advisory Committee

Executive Session:

1. Matters Pertaining to Personnel
2. Discussion of the Proposed Sale of City-Owned Real Property

City of Beacon Workshop Agenda
7/31/2017

Title:

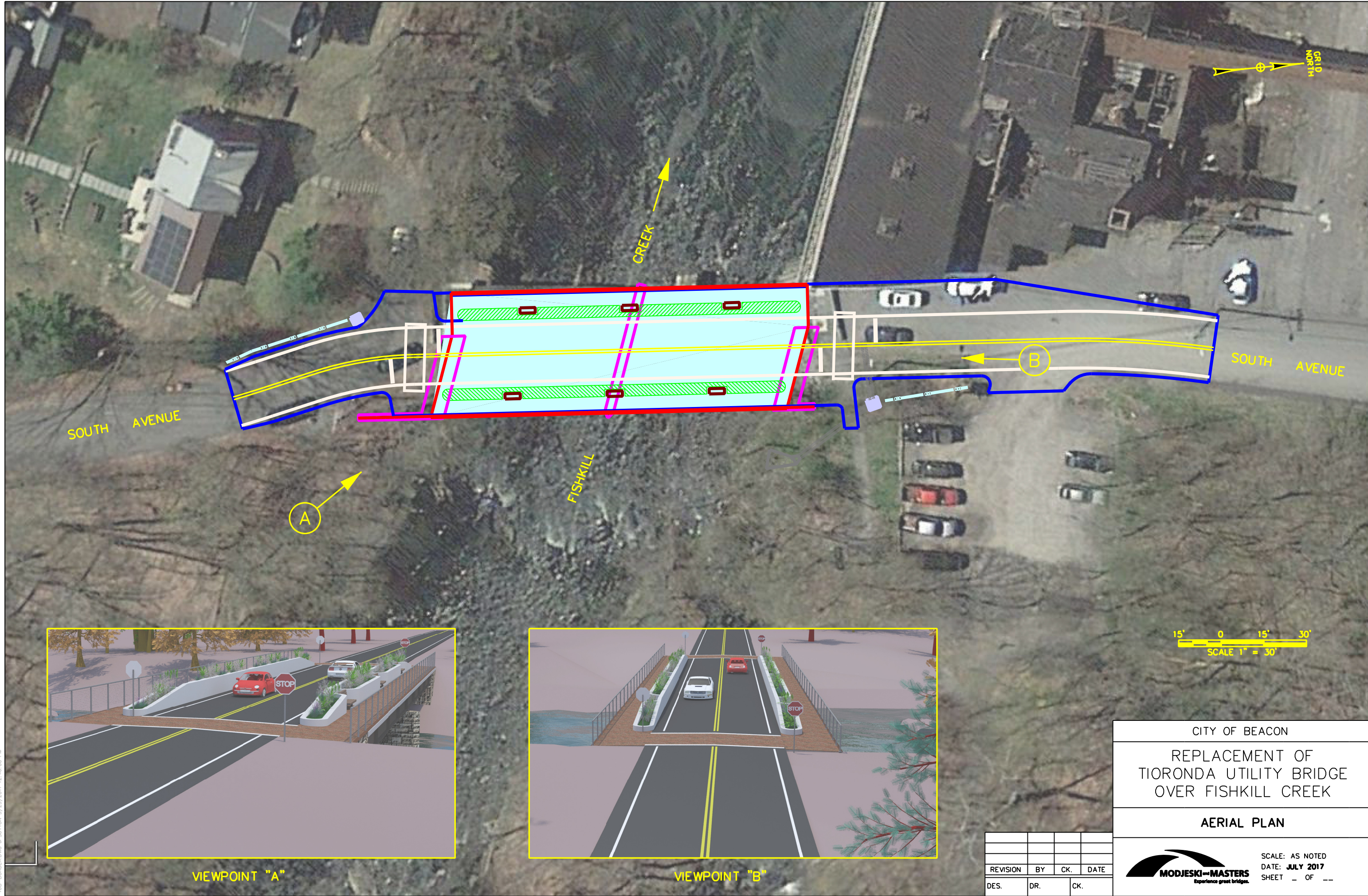
South Avenue Bridge

Subject:

Background:

ATTACHMENTS:

Description	Type
Aerial Plan	Plans
South Ave Bridge	Plans
Rendering 1	Plans
Rendering 2	Plans



TUB-BORDER.DWG _P\$UTTON 3/23/2011 12:46:00 PM

VIEWPOINT "A"


VIEWPOINT "B"

REVISION	BY	CK.	DATE
DES.	DR.	CK.	

CITY OF BEACON

REPLACEMENT OF
TIORONDA UTILITY BRIDGE
OVER FISHKILL CREEK

AERIAL PLAN



SCALE: AS NOTED
DATE: JULY 2017
SHEET _ OF _

P. I. STA 9+67.52
 $\Delta = 16^\circ 31' 14''$ RT
 $D_c = 45^\circ 50' 12''$
 $R_c = 125.00'$
 $L_c = 36.04'$
NORMAL CROWN

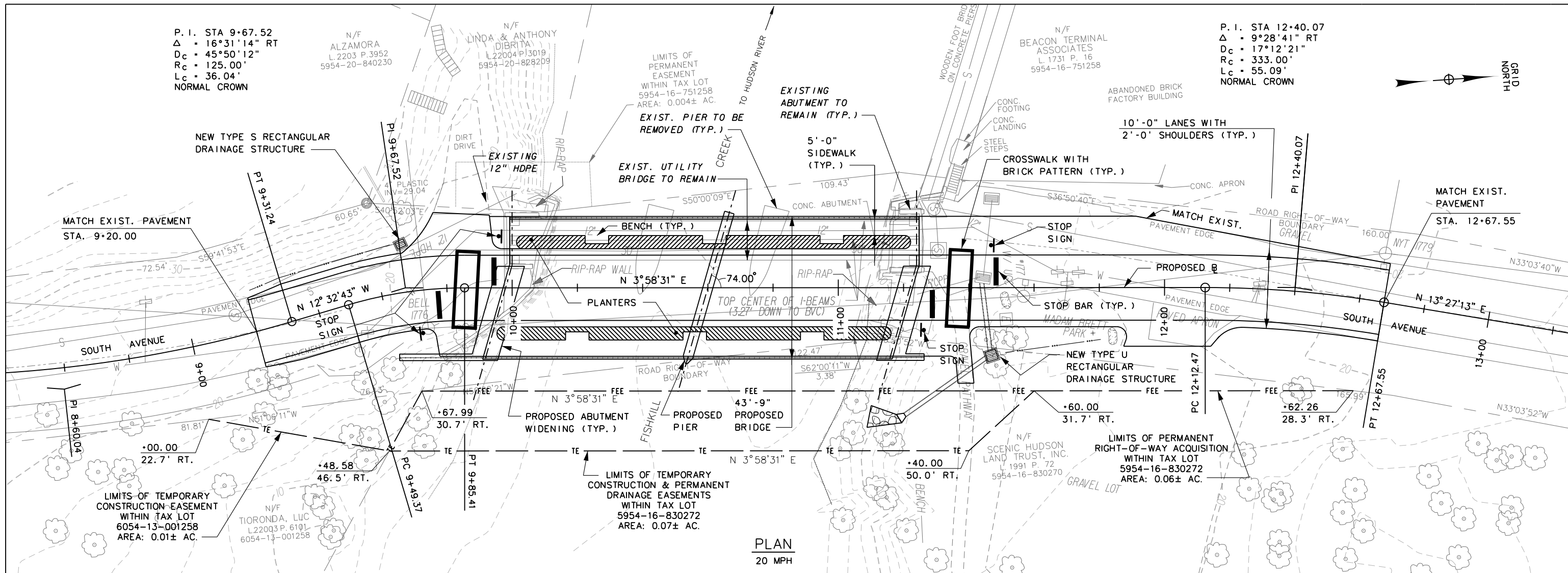
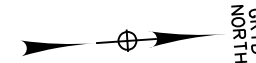
N/F
ALZAMORA
L 2203 P. 3952
5954-20-840230

N/F
LINDA & ANTHONY
(DIBRITA)
L 22004 P. 3019
5954-20-828209

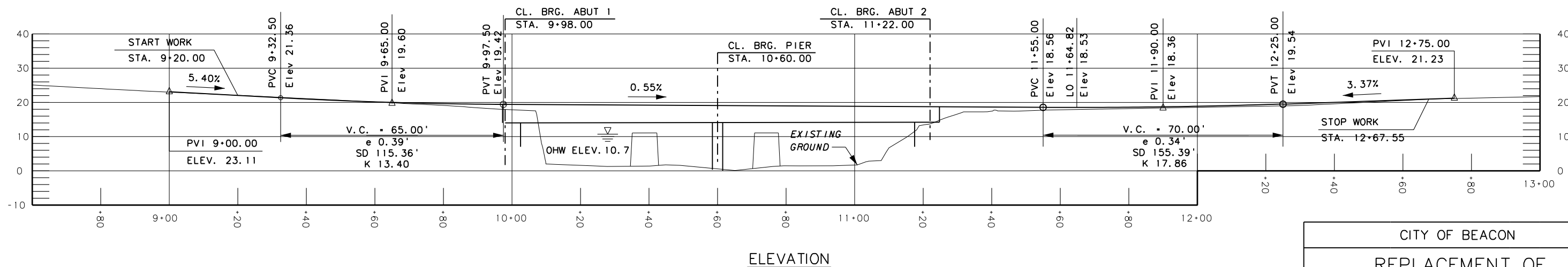
LIMITS OF
PERMANENT
EASEMENT
WITHIN TAX LOT
5954-16-751258
AREA: 0.004± AC.

N/F
BEACON TERMINAL
ASSOCIATES
L 1731 P. 16
5954-16-751258

P. I. STA 12+40.07
 $\Delta = 9^\circ 28' 41''$ RT
 $D_c = 17^\circ 12' 21''$
 $R_c = 333.00'$
 $L_c = 55.09'$
NORMAL CROWN



PLAN
20 MPH



15' 0 15' 30'
SCALE 1" = 30'

CITY OF BEACON

REPLACEMENT OF
TIORONDA UTILITY BRIDGE
OVER FISHKILL CREEK

GENERAL PLAN & ELEVATION

REVISION	BY	CK.	DATE
DES. MDH	DR. MDH	CK. --	



SCALE: AS NOTED
DATE: JULY 2017
SHEET -- OF --





City of Beacon Workshop Agenda
7/31/2017

Title:

Bus Shelter Art Project Update

Subject:

Background:

City of Beacon Workshop Agenda
7/31/2017

Title:

Leggette Brashears and Graham Update on Bedrock Well Drilling

Subject:

Background:

ATTACHMENTS:

Description

LBG letter re Drilling

Type

Cover Memo/Letter

LEGGETTE, BRASHEARS & GRAHAM, INC.

PROFESSIONAL GROUNDWATER AND ENVIRONMENTAL ENGINEERING SERVICES

4 RESEARCH DRIVE, SUITE 204
SHELTON, CT 06484
(203) 929-8555
FAX (203) 926-9140
www.lbgweb.com

June 20, 2017

Mr. Edward Balicki
Chief Operator, City of Beacon
1 Municipal Plaza, Suite 1
Beacon, NY 12508

Via Electronic Transmission

RE: Bedrock Well Drilling on Existing Water
Treatment Plant Property
Beacon, New York

Dear Mr. Balicki:

The following is a summary of the bedrock well drilling work completed on the existing Water Treatment Plant property on Liberty Street. The Water Treatment Plant property was identified as a target parcel for drilling because the underlying bedrock geology appeared favorable to produce high-yielding wells. Existing geologic map information and bedrock outcrops in the area indicated that the underlying bedrock types in the region were shales and limestone and there was a bedrock contact and inactive fault mapped close to the Water Treatment Plant property, all of which are favorable geologic features for targeting high-yielding bedrock wells. The Water Treatment Plant property was also an economically favorable alternative for conducting bedrock groundwater exploration because the municipality already owns the property, which eliminated the need to obtain property access rights from a third-party owner, and the close proximity of the existing treatment facility also would result in a significantly lower cost to connect the new well to the system compared to a well drilled at a more remote location.

Site layout information was obtained from drawings provided to LBG from the City. Using these drawings and some additional survey work conducted by Lanc & Tully Engineering, a site survey was prepared for use in obtaining well site approval from the Dutchess County Department of Health (DCDH) for the proposed test well location. Based on the completed site survey, Leggette, Brashears & Graham, Inc. (LBG) was only able to site one well on the treatment plant property that met all of the minimum offset distance requirements listed in the New York State Sanitary Code Part 5, Subpart 5-1, Appendix 5D.

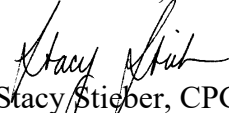
Once the DCDH issued well site approval, Turnbull Drilling, Inc. was contracted to complete the well. The well was drilled using 8-inch diameter casing. Bedrock was encountered at approximately 12 feet below grade (ft bg) and the 8-inch diameter well casing was set to a depth of 100 ft bg. The bedrock encountered below the surface was limestone from 12 ft bg

down to about 125 ft bg. At 125 ft bg the rock type changed to a granitic rock type. This granitic rock continued from 125 ft bg down to 500 ft bg. At 500 ft bg the bedrock turned into shale, and the shale bedrock continued down to the well's final depth of 625 ft bg. No significant water-bearing fractures were encountered any of the bedrock formations (limestone, granitic rock or shale) and the contacts between the rock types did not yield any significant water. The estimated yield of the well at completion was about 5 gallons per minute (gpm).

At this time, the completion of a 72-hour pumping test is not warranted because the well did not produce sufficient yield to pursue as a potable water-supply well. Based on the current options available, LBG is recommending that groundwater exploration at the Pump Road Road parcel be pursued. The June 10, 2016 work scope describing the proposed groundwater exploration on the parcel is attached.

Very truly yours,

LEGGETTE, BRASHEARS & GRAHAM, INC.


Stacy Stieber, CPG
Associate/Hydrogeologist

Affirmed by:



Thomas P. Cusack, CPG
Senior Vice President

SS:nv

Attachment

H:\City of Beacon\2017\Drilling Summary letter.doc

ATTACHMENT

LEGGETTE, BRASHEARS & GRAHAM, INC.

PROFESSIONAL GROUNDWATER AND ENVIRONMENTAL ENGINEERING SERVICES

4 RESEARCH DRIVE, SUITE 204
SHELTON, CT 06484
(203) 929-8555
FAX (203) 926-9140
www.lbgweb.com

June 10, 2016

Mr. Edward Balicki
Chief Operator, City of Beacon
1 Municipal Plaza, Suite 1
Beacon, NY 12508

Via Electronic Transmission

RE: Sand and Gravel Aquifer
Groundwater Exploration Program
Beacon, New York

Dear Mr. Balicki:

Leggette, Brashears & Graham, Inc. (LBG) is pleased to provide you this work scope and cost estimate for the completion of a sand and gravel aquifer groundwater exploration program to develop additional groundwater sources for the City of Beacon, New York. Groundwater exploration of the sand and gravel aquifer underlying the Pump House Road parcel is proposed to assess the yield potential of the aquifer. Small diameter test borings using the drive and wash drilling method will be completed to assess the depth of the formation, the saturated thickness, and the coarseness and stratigraphy of the aquifer material. If suitable sand and gravel is encountered, small diameter test wells will be installed in the borings and short-term yield tests conducted to estimate aquifer parameters and the potential yield of a full-scale sand and gravel production well. In addition to the groundwater exploration, LBG will evaluate the existing water distribution pipe system from the existing bedrock Wells 1 and 2 to determine whether pipe size restriction (or friction loss) may be the cause of the reduction in yield which occurs when Wells 1 and 2 are pumped concurrently. This pipe size restriction evaluation can be completed at no additional cost to the City of Beacon.

LBG will begin by selecting test boring drilling locations based on New York State Department of Health (NYSDOH) well siting requirements and the presence of potential wetland and flood plain features on the site. For this proposal it is assumed that existing site maps will be sufficient to determine appropriate test well site locations and that clearing of access roads for the drill rig can be completed by the City of Beacon if needed.

The results of the sand and gravel groundwater exploration will be used to determine whether the property is suitable for sand and gravel production well development and provide the necessary information to assess the cost for construction, testing, and permitting of a full-sized sand and gravel production well. If the sand and gravel aquifer is not considered suitable, drilling additional bedrock wells is a favorable alternative. The cost for drilling and testing new bedrock wells on the Pump House Road property would be similar to those presented in LBG's June 10, 2016 proposal "Bedrock Well Drilling on Existing Water Treatment Plant Property".

LBG Tasks

Assist in preparation of bid documents for selection of Well Drilling Contractor if needed; coordination of drilling activities with Well Drilling Contractor and City of Beacon, conduct site visit to stake test boring locations and determine access requirements.....\$1,500

Conduct oversight of drilling of 4 to 6 test borings and installation of up to 6 small-diameter test wells, oversight of short-term yield tests at two well locations (assumes 6 to 8 field days)..... \$4,000-\$5,500

Process data collected during drilling program, includes conducting sieve analyses on formation samples collected, processing water-level data from short-term yield tests, calculation of aquifer parameters and potential yield, and theoretical design of a full-sized sand and gravel production well..... \$2,000-\$2,500

LBG Total \$7,500-\$9,500

Subcontractor Tasks

Well Drilling Contractor:

Completion of 4 to 6 test borings to depth of 80 feet to 100 feet; installation of up to 6 small-diameter test wells; conduct short-term yield tests on two wells..... \$31,000-\$52,000^{1/}

Subcontractor Total..... \$31,000-\$52,000

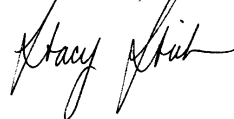
^{1/} Prevailing wages have been used in generate estimate.....

Total Cost Estimate..... \$38,500-\$61,500

LBG can begin work immediately upon receipt of the signed Quick Start Contract.
Should you have any questions, please do not hesitate to contact me directly at (475) 882-1723.

Very truly yours,

LEGGETTE, BRASHEARS & GRAHAM, INC.



Stacy Stieber, CPG
Associate/Hydrogeologist

Affirmed by:



Thomas P. Cusack, CPG
Senior Vice President

SS:cmm

Enclosures

H:\PROPOSAL\2016\ (C) Beacon City-Sand, Gravel Aquifer.doc

ATTACHMENTS

The Stephen B. Church Company
49 Great Hill Road
Oxford, CT
Since 1886

May 24, 2016

E mail to Leggette, Brashears, and Graham
Attention: Stacy Stieber
Shelton, CT
Phone 203-929-8555
E-mail SStieber@lbgct.com

From Jim Duncan
The Stephen B Church Co
Oxford, CT
Phone 203-888-2132
E-mail stephenbch@aol.com

Re: Test Well Drilling – Beacon, NY

Dear Stacy –

With this e mail, we wish to provide you with our proposal for test well drilling in Beacon, New York.

We understand that you would like four test wells drilled to depths estimated at 80 to 100 feet, with up to two adjacent sister wells. We also understand that you would like one or two pump tests of six hours duration after the completion of the drilling.

We propose to do this work on a time and materials basis with a drive and wash rig. We normally use a three man crew for this work. The drilling sites need to be level, clear, and accessible to truck mounted equipment. We also need a source of water within 200 feet of the drilling locations for our use during the field operation.

Unit prices and estimated quantities are as follows:

Mobilization	1	lump sum at	600.00	each
Rig and crew	6 to 10	days at	3650.00	per day
Extra heavy pipe	300 to 540	feet at	26.00	per foot
5 foot screens	4 to 12	each at	150.00	each
Drive shoes	4 to 6	each at	40.00	each

The estimated cost for the field work is \$31,000 to \$52,200. Prices quoted do not include the use of a water truck. A water truck can be provided for an additional \$250 per day.

We would ask for a site plan with the well sites marked. We would also ask the owner to secure proper underground utility clearance before starting this work.

We assume that we would be required to pay prevailing wages. Prices quoted include our standard insurance coverage.

Thank you for asking us to quote on this project. If you have any questions, please feel free to call.

Very truly yours,

Jim Duncan

QUICK START CONTRACT

This agreement for the performance of services is entered into this 10th day of June, 2016, by and between Leggette, Brashears & Graham, Inc. (LBG) and City of Beacon (Client). Subject to the contract terms printed on the reverse side of this form, LBG's standard fee schedule and the annexed proposal or scope of work. In the event of a conflict between the standard contract terms or fee schedule and any attached proposal or scope of work, terms of the proposal or scope shall govern.

CLIENT

Name: Mr. Edward Balicki
Company: City of Beacon
Address: 1 Municipal Plaza, Suite 1
City/State/Zip: Beacon, NY 12508

CLIENT CONTACTS

Reporting: Mr. Edward Balicki
Site Conditions: Mr. Edward Balicki

BILLING INFORMATION

Name: Mr. Edward Balicki
Company: City of Beacon
Address: 1 Municipal Plaza, Suite 1
City/State/Zip: Beacon, NY 12508

Project Location: **Street:** _____ **City:** Beacon **State:** NY
Proposal/Scope Date and Reference No.: June 10, 2016 **#Pages Attached:** 3

Brief Statement of Services: Sand and gravel aquifer exploration on Pump House Road parcel.

Anticipated Start Date: To be determined **Anticipated Completion Date:** To be determined
Preliminary Cost Estimate: \$7,500-\$9,500 (LBG Costs Only)

LBG Office Location: Shelton, CT **Project Representative:** Stacy Stieber
Principal-in-Charge: Thomas P. Cusack
Retainer: Waived

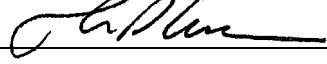

Client hereby engages LBG to perform the services described and referred to herein and agrees to pay LBG for such services, and acknowledges that the terms of this agreement are subject to LBG's standard contract terms and all attached and referenced material and documents. Unless otherwise provided in the attached proposal or scope: (1) inclusion of anticipated "start" and "completion" dates shall not be construed to impose a "time is of the essence" requirement; and (2) any preliminary cost estimate shall not be construed as a "flat-fee" or "not-to-exceed" amount. In consideration of the foregoing, LBG agrees to perform the services described and referenced herein.

CITY OF BEACON

LEGGETTE, BRASHEARS & GRAHAM, INC.

CLIENT

By: (signature) _____
(printed) _____
Title: _____
Date: _____
Witness: _____

By: (signature) 
(printed) Thomas P. Cusack
Title: Senior Vice President
Date: June 10, 2016
Witness: 

GENERAL TERMS AND CONDITIONS

FEE PAYMENT

- 1) LBG will submit invoices to Client monthly following any month of significant activity, and a final invoice upon completion of services. Invoices will show charges based on current LBG Fee Schedules or other agreed-upon basis, and will include a detailed separation of charges and supporting information.
- 2) Payment is due upon receipt of invoice. On accounts past due by forty-five (45) days, Client will pay a finance charge of 1.25 percent per month dating from the invoice date.
- 3) In the event Client requires expert-witness testimony, Client will pay LBG all past due balances before LBG will proceed to prepare for or offer testimony.
- 4) Client will pay the balance stated on the invoice unless Client notifies LBG of the particular item that is alleged to be incorrect within fifteen (15) days from the invoice date. Client will remit the balance of undisputed items in a timely manner while a disputed item is being reviewed.
- 5) In the event Client fails to pay LBG within forty-five (45) days following invoice date, LBG may consider the default a breach of the consulting agreement and all duties of LBG may be suspended or terminated, and work product may be withheld, without liability of any kind to LBG.

OWNERSHIP OF DOCUMENTS AND CONFIDENTIALITY

- 1) All reports, field data and notes, laboratory test data, calculations, estimates, and other documents prepared in the course of consulting service shall remain the property of LBG. Client agrees that all reports and other work LBG furnished to Client or Client's agents which are not paid for, will be returned upon demand and will not be used for any purpose whatsoever.
- 2) Documents provided to LBG by Client will be returned to Client, upon request, at the completion of work at Client's cost.
- 3) Reuse of reports or other materials by Client or others on extensions or modifications of the project or on other sites, without written permission from LBG or adaptation by LBG for the specific purpose intended, shall be at the user's sole risk, without liability on the part of LBG, and Client agrees to indemnify and hold LBG harmless from all claims, damages and expenses, including attorney's fees.
- 4) LBG shall maintain Client's project data and reports in strictest confidence, and will release such information to others only upon express written permission from Client.

DISPUTES

- 1) Client will pay all reasonable collection expenses or litigation fees, including attorney fees, that LBG incurs in collecting any delinquent amount Client owes.
- 2) If the Client institutes a suit against LBG which is dismissed or for which judgement is rendered for LBG, Client will pay LBG for all costs of defense including attorney fees, expert witness fees and court costs.

INSURANCE AND INDEMNIFICATION

- 1) LBG will carry Workers Compensation, General Liability, Automobile Liability, Excess Umbrella-Form Liability and Professional Liability insurance policies in amounts which LBG considers adequate. Certificates of insurance will be provided to Client upon request. Within the terms and conditions of the insurance, LBG agrees to indemnify Client against loss caused by actions of LBG, its employees or its subcontractors. LBG will not be responsible for liability beyond the limits and conditions of the insurance. At Client's request, LBG will seek additional insurance coverages or coverage limits for specific projects, and will bill Client for the additional premium cost. LBG will require that its field subcontractors are insured to the same levels required of LBG by Client.
- 2) LBG's professional liability will be limited to the value of the consulting services performed.
- 3) LBG will not be responsible for any loss or liability from negligence by Client or by other agents, contractors or consultants employed by Client or from negligence by any person for whose conduct we are not legally responsible.

TEST BORINGS AND OTHER EXPLORATIONS

- 1) To drill test borings or perform other explorations, LBG may engage a contractor experienced in this work. The Contractor's invoices plus a fifteen (15) percent service charge will be added to LBG's invoice. On occasion, LBG engages the specialized services of individual consultants or other companies to participate in a project. When considered necessary, these firms or other consultants will be used with Client's approval. The cost of such services plus a fifteen (15) percent service charge will be included in our invoice. Such specialists will be wholly responsible for their work product.

- 2) Alternatively, at Client's request, LBG will recommend contractor(s) or specialist(s) for Client to enter into direct contract(s) with. In that event, invoices for these outside services will be mailed to Client for direct payment to the contractor(s). LBG review and approval of each invoice will be provided on request. Under either alternative, LBG does not guarantee and is not responsible for the performance of the contractor(s) or the accuracy of their results.

GEOPHYSICAL AND GEOCHEMICAL INSTRUMENTATION SERVICES

LBG is equipped to provide specialized geophysical and geochemical instrumentation services according to project needs. Fees for these equipment services will be based on use charges at standard rates published by LBG plus fees for consulting services.

CUSTODY OF MATERIALS

- 1) In the course of work, LBG may take custody of and transport soil and/or water samples from Client's site. Upon the completion of evaluation and/or testing of such samples, LBG reserves the right to return the samples to Client at Client's expense, and Client agrees to accept such samples and the responsibility for their proper and legal disposal.
- 2) At no time, under any circumstances, will LBG personnel represent LBG or themselves as generators of waste, hazardous or otherwise, which may have to be removed from or disposed of on a site, and LBG personnel will not sign hazardous waste manifests on behalf of Client.

RIGHT OF ENTRY

Client will furnish right-of-entry on the site for LBG to conduct the work. LBG will take reasonable precautions to minimize damage to the land from use of equipment, but has not included in the fee the cost for restoration of damage that may result from site operations. If LBG is required to restore the land to its former condition, this will be arranged and the cost plus fifteen (15) percent will be added to our fee.

DAMAGE TO SUBSURFACE STRUCTURES

Reasonable care will be exercised in locating subsurface structures in the vicinity of proposed subsurface explorations. This will include contact with the local agency coordinating subsurface utility information (i.e., "Call Before You Dig" service) and a review of plans provided by Client for the site to be investigated. LBG shall rely upon any information provided by Client or Client's agent or representative. If the locations of underground structures are not known accurately or cannot be confirmed, then there will be a degree of risk to Client associated with conducting the work. In the absence of confirmed underground structure locations, Client agrees to accept the risk of damage and possible costs associated with repair and restoration of damage resulting from the exploration work.

PETROLEUM PRODUCTS AND HAZARDOUS MATERIALS

- 1) Petroleum products, hazardous materials, or asbestos may exist at a site where there is no reason to believe they should be present. If, at any time, evidence of the existence or possible existence of such substances is discovered, LBG reserves the right to renegotiate any consulting agreement, the fees for our services and our continued involvement in the project. LBG will notify Client as soon as possible should unanticipated hazardous materials or suspected hazardous materials be discovered.
- 2) The discovery of hazardous materials or suspected hazardous materials may make it necessary for LBG to take immediate measures to protect human health and safety and/or the environment. Client agrees to compensate LBG for the cost of any and all measures that, in our professional onsite judgment are justified to preserve and protect the health and safety of our personnel, Client's employees and/or the public, and/or the environment. In addition, Client waives any claims against LBG and, to the full extent permitted by law, agrees to indemnify, defend and hold LBG harmless from any and all claims, damages and liability, including but not limited to cost of defense, in any way connected with petroleum products, hazardous materials or asbestos.

STANDARD OF CARE

In accepting our proposal for consulting services, Client acknowledges the inherent risks associated with any subsurface investigation. In performing professional services, LBG will use that degree of care and skill ordinarily exercised under similar circumstances by members of the profession practicing in the same or similar localities. LBG makes no express or implied warranty beyond our commitment to conform to this high standard of professional practice.

LEGGETTE, BRASHEARS & GRAHAM, INC.

PROFESSIONAL GROUNDWATER AND ENVIRONMENTAL ENGINEERING SERVICES

4 RESEARCH DRIVE, SUITE 204
SHELTON, CT 06484
(203) 929-8555
FAX (203) 926-9140
www.lbgweb.com

2016 FEE SCHEDULE FOR CONSULTING SERVICES

Senior Vice President	\$235/hour
Vice President/Principal	\$235/hour
Associate Vice President	\$225/hour
Senior Consultant	\$235/hour
Senior Associate	\$185/hour
Associate	\$130 to \$162/hour
Senior Environmental Engineer	\$153/hour
Senior Hydrogeologist/Environmental Scientists	\$112/hour
Environmental Engineer II	\$93/hour
Hydrogeologist II/Environmental Scientist II	\$87/hour
Environmental Engineer I	\$80/hour
Hydrogeologist I/Environmental Scientist I	\$76/hour
Senior Technician	\$75/hour
Technician	\$70/hour
CAD Operator/Draftsperson	\$95/hour
Clerical	\$75/hour

We require reimbursement for actual expenses incurred, including computer time. The use of personal cars in the field would be billed at the IRS approved rate per mile. An administrative charge of 5-percent is affixed to actual expenses and 15-percent for subcontractors. A 2-percent charge on services will be included to cover telephone, facsimile and in-house printing costs.

Invoices are payable upon receipt; accounts unpaid more than 45 days after the billing date are subject to 1.25-percent interest per month (15-percent annual rate) from the invoice date.

Fees for pretrial conferences and expert-witness testimony are as quoted above, with no premium fees.

LEGGETTE, BRASHEARS & GRAHAM, INC.
2016 FEE SCHEDULE FOR EQUIPMENT USE

<u>ITEM</u>		<u>DAILY RATE*</u>
INSTRUMENTATION		
Turbidity meter	\$	35
Conductivity meter	\$	20
pH meter	\$	20
Conductivity/pH meter	\$	35
Dissolved oxygen meter	\$	50
Flow-Through Cell	\$	150
Photoionization detector	\$	100
Flame ionization detector	\$	120 Combustible gas
(LEL)/oxygen meter	\$	60
Gas detector tube system	\$	16
Oil/water interface tape	\$	65
Electric water-level indicator	\$	35
Multi-Channel Data logger	\$	75
Transducers	\$	30 each
In-Well Data logger/Tranducer	\$	90
Barotroll	\$	90
Surveying Equipment	\$	100
Air velocity meter	\$	80
Magnehelic gauges	\$	20
GPS Receiver (Trimble)	\$	150
Trimble Transducer Connection	\$	50
Trimble GPS/Transducer Connection	\$	200
Timble External Antenna	\$	75
Laptop Computer Transducer Connection	\$	50
Dust Monitor	\$	110
PID/LEL/02 meter	\$	100/day; 300/week
SAMPLING EQUIPMENT		
Two-inch air or electric submersible pumps	\$	115
Four-inch submersible pump	\$	75
Powered suction pump	\$	50
Peristaltic pump	\$	30
Hand-operated suction pump	\$	15
Teflon or stainless-steel bailers	\$	10 each
Manually operated soil/sediment sampling equipment (hand augers, sludge samplers)	\$	25
Soil vapor sampling equipment (probes, slide hammer) (consumable items additional)	\$	30
GEOPHYSICAL EQUIPMENT		
Electromagnetic terrain conductivity (EM-31) instrument and recorder	\$	100
Very low frequency electromagnetic receiver	\$	100
Signal-enhancement single channel seismograph	\$	50
Downhole video logger	\$	500
Borehole geophysical logger	\$	400
Magnetic cable indicator	\$	45
Metal detector	\$	20
MISCELLANEOUS		
Digital Camera	\$	15
Generator	\$	75
Rotary hammer drill	\$	60
Sediment gradation or hydrometer equipment	\$	10/sample
Van or truck for transport of equipment	\$	25/day + 0.65/mile
Jon Boat	\$	75/day
Laptop Computer Use In Field	\$	35/day

- Consumable materials (disposable bailers, filters, tubing, etc.) at cost.

Other specialty equipment by quote.

WEEKLY RATE IS THREE TIMES DAILY RATE, MONTHLY RATE IS THREE TIMES WEEKLY RATE.

City of Beacon Workshop Agenda
7/31/2017

Title:

New York Leak Detection Proposal

Subject:

Background:

ATTACHMENTS:

Description	Type
NY Leak Detection Proposal	Cover Memo/Letter



December 29, 2016

City of Beacon
Attn: Ed Balicki
1 Municipal Plaza, Suite 4
Beacon, NY 12508
845-831-7130 (Sewer P)
ebalicki@cityofbeacon.org

RE: Proposal - Leak Detection Service
City of Beacon, Beacon, New York

Dear Mr. Balicki:

Thank you for contacting NYLD to provide leak detection services for the City of Beacon Water Dept. water distribution system.

New York Leak Detection, Inc. (hereafter referred to as NYLD) was organized to provide the best professional **water leak detection services, fire flow testing, utility location, survey grade utility mapping, video inspection, data logging, and ground penetrating radar technology** under one roof. NYLD is active in instructing and exhibiting leak detection and location services for the New York Rural Water Association, American Water Works Association and private water companies throughout the East Coast.

NYLD will conduct a comprehensive survey and, when appropriate, will perform the survey at night to minimize the effect of daytime usage and provide a higher degree of accuracy. The final leak survey report is a complete, easy-to-read summary of leaks detected and organized according to Type, Location, Estimated Gallons of Loss, and Priority Classification. NYLD ensures its clients will receive a complete and professional survey.

The cost for a comprehensive leak detection survey and report on approximately 50 miles of water distribution system at \$120.00 per mile is \$6,000.00.

*Estimate only – NYLD has calculated costs based on the information and maps provided by the customer. Final billing will be made using actual days on site, multiplied by the day rate. The actual quantities may vary from those given depending on several factors beyond NYLD's control. If during the execution of the work, NYLD anticipates changes which would impact the estimated cost, NYLD will estimate the additional service and contemporaneously seek the customer's authorization of the changes.

NYLD will provide one Subsurface Specialist and all state-of-the-art electronics including: Ground Penetrating Radar 250 MHz (0'-30' depths), 500 MHz (0'-6' depths), 1000 MHz (0'-2' depths), Profiler EMP-400 (electromagnetic induction sensor), variable wattage magnetometers, video inspection with locatable heads, computerized electronic acoustic leak locators, 350' fiberglass rods with sonde transmitters (15' and 40' depth potential), and all necessary support tools.

Surveying and Mapping Equipment include: Leica 780862 R400 Total Station with Power Search & Automatic Target Aiming, Leica 772300 RH15 Radio Handle with Integrated Radio Modem and Radio Antenna, Leica 781600 CS15 3.5G & Radio Field Controller, Leica GNSS Smart Antenna Geodetic 120 channels, and Carlson/AutoCAD 2011 software. Crossover technologies are maximized to ensure the highest degree of accuracy on all location projects.

[NYLD's new technology, new service - JD7 Pipeline Assessment Solution. Click for more details.](#)

Should you have any questions, you may contact me via e-mail or at the phone/fax numbers provided below. Thank you for the opportunity to submit this proposal.

Sincerely,

Mark Manzari
Vice President
Director of Operations

Phone (315) 469-4601 • Toll Free (800) 928-4350 • Fax (315) 469-2868
PO Box 269 Jamesville, NY 13078 • www.nyld.com • info@nyld.com



Please acknowledge your acceptance of this proposal by signing below and returning to NYLD.

Print Name

Date

Signature of Authorized Party

Pricing is valid for 30 days from date of proposal.

Recognizing that underground leak detection and utility locating is an art as well as a science, and that there are innumerable variables in achieving the desired results, NYLD does not guarantee accuracy in locating underground leaks or utilities, and disclaims all liability for any damages based on information provided by NYLD.

NYLD strives to provide the highest quality service with the experience of the technicians and equipment used. It is our desire that our work provides our customers with the information they need without adverse consequences.

City of Beacon Workshop Agenda
7/31/2017

Title:

Water System Evaluation Study - Engineering Services

Subject:

Background:

ATTACHMENTS:

Description	Type
Water System OBG	Cover Memo/Letter
Water System OBG spreadsheet	Backup Material
Water System LBG Gravel	Cover Memo/Letter
Water System LBG Hydro	Cover Memo/Letter
Water System HDR	Cover Memo/Letter
Water System B&L	Cover Memo/Letter
Water System Eval LBG Proposal	Cover Memo/Letter

LEGGETTE, BRASHEARS & GRAHAM, INC.

PROFESSIONAL GROUNDWATER AND ENVIRONMENTAL ENGINEERING SERVICES

4 RESEARCH DRIVE, SUITE 204
SHELTON, CT 06484
(203) 929-8555
FAX (203) 926-9140
www.lbgweb.com

June 10, 2016

Mr. Edward Balicki
Chief Operator, City of Beacon
1 Municipal Plaza, Suite 1
Beacon, NY 12508

Via Electronic Transmission

RE: Sand and Gravel Aquifer
Groundwater Exploration Program
Beacon, New York

Dear Mr. Balicki:

Leggette, Brashears & Graham, Inc. (LBG) is pleased to provide you this work scope and cost estimate for the completion of a sand and gravel aquifer groundwater exploration program to develop additional groundwater sources for the City of Beacon, New York. Groundwater exploration of the sand and gravel aquifer underlying the Pump House Road parcel is proposed to assess the yield potential of the aquifer. Small diameter test borings using the drive and wash drilling method will be completed to assess the depth of the formation, the saturated thickness, and the coarseness and stratigraphy of the aquifer material. If suitable sand and gravel is encountered, small diameter test wells will be installed in the borings and short-term yield tests conducted to estimate aquifer parameters and the potential yield of a full-scale sand and gravel production well. In addition to the groundwater exploration, LBG will evaluate the existing water distribution pipe system from the existing bedrock Wells 1 and 2 to determine whether pipe size restriction (or friction loss) may be the cause of the reduction in yield which occurs when Wells 1 and 2 are pumped concurrently. This pipe size restriction evaluation can be completed at no additional cost to the City of Beacon.

LBG will begin by selecting test boring drilling locations based on New York State Department of Health (NYSDOH) well siting requirements and the presence of potential wetland and flood plain features on the site. For this proposal it is assumed that existing site maps will be sufficient to determine appropriate test well site locations and that clearing of access roads for the drill rig can be completed by the City of Beacon if needed.

The results of the sand and gravel groundwater exploration will be used to determine whether the property is suitable for sand and gravel production well development and provide the necessary information to assess the cost for construction, testing, and permitting of a full-sized sand and gravel production well. If the sand and gravel aquifer is not considered suitable, drilling additional bedrock wells is a favorable alternative. The cost for drilling and testing new bedrock wells on the Pump House Road property would be similar to those presented in LBG's June 10, 2016 proposal "Bedrock Well Drilling on Existing Water Treatment Plant Property".

LBG Tasks

Assist in preparation of bid documents for selection of Well Drilling Contractor if needed; coordination of drilling activities with Well Drilling Contractor and City of Beacon, conduct site visit to stake test boring locations and determine access requirements.....\$1,500

Conduct oversight of drilling of 4 to 6 test borings and installation of up to 6 small-diameter test wells, oversight of short-term yield tests at two well locations (assumes 6 to 8 field days)..... \$4,000-\$5,500

Process data collected during drilling program, includes conducting sieve analyses on formation samples collected, processing water-level data from short-term yield tests, calculation of aquifer parameters and potential yield, and theoretical design of a full-sized sand and gravel production well..... \$2,000-\$2,500

LBG Total \$7,500-\$9,500

Subcontractor Tasks

Well Drilling Contractor:

Completion of 4 to 6 test borings to depth of 80 feet to 100 feet; installation of up to 6 small-diameter test wells; conduct short-term yield tests on two wells..... \$31,000-\$52,000^{1/}

Subcontractor Total..... \$31,000-\$52,000

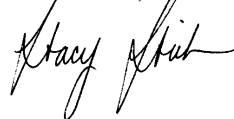
^{1/} Prevailing wages have been used in generate estimate.....

Total Cost Estimate..... \$38,500-\$61,500

LBG can begin work immediately upon receipt of the signed Quick Start Contract.
Should you have any questions, please do not hesitate to contact me directly at (475) 882-1723.

Very truly yours,

LEGGETTE, BRASHEARS & GRAHAM, INC.

A handwritten signature in black ink, appearing to read "Stacy Stieber".

Stacy Stieber, CPG
Associate/Hydrogeologist

Affirmed by:

A handwritten signature in black ink, appearing to read "Thomas P. Cusack".

Thomas P. Cusack, CPG
Senior Vice President

SS:cmm

Enclosures

H:\PROPOSAL\2016\ (C) Beacon City-Sand, Gravel Aquifer.doc

ATTACHMENTS

The Stephen B. Church Company
49 Great Hill Road
Oxford, CT
Since 1886

May 24, 2016

E mail to Leggette, Brashears, and Graham
Attention: Stacy Stieber
Shelton, CT
Phone 203-929-8555
E-mail SStieber@lbgct.com

From Jim Duncan
The Stephen B Church Co
Oxford, CT
Phone 203-888-2132
E-mail stephenbch@aol.com

Re: Test Well Drilling – Beacon, NY

Dear Stacy –

With this e mail, we wish to provide you with our proposal for test well drilling in Beacon, New York.

We understand that you would like four test wells drilled to depths estimated at 80 to 100 feet, with up to two adjacent sister wells. We also understand that you would like one or two pump tests of six hours duration after the completion of the drilling.

We propose to do this work on a time and materials basis with a drive and wash rig. We normally use a three man crew for this work. The drilling sites need to be level, clear, and accessible to truck mounted equipment. We also need a source of water within 200 feet of the drilling locations for our use during the field operation.

Unit prices and estimated quantities are as follows:

Mobilization	1	lump sum at	600.00	each
Rig and crew	6 to 10	days at	3650.00	per day
Extra heavy pipe	300 to 540	feet at	26.00	per foot
5 foot screens	4 to 12	each at	150.00	each
Drive shoes	4 to 6	each at	40.00	each

The estimated cost for the field work is \$31,000 to \$52,200. Prices quoted do not include the use of a water truck. A water truck can be provided for an additional \$250 per day.

We would ask for a site plan with the well sites marked. We would also ask the owner to secure proper underground utility clearance before starting this work.

We assume that we would be required to pay prevailing wages. Prices quoted include our standard insurance coverage.

Thank you for asking us to quote on this project. If you have any questions, please feel free to call.

Very truly yours,

Jim Duncan

QUICK START CONTRACT

This agreement for the performance of services is entered into this 10th day of June, 2016, by and between Leggette, Brashears & Graham, Inc. (LBG) and City of Beacon (Client). Subject to the contract terms printed on the reverse side of this form, LBG's standard fee schedule and the annexed proposal or scope of work. In the event of a conflict between the standard contract terms or fee schedule and any attached proposal or scope of work, terms of the proposal or scope shall govern.

CLIENT

Name: Mr. Edward Balicki
Company: City of Beacon
Address: 1 Municipal Plaza, Suite 1
City/State/Zip: Beacon, NY 12508

CLIENT CONTACTS

Reporting: Mr. Edward Balicki
Site Conditions: Mr. Edward Balicki

BILLING INFORMATION

Name: Mr. Edward Balicki
Company: City of Beacon
Address: 1 Municipal Plaza, Suite 1
City/State/Zip: Beacon, NY 12508

Project Location: **Street:** _____ **City:** Beacon **State:** NY
Proposal/Scope Date and Reference No.: June 10, 2016 **#Pages Attached:** 3

Brief Statement of Services: Sand and gravel aquifer exploration on Pump House Road parcel.

Anticipated Start Date: To be determined **Anticipated Completion Date:** To be determined
Preliminary Cost Estimate: \$7,500-\$9,500 (LBG Costs Only)

LBG Office Location: Shelton, CT **Project Representative:** Stacy Stieber
Principal-in-Charge: Thomas P. Cusack
Retainer: Waived

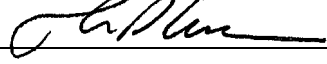

Client hereby engages LBG to perform the services described and referred to herein and agrees to pay LBG for such services, and acknowledges that the terms of this agreement are subject to LBG's standard contract terms and all attached and referenced material and documents. Unless otherwise provided in the attached proposal or scope: (1) inclusion of anticipated "start" and "completion" dates shall not be construed to impose a "time is of the essence" requirement; and (2) any preliminary cost estimate shall not be construed as a "flat-fee" or "not-to-exceed" amount. In consideration of the foregoing, LBG agrees to perform the services described and referenced herein.

CITY OF BEACON

LEGGETTE, BRASHEARS & GRAHAM, INC.

CLIENT

By: (signature) _____
(printed) _____
Title: _____
Date: _____
Witness: _____

By: (signature) 
(printed) Thomas P. Cusack
Title: Senior Vice President
Date: June 10, 2016
Witness: 

GENERAL TERMS AND CONDITIONS

FEE PAYMENT

- 1) LBG will submit invoices to Client monthly following any month of significant activity, and a final invoice upon completion of services. Invoices will show charges based on current LBG Fee Schedules or other agreed-upon basis, and will include a detailed separation of charges and supporting information.
- 2) Payment is due upon receipt of invoice. On accounts past due by forty-five (45) days, Client will pay a finance charge of 1.25 percent per month dating from the invoice date.
- 3) In the event Client requires expert-witness testimony, Client will pay LBG all past due balances before LBG will proceed to prepare for or offer testimony.
- 4) Client will pay the balance stated on the invoice unless Client notifies LBG of the particular item that is alleged to be incorrect within fifteen (15) days from the invoice date. Client will remit the balance of undisputed items in a timely manner while a disputed item is being reviewed.
- 5) In the event Client fails to pay LBG within forty-five (45) days following invoice date, LBG may consider the default a breach of the consulting agreement and all duties of LBG may be suspended or terminated, and work product may be withheld, without liability of any kind to LBG.

OWNERSHIP OF DOCUMENTS AND CONFIDENTIALITY

- 1) All reports, field data and notes, laboratory test data, calculations, estimates, and other documents prepared in the course of consulting service shall remain the property of LBG. Client agrees that all reports and other work LBG furnished to Client or Client's agents which are not paid for, will be returned upon demand and will not be used for any purpose whatsoever.
- 2) Documents provided to LBG by Client will be returned to Client, upon request, at the completion of work at Client's cost.
- 3) Reuse of reports or other materials by Client or others on extensions or modifications of the project or on other sites, without written permission from LBG or adaptation by LBG for the specific purpose intended, shall be at the user's sole risk, without liability on the part of LBG, and Client agrees to indemnify and hold LBG harmless from all claims, damages and expenses, including attorney's fees.
- 4) LBG shall maintain Client's project data and reports in strictest confidence, and will release such information to others only upon express written permission from Client.

DISPUTES

- 1) Client will pay all reasonable collection expenses or litigation fees, including attorney fees, that LBG incurs in collecting any delinquent amount Client owes.
- 2) If the Client institutes a suit against LBG which is dismissed or for which judgement is rendered for LBG, Client will pay LBG for all costs of defense including attorney fees, expert witness fees and court costs.

INSURANCE AND INDEMNIFICATION

- 1) LBG will carry Workers Compensation, General Liability, Automobile Liability, Excess Umbrella-Form Liability and Professional Liability insurance policies in amounts which LBG considers adequate. Certificates of insurance will be provided to Client upon request. Within the terms and conditions of the insurance, LBG agrees to indemnify Client against loss caused by actions of LBG, its employees or its subcontractors. LBG will not be responsible for liability beyond the limits and conditions of the insurance. At Client's request, LBG will seek additional insurance coverages or coverage limits for specific projects, and will bill Client for the additional premium cost. LBG will require that its field subcontractors are insured to the same levels required of LBG by Client.
- 2) LBG's professional liability will be limited to the value of the consulting services performed.
- 3) LBG will not be responsible for any loss or liability from negligence by Client or by other agents, contractors or consultants employed by Client or from negligence by any person for whose conduct we are not legally responsible.

TEST BORINGS AND OTHER EXPLORATIONS

- 1) To drill test borings or perform other explorations, LBG may engage a contractor experienced in this work. The Contractor's invoices plus a fifteen (15) percent service charge will be added to LBG's invoice. On occasion, LBG engages the specialized services of individual consultants or other companies to participate in a project. When considered necessary, these firms or other consultants will be used with Client's approval. The cost of such services plus a fifteen (15) percent service charge will be included in our invoice. Such specialists will be wholly responsible for their work product.

- 2) Alternatively, at Client's request, LBG will recommend contractor(s) or specialist(s) for Client to enter into direct contract(s) with. In that event, invoices for these outside services will be mailed to Client for direct payment to the contractor(s). LBG review and approval of each invoice will be provided on request. Under either alternative, LBG does not guarantee and is not responsible for the performance of the contractor(s) or the accuracy of their results.

GEOPHYSICAL AND GEOCHEMICAL INSTRUMENTATION SERVICES

LBG is equipped to provide specialized geophysical and geochemical instrumentation services according to project needs. Fees for these equipment services will be based on use charges at standard rates published by LBG plus fees for consulting services.

CUSTODY OF MATERIALS

- 1) In the course of work, LBG may take custody of and transport soil and/or water samples from Client's site. Upon the completion of evaluation and/or testing of such samples, LBG reserves the right to return the samples to Client at Client's expense, and Client agrees to accept such samples and the responsibility for their proper and legal disposal.
- 2) At no time, under any circumstances, will LBG personnel represent LBG or themselves as generators of waste, hazardous or otherwise, which may have to be removed from or disposed of on a site, and LBG personnel will not sign hazardous waste manifests on behalf of Client.

RIGHT OF ENTRY

Client will furnish right-of-entry on the site for LBG to conduct the work. LBG will take reasonable precautions to minimize damage to the land from use of equipment, but has not included in the fee the cost for restoration of damage that may result from site operations. If LBG is required to restore the land to its former condition, this will be arranged and the cost plus fifteen (15) percent will be added to our fee.

DAMAGE TO SUBSURFACE STRUCTURES

Reasonable care will be exercised in locating subsurface structures in the vicinity of proposed subsurface explorations. This will include contact with the local agency coordinating subsurface utility information (i.e., "Call Before You Dig" service) and a review of plans provided by Client for the site to be investigated. LBG shall rely upon any information provided by Client or Client's agent or representative. If the locations of underground structures are not known accurately or cannot be confirmed, then there will be a degree of risk to Client associated with conducting the work. In the absence of confirmed underground structure locations, Client agrees to accept the risk of damage and possible costs associated with repair and restoration of damage resulting from the exploration work.

PETROLEUM PRODUCTS AND HAZARDOUS MATERIALS

- 1) Petroleum products, hazardous materials, or asbestos may exist at a site where there is no reason to believe they should be present. If, at any time, evidence of the existence or possible existence of such substances is discovered, LBG reserves the right to renegotiate any consulting agreement, the fees for our services and our continued involvement in the project. LBG will notify Client as soon as possible should unanticipated hazardous materials or suspected hazardous materials be discovered.
- 2) The discovery of hazardous materials or suspected hazardous materials may make it necessary for LBG to take immediate measures to protect human health and safety and/or the environment. Client agrees to compensate LBG for the cost of any and all measures that, in our professional onsite judgment are justified to preserve and protect the health and safety of our personnel, Client's employees and/or the public, and/or the environment. In addition, Client waives any claims against LBG and, to the full extent permitted by law, agrees to indemnify, defend and hold LBG harmless from any and all claims, damages and liability, including but not limited to cost of defense, in any way connected with petroleum products, hazardous materials or asbestos.

STANDARD OF CARE

In accepting our proposal for consulting services, Client acknowledges the inherent risks associated with any subsurface investigation. In performing professional services, LBG will use that degree of care and skill ordinarily exercised under similar circumstances by members of the profession practicing in the same or similar localities. LBG makes no express or implied warranty beyond our commitment to conform to this high standard of professional practice.

LEGGETTE, BRASHEARS & GRAHAM, INC.

PROFESSIONAL GROUNDWATER AND ENVIRONMENTAL ENGINEERING SERVICES

4 RESEARCH DRIVE, SUITE 204
SHELTON, CT 06484
(203) 929-8555
FAX (203) 926-9140
www.lbgweb.com

2016 FEE SCHEDULE FOR CONSULTING SERVICES

Senior Vice President	\$235/hour
Vice President/Principal	\$235/hour
Associate Vice President	\$225/hour
Senior Consultant	\$235/hour
Senior Associate	\$185/hour
Associate	\$130 to \$162/hour
Senior Environmental Engineer	\$153/hour
Senior Hydrogeologist/Environmental Scientists	\$112/hour
Environmental Engineer II	\$93/hour
Hydrogeologist II/Environmental Scientist II	\$87/hour
Environmental Engineer I	\$80/hour
Hydrogeologist I/Environmental Scientist I	\$76/hour
Senior Technician	\$75/hour
Technician	\$70/hour
CAD Operator/Draftsperson	\$95/hour
Clerical	\$75/hour

We require reimbursement for actual expenses incurred, including computer time. The use of personal cars in the field would be billed at the IRS approved rate per mile. An administrative charge of 5-percent is affixed to actual expenses and 15-percent for subcontractors. A 2-percent charge on services will be included to cover telephone, facsimile and in-house printing costs.

Invoices are payable upon receipt; accounts unpaid more than 45 days after the billing date are subject to 1.25-percent interest per month (15-percent annual rate) from the invoice date.

Fees for pretrial conferences and expert-witness testimony are as quoted above, with no premium fees.

LEGGETTE, BRASHEARS & GRAHAM, INC.
2016 FEE SCHEDULE FOR EQUIPMENT USE

<u>ITEM</u>		<u>DAILY RATE*</u>
INSTRUMENTATION		
Turbidity meter	\$	35
Conductivity meter	\$	20
pH meter	\$	20
Conductivity/pH meter	\$	35
Dissolved oxygen meter	\$	50
Flow-Through Cell	\$	150
Photoionization detector	\$	100
Flame ionization detector	\$	120 Combustible gas
(LEL)/oxygen meter	\$	60
Gas detector tube system	\$	16
Oil/water interface tape	\$	65
Electric water-level indicator	\$	35
Multi-Channel Data logger	\$	75
Transducers	\$	30 each
In-Well Data logger/Tranducer	\$	90
Barotroll	\$	90
Surveying Equipment	\$	100
Air velocity meter	\$	80
Magnehelic gauges	\$	20
GPS Receiver (Trimble)	\$	150
Trimble Transducer Connection	\$	50
Trimble GPS/Transducer Connection	\$	200
Timble External Antenna	\$	75
Laptop Computer Transducer Connection	\$	50
Dust Monitor	\$	110
PID/LEL/02 meter	\$	100/day; 300/week
SAMPLING EQUIPMENT		
Two-inch air or electric submersible pumps	\$	115
Four-inch submersible pump	\$	75
Powered suction pump	\$	50
Peristaltic pump	\$	30
Hand-operated suction pump	\$	15
Teflon or stainless-steel bailers	\$	10 each
Manually operated soil/sediment sampling equipment (hand augers, sludge samplers)	\$	25
Soil vapor sampling equipment (probes, slide hammer) (consumable items additional)	\$	30
GEOPHYSICAL EQUIPMENT		
Electromagnetic terrain conductivity (EM-31) instrument and recorder	\$	100
Very low frequency electromagnetic receiver	\$	100
Signal-enhancement single channel seismograph	\$	50
Downhole video logger	\$	500
Borehole geophysical logger	\$	400
Magnetic cable indicator	\$	45
Metal detector	\$	20
MISCELLANEOUS		
Digital Camera	\$	15
Generator	\$	75
Rotary hammer drill	\$	60
Sediment gradation or hydrometer equipment	\$	10/sample
Van or truck for transport of equipment	\$	25/day + 0.65/mile
Jon Boat	\$	75/day
Laptop Computer Use In Field	\$	35/day

- Consumable materials (disposable bailers, filters, tubing, etc.) at cost.

Other specialty equipment by quote.

WEEKLY RATE IS THREE TIMES DAILY RATE, MONTHLY RATE IS THREE TIMES WEEKLY RATE.

Strategic Plan for Water Supply, Treatment and Storage City of Beacon, NY															
		Managing Engineer, Managing Scientist, Project Manager 2, Sr. Technical Director	Managing Engineer, Managing Scientist, Project Manager 1, Technical Director	Managing Associate, Project Associate, Technical Associate, Eng/Sci/Arch 3	Sr. Project Engineer, Sr. Project Design, Sr. Project Scientist, Sr. Scientist, Sr. Design, Sr. Engineer	Project Engineer, Project Scientist, Project Designer, Eng/Sci/Arch 2	Design Engineer, Designer, Scientist, Eng Tech 3	Staff Engineer, Staff Scientist, Staff Designer, Eng/Sci/Arch 1, Admin 3	Design Drafter, Technician, Sr. Division Secretary, Office Administrator	Technical Drafter, Regional Office Secretary, Project Controls Admin	Total Hours	Total Labor Cost	Expenses	Total Labor Plus Expenses	Task Totals
Tasks	Officer, Program Director														
Task 1 - Kickoff Conference Call and Data Collection															\$ 792
Kickoff conference call		2									2	\$ 396		\$ 396	
Data collection		2									2	\$ 396		\$ 396	
Task 2 - Review Water Demands															\$ 198
Review water demands provided by the City		1									1	\$ 198		\$ 198	
Task 3 - Update Safe Yield Model															\$ 1,188
Collect streamflow data		1									1	\$ 198		\$ 198	
Update safe yield model		2									2	\$ 396		\$ 396	
Conduct modeling runs and summarize results		2									2	\$ 396		\$ 396	
Identify timing for bringing online new water supply alternatives		1									1	\$ 198		\$ 198	
Task 4 - Evaluate Water Treatment Plant Capacity															\$ 4,338
Conduct site visit		8									8	\$ 1,584	\$ 300	\$ 1,884	
Evaluate capacity of water treatment plant		1			4						5	\$ 818		\$ 818	
Identify alternatives to improve capacity of water treatment plant		1			4						5	\$ 818		\$ 818	
Identify conceptual cost and timing for implementation of alternatives		1			4						5	\$ 818		\$ 818	
Task 5 - Update Water Storage Analysis															\$ 990
Update water storage needs based on projected water demands		4									4	\$ 792		\$ 792	
Identify conceptual cost and timing for implementation of new storage tanks		1									1	\$ 198		\$ 198	
Task 6 - Develop Water System Model and Conduct Analyses															\$ 5,924
Collect and review data		2									2	\$ 396		\$ 396	
Develop water system model		2			8						10	\$ 1,636		\$ 1,636	
Calibrate water system model		1			4						5	\$ 818		\$ 818	
Analyze water system		1			4						5	\$ 818		\$ 818	
Identify system deficiencies and evaluate alternatives		1			8						9	\$ 1,438		\$ 1,438	
Identify conceptual cost and timing for implementation of new storage tanks		1			4						5	\$ 818		\$ 818	
Task 7 - Conduct Bathymetric Survey															\$ 34,000
Conduct bathymetric survey field program												\$ 24,000		\$ 24,000	
Data processing to generate volume estimates												\$ 10,000		\$ 10,000	
Task 8 - Prepare Letter Report															\$ 6,764
Prepare draft report		12			4						16	\$ 2,996		\$ 2,996	
Revise draft report based on comments		4									4	\$ 792		\$ 792	
Work Session on Conclusions and Draft Report		8									8	\$ 1,584	\$ 400	\$ 1,984	
Prepare final report		4									4	\$ 792	\$ 200	\$ 992	
Task 9 - Project Management															\$ 1,848
General program management services (scheduling, progress reports, etc.)		8								4	12	\$ 1,848		\$ 1,848	
Project Totals	0	71	0	0	44	0	0	0	0	4	119	\$ 55,142	\$ 900	\$ 56,042	\$ 56,042
Hourly Billing Rates (2017)	\$220	\$198	\$181	\$162	\$155	\$135	\$115	\$95	\$80	\$66					

LEGGETTE, BRASHEARS & GRAHAM, INC.

PROFESSIONAL GROUNDWATER AND ENVIRONMENTAL ENGINEERING SERVICES

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www.lbgweb.com

June 10, 2016

Mr. Edward Balicki
Chief Operator, City of Beacon
1 Municipal Plaza, Suite 1
Beacon, NY 12508

Via Electronic Transmission

RE: Sand and Gravel Aquifer
Groundwater Exploration Program
Beacon, New York

Dear Mr. Balicki:

Leggette, Brashears & Graham, Inc. (LBG) is pleased to provide you this work scope and cost estimate for the completion of a sand and gravel aquifer groundwater exploration program to develop additional groundwater sources for the City of Beacon, New York. Groundwater exploration of the sand and gravel aquifer underlying the Pump House Road parcel is proposed to assess the yield potential of the aquifer. Small diameter test borings using the drive and wash drilling method will be completed to assess the depth of the formation, the saturated thickness, and the coarseness and stratigraphy of the aquifer material. If suitable sand and gravel is encountered, small diameter test wells will be installed in the borings and short-term yield tests conducted to estimate aquifer parameters and the potential yield of a full-scale sand and gravel production well. In addition to the groundwater exploration, LBG will evaluate the existing water distribution pipe system from the existing bedrock Wells 1 and 2 to determine whether pipe size restriction (or friction loss) may be the cause of the reduction in yield which occurs when Wells 1 and 2 are pumped concurrently. This pipe size restriction evaluation can be completed at no additional cost to the City of Beacon.

LBG will begin by selecting test boring drilling locations based on New York State Department of Health (NYSDOH) well siting requirements and the presence of potential wetland and flood plain features on the site. For this proposal it is assumed that existing site maps will be sufficient to determine appropriate test well site locations and that clearing of access roads for the drill rig can be completed by the City of Beacon if needed.

The results of the sand and gravel groundwater exploration will be used to determine whether the property is suitable for sand and gravel production well development and provide the necessary information to assess the cost for construction, testing, and permitting of a full-sized sand and gravel production well. If the sand and gravel aquifer is not considered suitable, drilling additional bedrock wells is a favorable alternative. The cost for drilling and testing new bedrock wells on the Pump House Road property would be similar to those presented in LBG's June 10, 2016 proposal "Bedrock Well Drilling on Existing Water Treatment Plant Property".

LBG Tasks

Assist in preparation of bid documents for selection of Well Drilling Contractor if needed; coordination of drilling activities with Well Drilling Contractor and City of Beacon, conduct site visit to stake test boring locations and determine access requirements.....\$1,500

Conduct oversight of drilling of 4 to 6 test borings and installation of up to 6 small-diameter test wells, oversight of short-term yield tests at two well locations (assumes 6 to 8 field days)..... \$4,000-\$5,500

Process data collected during drilling program, includes conducting sieve analyses on formation samples collected, processing water-level data from short-term yield tests, calculation of aquifer parameters and potential yield, and theoretical design of a full-sized sand and gravel production well..... \$2,000-\$2,500

LBG Total \$7,500-\$9,500

Subcontractor Tasks

Well Drilling Contractor:

Completion of 4 to 6 test borings to depth of 80 feet to 100 feet; installation of up to 6 small-diameter test wells; conduct short-term yield tests on two wells..... \$31,000-\$52,000^{1/}

Subcontractor Total..... \$31,000-\$52,000

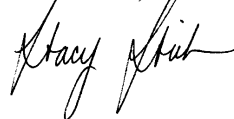
^{1/} Prevailing wages have been used in generate estimate.....

Total Cost Estimate..... \$38,500-\$61,500

LBG can begin work immediately upon receipt of the signed Quick Start Contract.
Should you have any questions, please do not hesitate to contact me directly at (475) 882-1723.

Very truly yours,

LEGGETTE, BRASHEARS & GRAHAM, INC.

A handwritten signature in black ink, appearing to read "Stacy Stieber".

Stacy Stieber, CPG
Associate/Hydrogeologist

Affirmed by:

A handwritten signature in black ink, appearing to read "Thomas P. Cusack".

Thomas P. Cusack, CPG
Senior Vice President

SS:cmm

Enclosures

H:\PROPOSAL\2016\ (C) Beacon City-Sand, Gravel Aquifer.doc

ATTACHMENTS

The Stephen B. Church Company
49 Great Hill Road
Oxford, CT
Since 1886

May 24, 2016

E mail to Leggette, Brashears, and Graham
Attention: Stacy Stieber
Shelton, CT
Phone 203-929-8555
E-mail SStieber@lbgct.com

From Jim Duncan
The Stephen B Church Co
Oxford, CT
Phone 203-888-2132
E-mail stephenbch@aol.com

Re: Test Well Drilling – Beacon, NY

Dear Stacy –

With this e mail, we wish to provide you with our proposal for test well drilling in Beacon, New York.

We understand that you would like four test wells drilled to depths estimated at 80 to 100 feet, with up to two adjacent sister wells. We also understand that you would like one or two pump tests of six hours duration after the completion of the drilling.

We propose to do this work on a time and materials basis with a drive and wash rig. We normally use a three man crew for this work. The drilling sites need to be level, clear, and accessible to truck mounted equipment. We also need a source of water within 200 feet of the drilling locations for our use during the field operation.

Unit prices and estimated quantities are as follows:

Mobilization	1	lump sum at	600.00	each
Rig and crew	6 to 10	days at	3650.00	per day
Extra heavy pipe	300 to 540	feet at	26.00	per foot
5 foot screens	4 to 12	each at	150.00	each
Drive shoes	4 to 6	each at	40.00	each

The estimated cost for the field work is \$31,000 to \$52,200. Prices quoted do not include the use of a water truck. A water truck can be provided for an additional \$250 per day.

We would ask for a site plan with the well sites marked. We would also ask the owner to secure proper underground utility clearance before starting this work.

We assume that we would be required to pay prevailing wages. Prices quoted include our standard insurance coverage.

Thank you for asking us to quote on this project. If you have any questions, please feel free to call.

Very truly yours,

Jim Duncan

QUICK START CONTRACT

This agreement for the performance of services is entered into this 10th day of June, 2016, by and between Leggette, Brashears & Graham, Inc. (LBG) and City of Beacon (Client). Subject to the contract terms printed on the reverse side of this form, LBG's standard fee schedule and the annexed proposal or scope of work. In the event of a conflict between the standard contract terms or fee schedule and any attached proposal or scope of work, terms of the proposal or scope shall govern.

CLIENT

Name: Mr. Edward Balicki
Company: City of Beacon
Address: 1 Municipal Plaza, Suite 1
City/State/Zip: Beacon, NY 12508

CLIENT CONTACTS

Reporting: Mr. Edward Balicki
Site Conditions: Mr. Edward Balicki

BILLING INFORMATION

Name: Mr. Edward Balicki
Company: City of Beacon
Address: 1 Municipal Plaza, Suite 1
City/State/Zip: Beacon, NY 12508

Project Location: **Street:** _____ **City:** Beacon **State:** NY
Proposal/Scope Date and Reference No.: June 10, 2016 **#Pages Attached:** 3

Brief Statement of Services: Sand and gravel aquifer exploration on Pump House Road parcel.

Anticipated Start Date: To be determined **Anticipated Completion Date:** To be determined
Preliminary Cost Estimate: \$7,500-\$9,500 (LBG Costs Only)

LBG Office Location: Shelton, CT **Project Representative:** Stacy Stieber
Principal-in-Charge: Thomas P. Cusack
Retainer: Waived

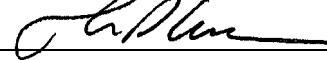

Client hereby engages LBG to perform the services described and referred to herein and agrees to pay LBG for such services, and acknowledges that the terms of this agreement are subject to LBG's standard contract terms and all attached and referenced material and documents. Unless otherwise provided in the attached proposal or scope: (1) inclusion of anticipated "start" and "completion" dates shall not be construed to impose a "time is of the essence" requirement; and (2) any preliminary cost estimate shall not be construed as a "flat-fee" or "not-to-exceed" amount. In consideration of the foregoing, LBG agrees to perform the services described and referenced herein.

CITY OF BEACON

LEGGETTE, BRASHEARS & GRAHAM, INC.

CLIENT

By: (signature) _____
(printed) _____
Title: _____
Date: _____
Witness: _____

By: (signature) 
(printed) Thomas P. Cusack
Title: Senior Vice President
Date: June 10, 2016
Witness: 

GENERAL TERMS AND CONDITIONS

FEE PAYMENT

- 1) LBG will submit invoices to Client monthly following any month of significant activity, and a final invoice upon completion of services. Invoices will show charges based on current LBG Fee Schedules or other agreed-upon basis, and will include a detailed separation of charges and supporting information.
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- 3) In the event Client requires expert-witness testimony, Client will pay LBG all past due balances before LBG will proceed to prepare for or offer testimony.
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- 5) In the event Client fails to pay LBG within forty-five (45) days following invoice date, LBG may consider the default a breach of the consulting agreement and all duties of LBG may be suspended or terminated, and work product may be withheld, without liability of any kind to LBG.

OWNERSHIP OF DOCUMENTS AND CONFIDENTIALITY

- 1) All reports, field data and notes, laboratory test data, calculations, estimates, and other documents prepared in the course of consulting service shall remain the property of LBG. Client agrees that all reports and other work LBG furnished to Client or Client's agents which are not paid for, will be returned upon demand and will not be used for any purpose whatsoever.
- 2) Documents provided to LBG by Client will be returned to Client, upon request, at the completion of work at Client's cost.
- 3) Reuse of reports or other materials by Client or others on extensions or modifications of the project or on other sites, without written permission from LBG or adaptation by LBG for the specific purpose intended, shall be at the user's sole risk, without liability on the part of LBG, and Client agrees to indemnify and hold LBG harmless from all claims, damages and expenses, including attorney's fees.
- 4) LBG shall maintain Client's project data and reports in strictest confidence, and will release such information to others only upon express written permission from Client.

DISPUTES

- 1) Client will pay all reasonable collection expenses or litigation fees, including attorney fees, that LBG incurs in collecting any delinquent amount Client owes.
- 2) If the Client institutes a suit against LBG which is dismissed or for which judgement is rendered for LBG, Client will pay LBG for all costs of defense including attorney fees, expert witness fees and court costs.

INSURANCE AND INDEMNIFICATION

- 1) LBG will carry Workers Compensation, General Liability, Automobile Liability, Excess Umbrella-Form Liability and Professional Liability insurance policies in amounts which LBG considers adequate. Certificates of insurance will be provided to Client upon request. Within the terms and conditions of the insurance, LBG agrees to indemnify Client against loss caused by actions of LBG, its employees or its subcontractors. LBG will not be responsible for liability beyond the limits and conditions of the insurance. At Client's request, LBG will seek additional insurance coverages or coverage limits for specific projects, and will bill Client for the additional premium cost. LBG will require that its field subcontractors are insured to the same levels required of LBG by Client.
- 2) LBG's professional liability will be limited to the value of the consulting services performed.
- 3) LBG will not be responsible for any loss or liability from negligence by Client or by other agents, contractors or consultants employed by Client or from negligence by any person for whose conduct we are not legally responsible.

TEST BORINGS AND OTHER EXPLORATIONS

- 1) To drill test borings or perform other explorations, LBG may engage a contractor experienced in this work. The Contractor's invoices plus a fifteen (15) percent service charge will be added to LBG's invoice. On occasion, LBG engages the specialized services of individual consultants or other companies to participate in a project. When considered necessary, these firms or other consultants will be used with Client's approval. The cost of such services plus a fifteen (15) percent service charge will be included in our invoice. Such specialists will be wholly responsible for their work product.

- 2) Alternatively, at Client's request, LBG will recommend contractor(s) or specialist(s) for Client to enter into direct contract(s) with. In that event, invoices for these outside services will be mailed to Client for direct payment to the contractor(s). LBG review and approval of each invoice will be provided on request. Under either alternative, LBG does not guarantee and is not responsible for the performance of the contractor(s) or the accuracy of their results.

GEOPHYSICAL AND GEOCHEMICAL INSTRUMENTATION SERVICES

LBG is equipped to provide specialized geophysical and geochemical instrumentation services according to project needs. Fees for these equipment services will be based on use charges at standard rates published by LBG plus fees for consulting services.

CUSTODY OF MATERIALS

- 1) In the course of work, LBG may take custody of and transport soil and/or water samples from Client's site. Upon the completion of evaluation and/or testing of such samples, LBG reserves the right to return the samples to Client at Client's expense, and Client agrees to accept such samples and the responsibility for their proper and legal disposal.
- 2) At no time, under any circumstances, will LBG personnel represent LBG or themselves as generators of waste, hazardous or otherwise, which may have to be removed from or disposed of on a site, and LBG personnel will not sign hazardous waste manifests on behalf of Client.

RIGHT OF ENTRY

Client will furnish right-of-entry on the site for LBG to conduct the work. LBG will take reasonable precautions to minimize damage to the land from use of equipment, but has not included in the fee the cost for restoration of damage that may result from site operations. If LBG is required to restore the land to its former condition, this will be arranged and the cost plus fifteen (15) percent will be added to our fee.

DAMAGE TO SUBSURFACE STRUCTURES

Reasonable care will be exercised in locating subsurface structures in the vicinity of proposed subsurface explorations. This will include contact with the local agency coordinating subsurface utility information (i.e., "Call Before You Dig" service) and a review of plans provided by Client for the site to be investigated. LBG shall rely upon any information provided by Client or Client's agent or representative. If the locations of underground structures are not known accurately or cannot be confirmed, then there will be a degree of risk to Client associated with conducting the work. In the absence of confirmed underground structure locations, Client agrees to accept the risk of damage and possible costs associated with repair and restoration of damage resulting from the exploration work.

PETROLEUM PRODUCTS AND HAZARDOUS MATERIALS

- 1) Petroleum products, hazardous materials, or asbestos may exist at a site where there is no reason to believe they should be present. If, at any time, evidence of the existence or possible existence of such substances is discovered, LBG reserves the right to renegotiate any consulting agreement, the fees for our services and our continued involvement in the project. LBG will notify Client as soon as possible should unanticipated hazardous materials or suspected hazardous materials be discovered.
- 2) The discovery of hazardous materials or suspected hazardous materials may make it necessary for LBG to take immediate measures to protect human health and safety and/or the environment. Client agrees to compensate LBG for the cost of any and all measures that, in our professional onsite judgment are justified to preserve and protect the health and safety of our personnel, Client's employees and/or the public, and/or the environment. In addition, Client waives any claims against LBG and, to the full extent permitted by law, agrees to indemnify, defend and hold LBG harmless from any and all claims, damages and liability, including but not limited to cost of defense, in any way connected with petroleum products, hazardous materials or asbestos.

STANDARD OF CARE

In accepting our proposal for consulting services, Client acknowledges the inherent risks associated with any subsurface investigation. In performing professional services, LBG will use that degree of care and skill ordinarily exercised under similar circumstances by members of the profession practicing in the same or similar localities. LBG makes no express or implied warranty beyond our commitment to conform to this high standard of professional practice.

LEGGETTE, BRASHEARS & GRAHAM, INC.

PROFESSIONAL GROUNDWATER AND ENVIRONMENTAL ENGINEERING SERVICES

4 RESEARCH DRIVE, SUITE 204
SHELTON, CT 06484
(203) 929-8555
FAX (203) 926-9140
www.lbgweb.com

2016 FEE SCHEDULE FOR CONSULTING SERVICES

Senior Vice President	\$235/hour
Vice President/Principal	\$235/hour
Associate Vice President	\$225/hour
Senior Consultant	\$235/hour
Senior Associate	\$185/hour
Associate	\$130 to \$162/hour
Senior Environmental Engineer	\$153/hour
Senior Hydrogeologist/Environmental Scientists	\$112/hour
Environmental Engineer II	\$93/hour
Hydrogeologist II/Environmental Scientist II	\$87/hour
Environmental Engineer I	\$80/hour
Hydrogeologist I/Environmental Scientist I	\$76/hour
Senior Technician	\$75/hour
Technician	\$70/hour
CAD Operator/Draftsperson	\$95/hour
Clerical	\$75/hour

We require reimbursement for actual expenses incurred, including computer time. The use of personal cars in the field would be billed at the IRS approved rate per mile. An administrative charge of 5-percent is affixed to actual expenses and 15-percent for subcontractors. A 2-percent charge on services will be included to cover telephone, facsimile and in-house printing costs.

Invoices are payable upon receipt; accounts unpaid more than 45 days after the billing date are subject to 1.25-percent interest per month (15-percent annual rate) from the invoice date.

Fees for pretrial conferences and expert-witness testimony are as quoted above, with no premium fees.

LEGGETTE, BRASHEARS & GRAHAM, INC.
2016 FEE SCHEDULE FOR EQUIPMENT USE

<u>ITEM</u>		<u>DAILY RATE*</u>
INSTRUMENTATION		
Turbidity meter	\$	35
Conductivity meter	\$	20
pH meter	\$	20
Conductivity/pH meter	\$	35
Dissolved oxygen meter	\$	50
Flow-Through Cell	\$	150
Photoionization detector	\$	100
Flame ionization detector	\$	120 Combustible gas
(LEL)/oxygen meter	\$	60
Gas detector tube system	\$	16
Oil/water interface tape	\$	65
Electric water-level indicator	\$	35
Multi-Channel Data logger	\$	75
Transducers	\$	30 each
In-Well Data logger/Tranducer	\$	90
Barotroll	\$	90
Surveying Equipment	\$	100
Air velocity meter	\$	80
Magnehelic gauges	\$	20
GPS Receiver (Trimble)	\$	150
Trimble Transducer Connection	\$	50
Trimble GPS/Transducer Connection	\$	200
Timble External Antenna	\$	75
Laptop Computer Transducer Connection	\$	50
Dust Monitor	\$	110
PID/LEL/02 meter	\$	100/day; 300/week
SAMPLING EQUIPMENT		
Two-inch air or electric submersible pumps	\$	115
Four-inch submersible pump	\$	75
Powered suction pump	\$	50
Peristaltic pump	\$	30
Hand-operated suction pump	\$	15
Teflon or stainless-steel bailers	\$	10 each
Manually operated soil/sediment sampling equipment (hand augers, sludge samplers)	\$	25
Soil vapor sampling equipment (probes, slide hammer) (consumable items additional)	\$	30
GEOPHYSICAL EQUIPMENT		
Electromagnetic terrain conductivity (EM-31) instrument and recorder	\$	100
Very low frequency electromagnetic receiver	\$	100
Signal-enhancement single channel seismograph	\$	50
Downhole video logger	\$	500
Borehole geophysical logger	\$	400
Magnetic cable indicator	\$	45
Metal detector	\$	20
MISCELLANEOUS		
Digital Camera	\$	15
Generator	\$	75
Rotary hammer drill	\$	60
Sediment gradation or hydrometer equipment	\$	10/sample
Van or truck for transport of equipment	\$	25/day + 0.65/mile
Jon Boat	\$	75/day
Laptop Computer Use In Field	\$	35/day

- Consumable materials (disposable bailers, filters, tubing, etc.) at cost.

Other specialty equipment by quote.

WEEKLY RATE IS THREE TIMES DAILY RATE, MONTHLY RATE IS THREE TIMES WEEKLY RATE.

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4 RESEARCH DRIVE, SUITE 204
SHELTON, CT 06484
(203) 929-8555
FAX (203) 926-9140
www.lbgweb.com

June 10, 2016

Mr. Edward Balicki
Chief Operator, City of Beacon
1 Municipal Plaza, Suite 1
Beacon, NY 12508

Via Electronic Transmission

RE: City-Wide Hydrogeologic Assessment
Beacon, New York

Dear Mr. Balicki:

Leggette, Brashears & Graham, Inc. (LBG) is pleased to provide you this work scope and cost estimate for the completion of a Hydrogeologic Assessment of the City of Beacon to identify potentially suitable parcels for development of groundwater wells. The hydrogeologic assessment will include the evaluation of potential locations for groundwater-supply source development in both the stratified-drift sand and gravel and bedrock aquifers along the Fishkill Creek corridor. Once areas have been identified which may be potentially suitable for water-supply development, LBG will conduct a tax parcel search to determine if land parcels of sufficient size are available for the siting of production wells. A windshield tour of the potentially suitable properties will also be completed to assess site access and to complete a preliminary review of current land use.

LBG Tasks

Review of available maps and GIS data pertaining to the stratified-drift and bedrock aquifers; identify the location of existing USGS and other borings/wells drilled and review available geologic logs; identify and locate existing water withdrawals in the region; review available USGS studies for the region; and conduct a fracture-trace assessment to identify geologically favorable bedrock well sites \$3,200-\$3,800

Review GIS tax parcel maps for the city of Beacon to identify properties of suitable size for development of groundwater sources; complete a preliminary windshield tour of properties identified as potentially suitable for groundwater investigation to review current land use on and around parcels\$1,200

Provide report summarizing the data reviewed and providing recommendations for
areas and/or properties which warrant further investigation..... \$2,000-\$2,500

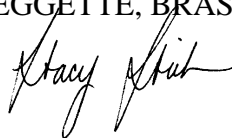
LBG Total \$6,400-\$7,500

Total Cost Estimate..... \$6,400-\$7,500

LBG can begin work immediately upon receipt of the signed Quick Start Contract.
Should you have any questions, please do not hesitate to contact me directly at (475) 882-1723.

Very truly yours,

LEGGETTE, BRASHEARS & GRAHAM, INC.



Stacy Stieber, CPG
Associate/Hydrogeologist

Affirmed by:



Thomas P. Cusack, CPG
Senior Vice President

SS:cm

Enclosures

H:\PROPOSAL\2016\2016(C) Beacon City-Wide Hydro Assessment.doc

QUICK START CONTRACT

This agreement for the performance of services is entered into this 10th day of June, 2016, by and between Leggette, Brashears & Graham, Inc. (LBG) and City of Beacon (Client). Subject to the contract terms printed on the reverse side of this form, LBG's standard fee schedule and the annexed proposal or scope of work. In the event of a conflict between the standard contract terms or fee schedule and any attached proposal or scope of work, terms of the proposal or scope shall govern.

CLIENT

Name: Mr. Edward Balicki
Company: City of Beacon
Address: 1 Municipal Plaza, Suite 1
City/State/Zip: Beacon, NY 12508

CLIENT CONTACTS

Reporting: Mr. Edward Balicki
Site Conditions: Mr. Edward Balicki

BILLING INFORMATION

Name: Mr. Edward Balicki
Company: City of Beacon
Address: 1 Municipal Plaza, Suite 1
City/State/Zip: Beacon, NY 12508

Project Location: **Street:** _____ **City:** Beacon **State:** NY
Proposal/Scope Date and Reference No.: June 10, 2016 **#Pages Attached:** 3

Brief Statement of Services: City-Wide Hydrogeologic Assessment

Anticipated Start Date: To be determined **Anticipated Completion Date:** To be determined
Preliminary Cost Estimate: \$6,400-\$7,500 (LBG Costs Only)

LBG Office Location: Shelton, CT **Project Representative:** Stacy Stieber
Principal-in-Charge: Thomas P. Cusack
Retainer: Waived



Client hereby engages LBG to perform the services described and referred to herein and agrees to pay LBG for such services, and acknowledges that the terms of this agreement are subject to LBG's standard contract terms and all attached and referenced material and documents. Unless otherwise provided in the attached proposal or scope: (1) inclusion of anticipated "start" and "completion" dates shall not be construed to impose a "time is of the essence" requirement; and (2) any preliminary cost estimate shall not be construed as a "flat-fee" or "not-to-exceed" amount. In consideration of the foregoing, LBG agrees to perform the services described and referenced herein.

CITY OF BEACON

LEGGETTE, BRASHEARS & GRAHAM, INC.

CLIENT

By: (signature) _____
(printed) _____
Title: _____
Date: _____
Witness: _____

By: (signature) 
(printed) Thomas P. Cusack
Title: Senior Vice President
Date: June 10, 2016
Witness: 

GENERAL TERMS AND CONDITIONS

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- 1) LBG will submit invoices to Client monthly following any month of significant activity, and a final invoice upon completion of services. Invoices will show charges based on current LBG Fee Schedules or other agreed-upon basis, and will include a detailed separation of charges and supporting information.
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- 1) All reports, field data and notes, laboratory test data, calculations, estimates, and other documents prepared in the course of consulting service shall remain the property of LBG. Client agrees that all reports and other work LBG furnished to Client or Client's agents which are not paid for, will be returned upon demand and will not be used for any purpose whatsoever.
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- 2) At no time, under any circumstances, will LBG personnel represent LBG or themselves as generators of waste, hazardous or otherwise, which may have to be removed from or disposed of on a site, and LBG personnel will not sign hazardous waste manifests on behalf of Client.

RIGHT OF ENTRY

Client will furnish right-of-entry on the site for LBG to conduct the work. LBG will take reasonable precautions to minimize damage to the land from use of equipment, but has not included in the fee the cost for restoration of damage that may result from site operations. If LBG is required to restore the land to its former condition, this will be arranged and the cost plus fifteen (15) percent will be added to our fee.

DAMAGE TO SUBSURFACE STRUCTURES

Reasonable care will be exercised in locating subsurface structures in the vicinity of proposed subsurface explorations. This will include contact with the local agency coordinating subsurface utility information (i.e., "Call Before You Dig" service) and a review of plans provided by Client for the site to be investigated. LBG shall rely upon any information provided by Client or Client's agent or representative. If the locations of underground structures are not known accurately or cannot be confirmed, then there will be a degree of risk to Client associated with conducting the work. In the absence of confirmed underground structure locations, Client agrees to accept the risk of damage and possible costs associated with repair and restoration of damage resulting from the exploration work.

PETROLEUM PRODUCTS AND HAZARDOUS MATERIALS

- 1) Petroleum products, hazardous materials, or asbestos may exist at a site where there is no reason to believe they should be present. If, at any time, evidence of the existence or possible existence of such substances is discovered, LBG reserves the right to renegotiate any consulting agreement, the fees for our services and our continued involvement in the project. LBG will notify Client as soon as possible should unanticipated hazardous materials or suspected hazardous materials be discovered.
- 2) The discovery of hazardous materials or suspected hazardous materials may make it necessary for LBG to take immediate measures to protect human health and safety and/or the environment. Client agrees to compensate LBG for the cost of any and all measures that, in our professional onsite judgment are justified to preserve and protect the health and safety of our personnel, Client's employees and/or the public, and/or the environment. In addition, Client waives any claims against LBG and, to the full extent permitted by law, agrees to indemnify, defend and hold LBG harmless from any and all claims, damages and liability, including but not limited to cost of defense, in any way connected with petroleum products, hazardous materials or asbestos.

STANDARD OF CARE

In accepting our proposal for consulting services, Client acknowledges the inherent risks associated with any subsurface investigation. In performing professional services, LBG will use that degree of care and skill ordinarily exercised under similar circumstances by members of the profession practicing in the same or similar localities. LBG makes no express or implied warranty beyond our commitment to conform to this high standard of professional practice.

LEGGETTE, BRASHEARS & GRAHAM, INC.

PROFESSIONAL GROUNDWATER AND ENVIRONMENTAL ENGINEERING SERVICES

4 RESEARCH DRIVE, SUITE 204
SHELTON, CT 06484
(203) 929-8555
FAX (203) 926-9140
www.lbgweb.com

2016 FEE SCHEDULE FOR CONSULTING SERVICES

Senior Vice President	\$235/hour
Vice President/Principal	\$235/hour
Associate Vice President	\$225/hour
Senior Consultant	\$235/hour
Senior Associate	\$185/hour
Associate	\$130 to \$162/hour
Senior Environmental Engineer	\$153/hour
Senior Hydrogeologist/Environmental Scientists	\$112/hour
Environmental Engineer II	\$93/hour
Hydrogeologist II/Environmental Scientist II	\$87/hour
Environmental Engineer I	\$80/hour
Hydrogeologist I/Environmental Scientist I	\$76/hour
Senior Technician	\$75/hour
Technician	\$70/hour
CAD Operator/Draftsperson	\$95/hour
Clerical	\$75/hour

We require reimbursement for actual expenses incurred, including computer time. The use of personal cars in the field would be billed at the IRS approved rate per mile. An administrative charge of 5-percent is affixed to actual expenses and 15-percent for subcontractors. A 2-percent charge on services will be included to cover telephone, facsimile and in-house printing costs.

Invoices are payable upon receipt; accounts unpaid more than 45 days after the billing date are subject to 1.25-percent interest per month (15-percent annual rate) from the invoice date.

Fees for pretrial conferences and expert-witness testimony are as quoted above, with no premium fees.

LEGGETTE, BRASHEARS & GRAHAM, INC.
2016 FEE SCHEDULE FOR EQUIPMENT USE

<u>ITEM</u>		<u>DAILY RATE*</u>
INSTRUMENTATION		
Turbidity meter	\$	35
Conductivity meter	\$	20
pH meter	\$	20
Conductivity/pH meter	\$	35
Dissolved oxygen meter	\$	50
Flow-Through Cell	\$	150
Photoionization detector	\$	100
Flame ionization detector	\$	120 Combustible gas
(LEL)/oxygen meter	\$	60
Gas detector tube system	\$	16
Oil/water interface tape	\$	65
Electric water-level indicator	\$	35
Multi-Channel Data logger	\$	75
Transducers	\$	30 each
In-Well Data logger/Tranducer	\$	90
Barotroll	\$	90
Surveying Equipment	\$	100
Air velocity meter	\$	80
Magnehelic gauges	\$	20
GPS Receiver (Trimble)	\$	150
Trimble Transducer Connection	\$	50
Trimble GPS/Transducer Connection	\$	200
Timble External Antenna	\$	75
Laptop Computer Transducer Connection	\$	50
Dust Monitor	\$	110
PID/LEL/02 meter	\$	100/day; 300/week
SAMPLING EQUIPMENT		
Two-inch air or electric submersible pumps	\$	115
Four-inch submersible pump	\$	75
Powered suction pump	\$	50
Peristaltic pump	\$	30
Hand-operated suction pump	\$	15
Teflon or stainless-steel bailers	\$	10 each
Manually operated soil/sediment sampling equipment (hand augers, sludge samplers)	\$	25
Soil vapor sampling equipment (probes, slide hammer) (consumable items additional)	\$	30
GEOPHYSICAL EQUIPMENT		
Electromagnetic terrain conductivity (EM-31) instrument and recorder	\$	100
Very low frequency electromagnetic receiver	\$	100
Signal-enhancement single channel seismograph	\$	50
Downhole video logger	\$	500
Borehole geophysical logger	\$	400
Magnetic cable indicator	\$	45
Metal detector	\$	20
MISCELLANEOUS		
Digital Camera	\$	15
Generator	\$	75
Rotary hammer drill	\$	60
Sediment gradation or hydrometer equipment	\$	10/sample
Van or truck for transport of equipment	\$	25/day + 0.65/mile
Jon Boat	\$	75/day
Laptop Computer Use In Field	\$	35/day

- Consumable materials (disposable bailers, filters, tubing, etc.) at cost.

Other specialty equipment by quote.

WEEKLY RATE IS THREE TIMES DAILY RATE, MONTHLY RATE IS THREE TIMES WEEKLY RATE.



July 25, 2017

Edward Balicki
Chief Operator
City of Beacon
One Municipal Plaza
Beacon, New York 12508

Re: *City of Beacon*
Proposal to Assess the City of Beacon Water

Dear Mr. Balicki:

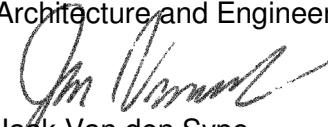
Since 2008, Henningson, Durham & Richardson Architecture and Engineering, P.C. (HDR) has supported the City of Beacon's efforts to study and remediate sanitary sewer overflows (SSO). HDR is pleased to submit this proposal perform a Water Supply Assessment.

HDR proposes to conduct this assignment according to the terms and conditions we are following for our other projects with the City of Beacon.

We appreciate the opportunity to assist the City of Beacon, and we look forward to continuing our work with you. Should you have any questions, please do not hesitate to contact me or Tom Newman.

Sincerely,

Henningson, Durham & Richardson
Architecture and Engineering, P.C.


Jaak Van den Syde
Project Manager

cc:
Enclosures

Sincerely,

Henningson, Durham & Richardson
Architecture and Engineering, P.C.

 P.E.
Tom Newman, PE

Proposal to Assess The City of Beacon Water Supply

Project Understanding

The City of Beacon's (City) existing Master Plan indicates that the City's water supply should be sufficient until 2050; however, there is recent concern that the City may reach its effective capacity well before the 2050 target. The City is concerned about the potential water supply shortfall and in response is seeking a water supply assessment.

HDR proposes to assist the City by evaluating the following items:

1. Review Existing Safe Yield Study: The previous Safe Yield Analysis was conducted in 2014. That analysis was based in large part upon earlier studies from 1992 and 1974. We suspect that these studies may not adequately represent the current infrastructure and other conditions affecting the actual Safe Yield. Furthermore, the 1992 study identified potential water deficits. HDR would review the existing Safe Yield studies, check the methodology and identify appropriate steps to improve Safe Yield analysis accuracy. Based on our preliminary review of City records, we believe that bathymetric surveys are necessary to calculate total available storage and storage capacity lost through silt / sedimentation buildup.
2. Evaluate Distribution Needs: HDR will review existing data on the City's water distribution system and develop a data gap and modeling plan for a Water Distribution Model to map water use and uncover system losses / unaccounted water.
3. Project Water Use and Demands: Estimate projected water demand based on population growth projections, new development projects, and other water demands associated with the Town of Fishkill.
4. Review and Evaluate Impacts on the City's Water Treatment Plant and Finished Water Storage: It has been reported that the existing filtration system may be a bottleneck and additional finished water storage may be required.

In order to evaluate these items, HDR proposes the following tasks:

Tasks

1. Meet with City to discuss Specific Goals of the Project

- HDR will meet with the City to discuss the project goals, the specific needs of the City, and collect available data.
- The meeting is expected to take place at the WTP and include a tour of each of the reservoirs.

Assumptions

- a. HDR will have two attendees.
- b. One meeting (2hr for meeting 4hr recon) up to 6 hours), held in the City of Beacon.

2. Evaluate Existing Safe Yield Studies and Data Collection Needs

- Evaluate Existing Safe Yield Studies
 - Review previous Safe Yield and Water Supply system studies¹ done for the City.
 - Identify/verify the components of the City's water supply system, including reservoirs, impoundments, watershed areas and sub-areas, groundwater wells, auxiliary sources, raw water pipelines, intake structures, meters, and Water Taking Permits and conditions.
 - Using available information regarding the connections between the reservoirs, wells, and water filtration plant, identify any potential bottlenecks that may reduce the effective Safe Yield of the sources.
 - If original data are available, perform a sensitivity analysis to identify critical elements of the system and identify assumptions/parameters that would be a priority to resolve through future data-collection efforts to reduce uncertainty of the Safe Yield calculation.
- Evaluate Data Collection Needs and System Components
 - The most recent Safe Yield study showed a marked decrease in reservoir capacity due to sedimentation therefore we propose conducting bathymetric surveys of some or all of the reservoirs to obtain more accurate measurements of total storage and sedimentation.
 - Check recharge rates, drain depths, and sediment buildup rates in the reservoirs.
 - Check capacity of the two existing wells and initial identification of what is affecting the total well capacity.
 - Evaluate possibly increasing maximum purchased water from Fishkill, or augmenting with new raw water sources if necessary (e.g., Jessen's Pond, Fishkill Creek, or the Hudson).
 - Verify watershed delineations using existing topography and Geographical Information Systems (GIS).

¹ O'Brien & Gere, Reservoir Safe Yield Analysis and Groundwater Supply. 2014
O'Brien & Gere, Water Supply Project - Safe Yield Analysis. December 1992
Bowe-Walsh, Report on Hydrology and Safe Yield (excerpt). 1974

- Review of the missing and incomplete data will be done to identify key components of the system that require further data-gathering efforts.
- Examples include:
 - Well testing & monitoring;
 - Reservoir Inspections; and
 - Stream flow gauging stations.

Assumptions

- a. The City will provide available data to HDR in electronic format.
- b. A new Safe Yield study will not be performed at this time, but could be performed, at additional cost, pending the findings of this review.

3. Evaluate Distribution Needs

HDR will develop a specification to create a water distribution model for the City. HDR will review existing data on the City's water distribution system and develop a data gap and modeling plan for a Water Distribution Model to map water use and uncover system losses/unaccounted water. A water distribution model will be beneficial of the City as they expand their distribution system with additional storage. The benefits of water distribution model include:

- Holistic understanding of system supply, conveyance, and demands.
- Understanding and evaluation of system operation and storage.
- Assessment of system ability to provide level of services under normal and maximum hour peak day conditions.
- Assessment of system capability to provide fire protection.
- Water age analysis.
- Forecast of future system demands and CIP project needs.

Assumptions

- a. Available data will be provided to HDR from the City in electronic format.
- b. Desktop analysis, no field data collection effort.

4. Projected Water Use and Demands

This task will include the following elements:

- HDR will analyze water use based on population growth projections, new development projects, and other water demands.

- Use the City's water use records and future population projections to check and/or generate new water-use projections.
- HDR will also analyze the recent sewer-metering data to determine what the impact of weekend tourism has on water usage at various locations across the City. These data will be used to augment any metered drinking water data that the City may have.

Assumptions

- a. Available data will be provided to HDR from the City in electronic format.

5. Evaluate Impacts on WTP and Finished Water Storage

This task will include the following elements:

- Evaluate whether adding staff to do additional backwashing would be effective.
- Determine or confirm the current maximum capacity of the WTP and infrastructure.
- Evaluate the need for adding another filter bed and identify any bottlenecks.
- Identify what the City's finished water storage capacity needs to be for when the reservoirs are taken offline for planned maintenance and repairs.

6. Deliverables

- HDR will prepare a summary report with findings, conclusions and recommendations from the above tasks.

Assumptions

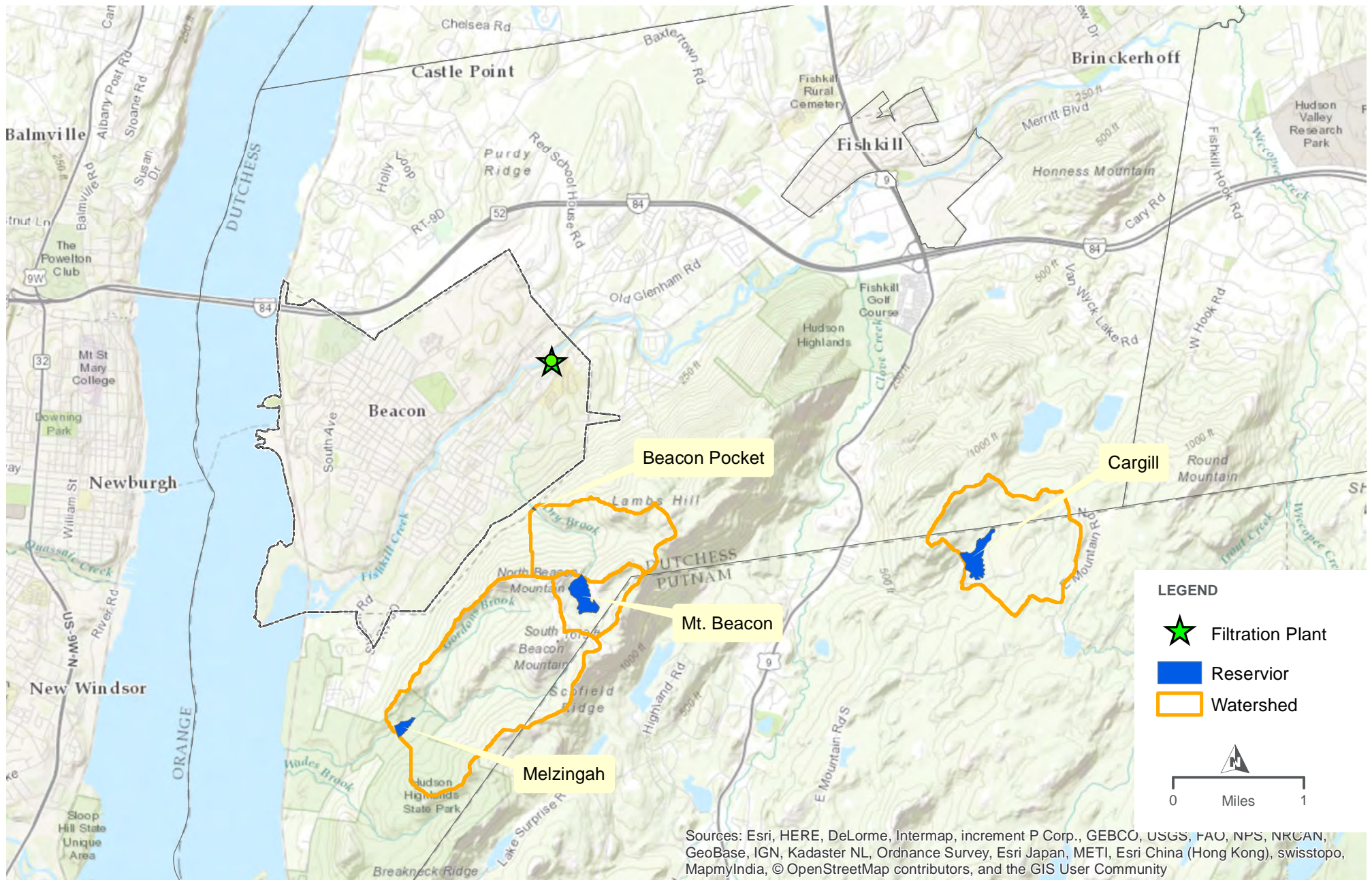
- a. HDR will address one round of consolidated comments to the text of the report.

Budget Proposal

A summary of the lump sum fees associated with each of the above tasks is presented below. Note that the estimated costs of the bathymetric surveys are provided separately for comparison purposes and are not reflected in the subtotal below; some cost savings may result if more than one reservoir is to be surveyed.

Task #	Description	Fee
1	Meet with City to discuss Specific Goals of the Project	\$4,300
2	Evaluate Existing Safe Yield Studies and Data Collection Needs	\$5,800
	Bathymetric Survey – Mt. Beacon and Mt. Beacon Pocket Reservoirs	(\$25,000)
	Bathymetric Survey – Melzingah Reservoir	(\$12,000)
	Bathymetric Survey – Cargill Reservoir	(\$18,000)
3	Evaluate Distribution Needs	\$2,000
4	Projected Water Use and Demands	\$1,600
5	Evaluate Impacts on WTP and Finished Water Storage	\$1,600
6	Deliverables	\$3,000
	Total (without Bathymetric Surveys):	\$18,300
	Total (including Bathymetric Surveys):	\$73,300

ATTACHMENTS



CITY OF BEACON WATER SUPPLY FEATURES





July 25, 2017

Ed Balicki
Water and Wastewater Superintendent
City of Beacon Water Department
470 Liberty Street
Beacon, New York 12508

Re: Proposal for Engineering Services
Water System Evaluation
File: 702.3024

Dear Mr. Balicki:

Barton & Loguidice, D.P.C. (B&L) is pleased to offer this proposal for engineering services to the City of Beacon for evaluating the city water system.

Project Background

The City of Beacon is a growing and vibrant city along the Hudson River. One of the pressures of this growth is providing reliable infrastructure. Concerns have been raised over the City water system and its ability to provide a long term supply to its customers. Therefore, in a proactive manner, the City is looking to evaluate its overall water system to make sure the system is capable of meeting the needs of its existing and proposed customers for an extended (20 years) period of time.

According to the recent Comprehensive Plan update, the city water system generally consists of the following:

Sources:

Three (3) reservoirs (Melzingah, Mt. Beacon and Cargill) – combined total storage of about 340 million gallons (mg) and 0.77 million gallons per day (mgd) safe yield.

Two (2) groundwater wells (#1 and #2) – combined safe yield of 1.54 mgd

One (1) groundwater well owned by the Village of Fishkill (#8) – safe yield of 1.2 mgd

The City has been in the process of developing another well in the City but that well has not been successfully developed to date.

Total safe yield of the current sources is about 3.51 mgd.

Water Filtration Plant (WTP):

The WTP was constructed in 1990 with a current plant capacity of 4.0 mgd, expandable to 6.0 mgd. The WTP current average day flow is about 2.8 mgd.

Storage:

Four storage tanks total; (1) tank is 500,000 gallons, (3) tanks are each 1,000,000 gallons for a total nominal capacity of 3.5 mg.

Distribution:

Generally 6" to 12" mains, a small percentage of asbestos cement pipes from the 1940's era. A map from 1995 of the system is available but the City does not have a hydraulic model of the system.

The Comprehensive Plan indicates that the water supply status is "at capacity" so the City wants to review the overall system to ensure a safe, reliable water system.



Ed Balicki
City of Beacon Water Department
July 25, 2017
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Project Approach & Qualifications

B&L proposes a phased approach to review the overall system so as to ascertain areas of concern, provide alternatives to improving these concerns and a funding strategy to implement the needed improvements.

As you will see from the attached qualifications, B&L has over 50 years of experience in water engineering and are second to none in formulating effective funding strategies to implement infrastructure improvements. We have assisted communities secure hundreds of millions of dollars of affordable funding through various USDA, NYSEFC, CFA, CDBG and other funding programs.

Scope of Services

Review of Source Capacity Safe Yield

It appears from the Comprehensive Plan update that there are existing reports from the past 25 years regarding the safe yield of the surface and groundwater source systems. We propose to review these reports in detail and provide a summary memo of the safe yield of the current system. The memo will include our review of the methodologies used to ascertain the safe yield of the sources, whether the methods are still applicable and appropriate and any recommendations for groundwater well testing. This testing is not part of this scope of services but would be an additional service.

B&L will also summarize the past 12 months of water use data to determine current usage. We will meet with the City Planning Department and DPW to review and summarize a listing of projects in the planning, approval and construction stages as well as current and future outside City contracts and needs of neighboring communities. We will also estimate a 20 year growth projection and summarize all of these projections to determine the estimated water needs of the system, both short term and long term.

Two meetings are included, a kick off meeting and a meeting to review current contracts and planning projects.

Reservoir Bathymetric Survey

At the request of the City, we propose a bathymetric survey of the three reservoirs. From the Comprehensive Plan update, the storage of the three reservoirs has not changed since 1974. We will subcontract a survey subconsultant to complete bathymetric survey of the reservoirs and provide a topographic base map of the reservoirs. Note that boundary survey services are not included.

We assume that a base map of the original construction is available from the City and B&L will compute the available current storage and compare it to the original storage capacity of the reservoirs and summarize in a memo.

We are proposing an allowance for the bathymetric surveys of the three reservoirs and would adjust the allowance after providing three survey quotes from local surveyors we consistently team with on projects.

Cursory Water Treatment Plant Evaluation

B&L will conduct a site visit and cursory review of the treatment plant. We will summarize current conditions, capacity of the plant compared to the requested short term and long terms water demands and review the ability of the filtration technology to meet ever tightening environmental regulations.



Ed Balicki
City of Beacon Water Department
July 25, 2017
Page 3

Detailed Water Treatment Plant Evaluation

If requested by the City, B&L will complete a capacity analysis and in depth review of all components of the plant including building system, electrical service, generator, plant unit processes etc. This evaluation will require two additional site visits.

Storage Capacity Evaluation

Similar to the source capacity evaluation, B&L proposes a desk top review of the available storage in the current system and compare it to current regulations and expected short term and long term water needs. The capacity evaluation will be summarized in a memo. In addition, if the City provides the latest tank inspection reports for the four tanks we will review and summarize the current needs of the tanks.

Distribution System Evaluation – Base Model

Prepare a partial hydraulic model of the system including water sources, treatment plant, storage tanks and primary distribution mains 8-inch diameter and larger. Water modeling software will be used. Fire flow tests will be completed by B&L and City staff as needed to assist in the calibrating of the model. Three (3) field days of testing by one B&L staff engineer is included.

Once the existing system model is developed and calibrated, the model would be used to simulate the existing system under base scenario, winter and summer average day scenarios and the summer peak day scenario. Proposed system improvement alternatives would also be simulated under the above noted simulations including:

- New storage tank on-line at various (up to three) locations;
- New transmission main improvements (up to three options)
- New interconnections with Town of Fishkill (up to three options)
- New developments in the City (up to three options)

The partial water model will include an updated system map from the software. This map will be a pipe diagram including pipe size and type of pipe (as information is available from the City). No field work is included in the development of the map.

Distribution System Evaluation – Full Model

Services would be similar to that for the partial model except all distribution pipes would be included. As an alternative to a full model, the City could consider the partial model initially as described above and then annually add to the model any newly constructed infrastructure and the smaller mains. This phased approach could take up to three years to completed depending upon the City.

Preparation of Preliminary Engineering Report

The above evaluations would be finalized into a Preliminary Engineering Report (PER) which would be used to develop a funding strategy for the City to obtain affordable financing. Three copies of the draft PER would be provided for City review. Once appropriate comments are addressed, ten copies of the final report would be provided.

The report would include the evaluation of the existing system, proposed recommendations as noted in each task above, opinions of probable project cost to implement capital improvements and impacts to water rates. A funding strategy would be developed and included. Note that no funding applications are included at this time.



Ed Balicki
City of Beacon Water Department
July 25, 2017
Page 4

Three meetings are included. Review evaluations / project status meeting, review draft report meeting and present the final report to the council and public.

Fee Estimate

B&L is available to proceed immediately with the study based on the lump sum fees identified below.

Review of Source Capacity Safe Yield	\$10,000
Reservoir Bathymetric Survey Allowance	\$30,000
Cursory Water Treatment Plant Evaluation	\$ 8,000
Storage Capacity Evaluation	\$ 5,000
Distribution System Evaluation – Base Model	\$25,000
Preparation of Preliminary Engineering Report	<u>\$15,000</u>
Subtotal	\$93,000

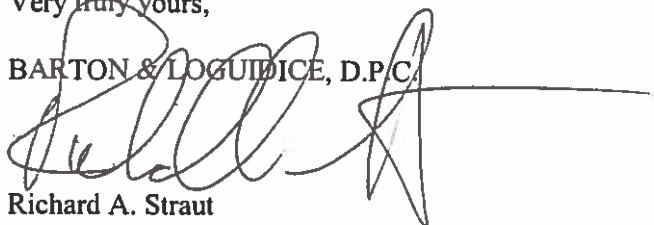
If the Detailed Water Treatment Plant Evaluation is included then an additional fee of \$10,000 would be included for a total fee of \$103,000 (\$93,000 plus \$10,000).

If the Distribution System Evaluation – Full Model is included then an additional \$25,000 would be included for a total fee of \$128,000 (\$103,000 plus \$25,000).

If you have questions or concerns regarding this proposal, please do not hesitate to call Don Fletcher or myself. If this proposal meets with your approval, please authorize with countersignature in the authorization block below. We thank you for the opportunity to assist you with this project.

Very truly yours,

BARTON & LOGUIDICE, D.P.C.


Richard A. Straut
Executive Vice President

DHF/
Attachment

Authorization

Barton & Loguidice, D.P.C., is hereby authorized by the City of Beacon ("Owner") to proceed with the services described herein in accordance with the attached Terms and Conditions.

Authorized Signature and Name

Date

STANDARD TERMS AND CONDITIONS
for
PROFESSIONAL ENGINEERING SERVICES
provided by
BARTON & LOGUIDICE, D.P.C. ("ENGINEER")

The OWNER and the ENGINEER, for themselves, their successors and assigns, have mutually agreed and do agree with each other as follows:

1.0 Basic Agreement

Engineer shall provide, or cause to be provided, the services set forth in the proposal to which these terms and conditions are attached (PROPOSAL), and Owner shall pay Engineer for such Services as set forth in PROPOSAL. The PROPOSAL, in conjunction with these terms and conditions, is referred to herein as "Agreement".

2.0 Payment Procedures

Engineer will prepare a monthly invoice in accordance with Engineer's standard invoicing practices and submit the invoice to Owner. Invoices are due and payable within 30 days of the date of the invoice. If Owner fails to make any payment due Engineer for services and expenses within 30 days after the date of Engineer's invoice, the amounts due Engineer will be increased at the rate of 1.0% per month (or the maximum rate of interest permitted by law, if less) from said thirtieth day. In addition, Engineer may, without liability, after giving seven days written notice to Owner, suspend services under this Agreement until Engineer has been paid in full all amounts due for services, expenses, and other related charges.

3.0 Additional Services

If mutually agreed by Owner and Engineer, or if required because of changes in the Project, Engineer shall furnish services in addition to those set forth in the PROPOSAL if requested by the Owner. Owner shall pay Engineer for such additional services as follows: (1) as mutually agreed by Owner and Engineer, or (2) an amount equal to the cumulative hours charged to the Project by each class of Engineer's employees times standard hourly rates for each applicable billing class; plus reimbursable expenses and Engineer's consultants' charges, if any.

4.0 Termination

If Engineer's services related to the project are terminated for any reason, Engineer shall be compensated for time plus reasonable expenses associated with demobilizing personnel and equipment, and, if requested in writing by the OWNER, for completion of tasks whose value would otherwise be lost, to prepare notes as to the status of completed and uncompleted tasks, and to assemble Project materials in orderly files.

5.0 Controlling Law

This Agreement is to be governed by the law of the state in which the Project is located.

6.0 Successors, Assigns, and Beneficiaries

Owner and Engineer each is hereby bound and the partners, successors, executors, administrators, and legal representatives of Owner and Engineer (and to the extent permitted herein the assigns of Owner and Engineer) are hereby bound to the other party to this Agreement and to the partners, successors, executors, administrators, and legal representatives (and said assigns) of such other party, in respect of all covenants, agreements, and obligations of this Agreement. Neither Owner nor Engineer may assign, sublet, or transfer any rights under or interest (including, but without limitation, moneys that are due or may become due) in this Agreement without the written consent of the other, except to the extent that any assignment, subletting, or transfer is mandated or restricted by law. Unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under this Agreement.

7.0 General Considerations

A. The standard of care for all professional engineering and related services performed or furnished by Engineer under this Agreement will be the care and skill ordinarily used by members of the subject profession practicing under similar circumstances at the same time and in the same locality. Engineer makes no warranties, express or implied, under this Agreement or otherwise, in connection with Engineer's services. Engineer and his consultants may use or rely upon the design services of others, including, but not limited to, contractors, manufacturers, and suppliers.

B. Engineer shall not at any time supervise, direct, or have control over any contractor's work, nor shall Engineer have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected or used by any contractor, for safety precautions and programs incident to a contractor's work progress, nor for any failure of any contractor to comply with laws and regulations applicable to contractor's work.

C. Engineer neither guarantees the performance of any contractor nor assumes responsibility for any contractor's failure to furnish and perform its work in accordance with the contract between Owner and such contractor.

D. Engineer shall not be responsible for the acts or omissions of any Contractor, Subcontractor, or Supplier, or of any of their agents or employees or of any other persons (except Engineer's own agents, employees, and Consultants) at the Site or otherwise furnishing or performing any Work; or for any decision made regarding the Contract Documents, or any application, interpretation, or clarification, of the Contract Documents, other than those made by Engineer.

E. All design documents prepared or furnished by Engineer are instruments of service, and Engineer retains an ownership and property interest (including the copyright and the right of reuse) in such documents, whether or not the Project is completed.

F. To the fullest extent permitted by law, Owner and Engineer (1) waive against each other, and the other's employees, officers, directors, agents, insurers, partners, and consultants, any and all claims for or entitlement to special, incidental, indirect, or consequential damages arising out of, resulting from, or in any way related to the Project, and (2) agree that Engineer's total liability to Owner under this Agreement shall be limited to \$50,000 or the total amount of compensation received by Engineer pursuant to the PROPOSAL, whichever is greater.

G. The parties acknowledge that Engineer's scope of services does not include any services related to a Hazardous Environmental Condition (the presence of asbestos, PCBs, petroleum, hazardous substances or waste, and radioactive materials) except as may be specifically defined in the Scope of Services. If Engineer or any other party encounters a Hazardous Environmental Condition, Engineer may, at its option and without liability for consequential or any other damages, suspend performance of services on the portion of the Project affected thereby until Owner: (i) retains appropriate specialist consultants or contractors to identify and, as appropriate, abate, remediate, or remove the Hazardous Environmental Condition; and (ii) warrants that the Site is in full compliance with applicable Laws and Regulations.

H. The services to be provided by Barton & Loguidice under this Agreement DO NOT INCLUDE advice or recommendations with respect to the issuance, structure, timing, terms or any other aspect of municipal securities, municipal derivatives, guaranteed investment contracts or investment strategies. Any opinions, advice, information or recommendations provided by Barton & Loguidice are understood by the parties to this Agreement to be strictly engineering opinions, advice, information or recommendations. Barton & Loguidice is not a "municipal advisor" as defined by 15 U.S.C. 78o-4 or the related rules of the Securities and Exchange Commission. The other parties to this Agreement should determine independently whether they require the services of a municipal advisor.

8.0 Dispute Resolution

Owner and Engineer agree to negotiate all disputes between them in good faith for a period of 30 days from the date of notice by either party of the existence of the dispute. If the parties fail to resolve a dispute through negotiation then Owner and Engineer agree that they shall first submit any and all unsettled claims, counterclaims, disputes, and other matters in question between them arising out of or relating to this Agreement or the breach thereof ("Disputes") to mediation by a mutually acceptable mediator. Owner and Engineer agree to participate in the mediation process in good faith and to share the cost of the mediation equally. The process shall be conducted on a confidential basis, and shall be completed within 120 days. If such mediation is unsuccessful in resolving a Dispute, then (1) the parties may mutually agree to a dispute resolution of their choice, or (2) either party may seek to have the Dispute resolved by a court of competent jurisdiction.

9.0 Accrual of Claims

All causes of action between the parties to this Agreement including those pertaining to acts, failures to act, failures to perform in accordance with the obligations of the Agreement or failures to perform in accordance with the standard of care shall be deemed to have accrued and the applicable statutes of limitations shall commence to run not later than either the date of Substantial Completion for acts, failures to act or failures to perform occurring prior to Substantial Completion, or the date of issuance of the Notice of Acceptability of Work for acts, failures to act or failures to perform occurring after Substantial Completion.

10.0 Total Agreement

This Agreement constitutes the entire agreement between Owner and Engineer and supersedes all prior written or oral understandings. In the event of a conflict with contractual provisions in a Purchase Order authorization related to this Agreement, the provisions of this Agreement shall control. This Agreement may only be amended, supplemented, modified, or canceled by a duly executed written instrument.

Regional Water System Evaluation under the Shared Municipal Services Initiative

City of Mechanicville, Town of Stillwater, and Village of Stillwater, New York

Background

B&L assisted the City of Mechanicville, Town of Stillwater and Village of Stillwater, NY, with an evaluation of potential water system shared services opportunities between each community. A total of seven regional alternatives were evaluated including:

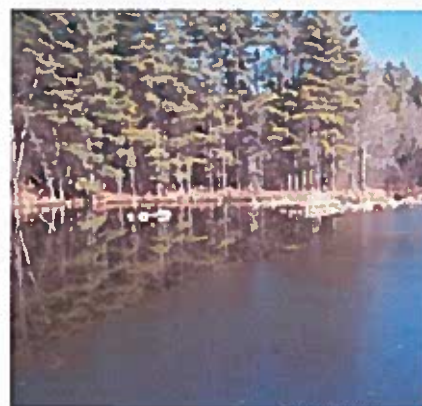
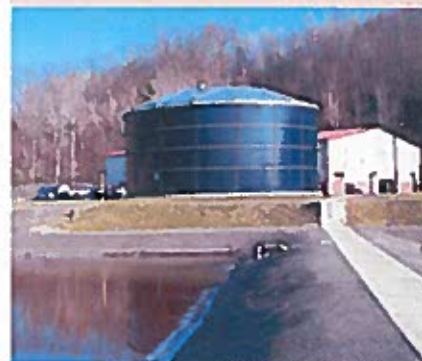
- Upgrading the City of Mechanicville source and treatment
- Connection to the Saratoga County Water Authority system
- Connection to various regional private water systems
- Regional surface water source and treatment
- Regional groundwater source and treatment
- Connection to the Town of Halfmoon Water System
- Upgrading the Village of Stillwater source and treatment

Our Services

- The B&L team evaluated the various shared services alternatives, provided recommended system improvements to the three communities' existing water systems
- B&L generated capital cost and operational and maintenance cost estimates, proposed consolidation alternatives and other means to improve the overall cost burden.
- As part of the evaluation, **the Mechanicville raw water supply, the Mechanicville Reservoir, was identified as nearing its safe yield capacity.** It was revealed that if the City chose to continue to supply water to its residents, significant upgrades and improvements would be required for the raw water source and associated infrastructure.
- **B&L completed a bathymetric survey of the Mechanicville Reservoir** and a dredging concept plan and recommended treatment plant improvements to determine whether it was a feasible option for the City.
- **B&L developed a hydraulic model of each community** to determine the existing condition of each distribution system and prioritize needed improvements.
- B&L completed a disinfectant byproducts review using the water model to simulate the water age throughout the systems in order to confirm the sample locations chosen by the communities to meet regulatory requirements.
- B&L completed the engineering assessment of the Mechanicville Reservoir dam to review its condition and prepared concept level planning, design and permitting for dredging of the reservoir which contains about 285,000 CY of sediment.
- B&L assisted the City in securing a Beneficial Use Determination (BUD) for the WTP residuals. Residuals are dredged from the lagoons and hauled off site by a contractor for use in making topsoil. B&L assisted the City in troubleshooting operational and SCADA issues at the WTP and provided part-time operations assistance for several months.
- B&L provided final design, bidding and construction phase services for a \$4M NYSEFC funded project that included source connection to SCWA, various WTP improvements, rehabilitation of the two water storage tanks, various distribution improvements, and replacement of all water meters. B&L also assisted with a \$1M USDA funded project for dredging of the lower raw water reservoir and dam improvements at the upper reservoir.

Client:

Dennis Baker
Mayor
City of Mechanicville
36 North Main Street
Mechanicville, NY 12118
(518) 664-8331
Dennis.baker@mechanicvilleny.gov



Total Project Cost: \$5,000,000
Completion Date: On Going

Water System Improvements

Town of Rosendale, New York

Background

B&L evaluated the Town's water system and prepared a Preliminary Engineering Report identifying the system weaknesses and providing prioritized recommendations with associated capital costs. B&L also assisted the Town with submission of a DWSRF Hardship application for financing through the New York State Environmental Facilities Corporation (EFC).

B&L provided the Town with recommended improvements to their water treatment plant and distribution system. The following improvement alternatives were recommended for the Village water system:

1. **Water Source:** Decommission Well #1 and increase capacity at the WTP to use only Still Pond as a source.
2. **Water Treatment Plant:** Replace all pressure media filter systems and install one additional system to provide a standby unit. Expand the treatment plant building south by 10 feet to accommodate the fifth filter system, process piping and chemical feed system modifications, HVAC improvements to accommodate building expansion and installation of new master control panel and computer workstation.
3. **Distribution System:** Replace approximately 3,050 feet of aging water mains in Town Center.
4. **Storage System:** Remove the cathodic protection system, sandblast and repaint the Sand Hill Water Storage Tank with an interior zinc coating for sacrificial anode properties (same protection cathodic protection provides).
5. **Water Usage Metering:** Install remote transmitters on recently replaced, manually read water meters and replace approximately 401 aged water meters with new radio-read water meters. Install a mobile automated meter reading system to allow Town personnel to record water meter data as they drive by people's houses.

In 2014, B&L submitted an application to NYSEFC for financing through the DWSRF program. B&L successfully helped the Town receive \$2,000,000 in grant funding and a \$1,048,800 interest-free loan through the NYSEFC.

B&L completed field services, final design services, necessary permits, and regulatory approvals for the recommended improvements.

Client:

Jeanne Walsh
Town Supervisor
Town of Rosendale
1915 Lucas Avenue
Cottkill, NY 12419
(845) 658-3159 ext.3
supervisor@townofrosendale.org



Still Pond Reservoir



Still Pond Water Treatment Plant Existing pressure Media Filter Systems

Estimated

Total Project Cost: \$ 3.05 M
Completion Date: On-going

Water System Improvements

Village of Ellenville, Ellenville, New York

Background

Barton & Loguidice prepared a Water System Facilities Plan to evaluate the Village of Ellenville's water supply system, identify and prioritize short- and long-term distribution, storage, groundwater source supply and treatment improvements, and operational/maintenance needs. As part of the report, B&L evaluated the various water sources, storage tanks and system demand requirements.

A hydraulic model of the Village's water system was developed using flow testing data to determine pipe flow characteristics in specific areas as necessary to calibrate the model. B&L retained the services of a qualified surveyor to identify critical elevations in the water system necessary for a proper analysis of system operation and then ran simulations for a range of scenarios.

Key Features

In the final Water System Facilities Plan, B&L identified both the short- and long-term steps that need to be taken to improve distribution, storage and groundwater source supply. Based on evaluation, the following improvements were recommended and are currently being designed and constructed:

- Installation of approximately 40 gate valves in the distribution system to help isolate sections of the system
- Incorporation of a new SCADA system to allow the Village greater supervisory and control capabilities in the system
- Installation of a new booster pump station to service the houses along Mountain Road
- Replacement of five (5) water mains to increase pipe capacity and repair deficient pipes
- Installation of a 12-inch main transmission main from well field to Siegel Drive to provide redundancy in the system and allow better pump operation
- Sandblasting and recoating of the interior and exterior of the Jean Street water storage tank
- Installation of a generator at the Westwood Booster Pump Station
- Upgrades to the Fallsview well site, including building modifications, replacement of pumps and installation of a backup generator

In 2012, B&L submitted an application to NYSEFC for financing through the DWSRF program. B&L has successfully helped the Village receive a \$2 million dollar grant and a \$5.1 million dollar 0% interest loan through the NYSEFC.

Final design of the proposed improvements are currently being advanced with the help of B&L. As part of the project, B&L coordinated with subcontractors to complete tank inspections, site survey, soil borings, archeological investigations and leak detection services. B&L assisted the Village with funding coordination, wetland delineations, and necessary permits and regulatory approvals.

B&L is assisting the Village by preparing final design plans and contract documents for all the recommended improvements. The construction of the isolation valves, Mountain Road Booster Station and SCADA improvements will begin Spring 2014. It is anticipated that the remaining improvements will be out to bid early Summer 2014. B&L

Client:

Joe Stoeckeler, Jr.
Village Manager
Village of Ellenville
Government Center
2 Elting Court
Ellenville, NY 12428
(845) 647-7080
jstoeckeler@villageofellenville.com



Total Project Cost: \$7,300,000
Completion Date: Ongoing

Water System Evaluation

Village of Monticello, New York

Background

B&L evaluated the Village's aged water system and prepared a Preliminary Engineering Report identifying the system weaknesses and providing prioritized recommendations with associated capital cost and user impacts costs. B&L also assisted the Village with submission of a pre-application package for financing through the United States Department of Agriculture (USDA) Rural Development agency.

B&L provided the Village of Monticello with recommended improvements to their water treatment plant and distribution system. The following improvement alternatives were recommended for the Village water system:

- Priority 1 Replace East Dillon Road Pump Station, rehabilitate West Broadway Pump Station header piping;
- Priority 2 Water Treatment Plant Improvements: replace equipment in four flocculation chambers, replace chlorine gas feed system, and replace backwash and high lift pumps;
- Priority 3 Loop water line dead ends;
- Priority 4 Replace aging water mains;
- Priority 5 Sandblast and repaint two Hospital Hill standpipes and install chlorine booster station;
- Priority 6 Replace approximately 100 broken gate valves;
- Priority 7 Replace tuberculated water mains;
- Priority 8 Replace damaged hydrants;
- Priority 9 Insulate Chemical Building ceiling at WTP; and,
- Priority 10 Develop and integrate two existing wells by installing a well house and treatment system and install a ductile iron transmission main to connect to the existing system.

In 2011, B&L retained the services of Conrady Consultant Services (Conrady) to evaluate the physical condition of their 0.32-MG and 0.50-MG riveted steel standpipes after the Village found and repaired a leak from the 0.50-MG tank. Conrady performed a structural, sanitary and coating inspection of the tanks' interior and exterior. The interior was inspected by a remotely operated vehicle (ROV), which was incorporated as part of the report. The results of the inspection identified that both tanks' interior and exterior required repainting. Several modifications were recommended to meet OSHA safety regulations. The wall thickness of the 0.50-MG was found to be thinning in select areas; therefore, corrective actions were recommended to avoid future leaks.

B&L assisted the Village with an USDA-RD Funding Application which resulted in the Award of a \$1.25 million grant and a \$6 million low interest loan for upgrades to its Water System. Additionally, B&L submitted an application through the 2015 Consolidated Funding Application and the Village was awarded a \$600,000 grant through the HUD CDBG Program.

Client:

Phil Klemen
Water/Sewer Superintendent
Village of Monticello
2 Pleasant Street
Monticello, NY 12701
(845) 794-4911



LEGGETTE, BRASHEARS & GRAHAM, INC.

PROFESSIONAL GROUNDWATER AND ENVIRONMENTAL ENGINEERING SERVICES

4 RESEARCH DRIVE, SUITE 204
SHELTON, CT 06484
(203) 929-8555
FAX (203) 926-9140
www.lbgweb.com

July 28, 2017

Mr. Anthony J. Ruggiero, M.P.A.
City Administrator, City of Beacon
City Hall
1 Municipal Plaza
Beacon, NY 12508

Via Electronic Transmission

RE: **PROPOSAL**
Water-System Evaluation
City of Beacon, New York

Dear Mr. Ruggiero:

Leggette, Brashears & Graham, Inc. (LBG) is pleased to provide the City of Beacon, in Dutchess, New York, with this proposal to complete a water-system evaluation to assess the system's existing capacity and potential future needs. Our proposal includes a summary of the proposed scope-of-work (SOW) for the analysis and the estimated cost to complete the proposed SOW. In addition, at the end of this document, costs have also been provided for conducting work to verify aspects of the safe yield analysis conducted in 2014 for the City of Beacon and investigate options to develop other water resources.

WATER-SYSTEM EVALUATION

LBG understands that the City of Beacon (the City) is seeking to conduct an evaluation of the existing water system. The evaluation will include a review of the capacity of the existing sources (groundwater and surface water) and a review of the current and historical water withdrawal and consumption information. The water withdrawal and consumption information will be used to calculate current and future water use based on current and future population data, commercial usage and industrial usage. Other aspects of the evaluation will include a review of available "finished" water storage capacity and a comparison of this value to future water needs, a review of existing water treatment methods and capacity and a comparison of this capacity value to future water needs. Based on the assessment of these water system

components, LBG will provide an analysis and recommendations regarding the timeframe for potential upgrades in the water system, including adding new sources, upgrading storage capacity and increasing treatment capacity in the future.

For this SOW, LBG has assumed that the City will provide the necessary information to conduct the above described assessment, including a safe yield analysis of the City's existing groundwater and surface water sources; Water Systems Operation Reports, customer billing/consumption data, and the New York State Department of Environmental Conservation (NYSDEC) annual Water Withdrawal Reporting Forms (WWRFs) for the past several years; available information regarding current and future population projections for the City; the capacity of the existing "finished" water storage facilities; the capacity of the existing water treatment facilities; and distribution system maps that display the location of the reservoirs, groundwater sources, the distribution system piping and the atmospheric storage tanks. It is understood that the City has completed a Comprehensive Plan (dated 2017) that will be incorporated into the evaluation. Based on a cursory review, it appears that the Comprehensive Plan provides historical population data and estimates the future population for only the year 2021. Our evaluation will include population estimates for the 10-year (2027) and 20-year (2037) planning periods. Additional information that will need to be provided by the City includes identification of vacant and undeveloped lots that are available for future development and their zoning designations, preferably in GIS format.

The proposed SOW is designed to utilize existing data for the City of Beacon's water system and future population estimates and development projections to assess its ability to meet future growth and determine when storage, new source and treatment upgrades may be required. Using the water operation reports, consumption information and WWRFs provided by the City, LBG will calculate the current and historical water demands for the water system. The water consumption records should include separate data for residential, commercial, industrial, municipal and institutional water users (non-residential water users). Using this information, a per capita water usage value will be calculated for the residential population along with a usage value for the non-residential water users. The data will be utilized to determine if the existing water source (groundwater and surface water) can meet future increases in demand. Similarly, this calculated increase in water usage will be compared to the existing "finished" water storage and water treatment capacities to assess the timeframe for when upgrades to these facilities would be needed.

Additionally, general costs for the upgrades to the “finished” water storage will be provided. These general costs will be for materials and construction only and would not include the cost for land procurement, design costs or permitting requirements.

Below is a summary of the tasks to be conducted by LBG to complete the water system assessment for the City of Beacon.

Assess Existing Water Source Safe Yield Information - \$1,800-\$2,500

- Project team communication to obtain necessary documents regarding water source safe yield, withdrawal and consumption data, existing storage and treatment capacity for the City and distribution system maps.
- Review safe yield information for groundwater and surface water sources that currently supply the City.
- Review the City of Beacon Comprehensive Plan.

Assess Existing Water Withdrawal and Consumption Data - \$5,000-\$7,500

- Review existing Water System Operation Reports and WWRFs to calculate current and historical average and peak water withdrawal for the system.
- Review water consumption data, WWRFs, and population information to calculate a per capita water usage value.
- Review non-residential user data to calculate water usage.
- Review information on vacant and undeveloped lots that are available for future build-out development and their zoning designations.
- Display available lot data on the water distribution system map.^{1/}
- Converting information into GIS format for analysis.
- Conduct an assessment of future population increases, per capita water usage and non-residential user data to estimate future increases in water consumption.
- Compare estimated future increases in water consumption to existing source capacity to determine when an increase in source capacity would become necessary.

^{1/} LBG recommends obtaining a cost from Lanc & Tully Engineering and Surveying P.C. to prepare a current distribution system map.

Assess “Finished” Water Storage Information - \$1,500

- Review existing “finished” water storage capacity.
- Compare existing storage capacity to current and future water usage to assess timeframe for potential upgrade.
- Provide general cost estimate for materials and construction for water storage upgrade.

Assess Water Treatment Facility Information - \$1,500

- Review existing water treatment facility capacity information.
- Compare existing treatment capacity to current and future water usage to assess timeframe for potential upgrade.
- Project team communication with City and City’s Engineering Consultant to assess potential cost for treatment upgrades.

Summary Report and Recommendations - \$5,000

- Prepared report summarizing the water source safe yield information; water withdrawal, consumption and per capita water usage values; existing water storage and treatment capacity; potential timeframe for increase in water storage and treatment; and estimated costs for water storage upgrades.

WATER SUPPLY EVALUATION TOTAL..... \$14,800-\$18,000

SAFE YIELD VERIFICATION AND BATHYMETRIC SURVEY

At the request of the City, LBG has also reviewed the Safe Yield Analysis that was conducted in 2014 of the City’s raw water supply. A desktop evaluation of the reservoirs’ capacity was conducted and the methodology utilized was valid. However, no field data collection was conducted to verify the results of the desktop study. If field verification of the data is desired, LBG would recommend conducting a quarterly data collection program by measuring stream inflows into the reservoirs over a one year period to confirm that the approximated/correlated flows used in the analysis were valid or if adjustments are warranted.

Additionally, the storage volume calculations for the reservoirs were based on dam evaluation work conducted by O'Brien and Gere. However, it is unknown if bathymetric surveys (i.e. measurements of the depths and contours of the reservoirs' bottom topography) exist for the reservoirs. The bottom contours of a reservoir can change over time from influx and shifting of sediments. If confirmation of the reservoirs' storage values is desired, then an updated bathymetric survey of the reservoirs would need to be conducted. LBG, in conjunction with a Licensed Surveyor from Lanc & Tully Engineering and Surveying P.C. (Lanc & Tully), can conduct bathymetric surveys of the four reservoirs which comprise the City's surface-water supply. LBG will develop a sampling grid for each reservoir and will use a jon boat and sounding equipment to measure total depth at each grid sample location. Lanc & Tully will survey each location and the perimeter of the reservoirs using a high-resolution GPS unit. The depth and survey data will be used to prepare a GIS-generated, bathymetric survey map showing the reservoir depth contours, which will be used to calculate the storage volume of each of the reservoirs for use in determining stage-capacity relationship. A general cost estimate has been provided below for the completion of the bathymetric survey work; however, LBG would need to conduct a site visit to determine boat access at the reservoirs and confirm that the assumed timeframe for collection of the field data is accurate.

Safe yields for the City's groundwater supply wells were also reported in the Safe Yield Analysis, but were based on previous reported values established by others. It does not appear as if recent yield tests on the wells have been conducted to confirm their current yield capacities or to determine whether surplus capacity may be available. Yields in groundwater supply wells can change over time as a result of well biofouling, mineral deposition, or sedimentation. Conducting water-level data collection and/or yield testing can determine if well yields have diminished, whether well redevelopment is warranted to conduct maintenance on the wells, or if additional yield is available from the wells.

Assuming that all wells are accessible for water-level measurement collection, LBG can conduct short-term operational yield tests on the wells to compare current yield and water-level data to historic information. LBG would collect water-level measurements, either manually or with pressure transducers installed in the wells, over a period of three to five days while the wells are in operation. The water-level measurements and yield of the wells during the tests will be used to project long-term (180-day) water-level drawdown scenarios to assess the wells' safe yields.

Quarterly Stream Flow Measurement (4 Quarters) \$4,000-\$6,000

Conduct site visit to determine access to inflow streams to conduct stream gaging and set up stream gaging locations.

Complete four quarterly stream gaging events of main inflow stream channels that enter the City's reservoirs.

Process stream flow data collected and compare to the data from the Safe Yield Analysis to confirm or adjust correlation values used and calculated safe yield.

Bathymetric Survey - \$9,500-\$12,500

- Conduct bathymetric survey of reservoir system, includes rental of boat, and GPS/Sounding equipment to conduct the survey.
- Preparation of a bathymetric survey map by Lanc & Tully and LBG.

Groundwater Safe Yield Evaluation - \$2,500-\$3,500

- Review existing well construction and yield testing information and reports for supply wells and evaluate current well use information (yield, water level, daily withdrawal).
- Conduct short-term operational well tests by monitoring water levels for three to five days to assess current yields and water-level drawdown in the supply wells (assumes each well is accessible for measurement collection).
- Provide summary report detailing existing well information, results of operational well tests and well safe-yield analysis. Provide recommendations based on the results of testing.

SAFE YIELD VERIFICATION/BATHYMETRIC SURVEY TOTAL \$16,000-\$22,000

OTHER WATER RESOURCES

LBG will evaluate options to develop additional supply from other water resources. The evaluation will include identifying any permits that will be required from the New York State regulatory agencies.

OTHER WATER RESOURCES TOTAL \$1,500-\$2,500

The following table summarized the costs associated with the above described SOWs.

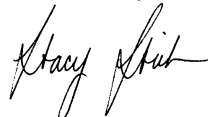
TASKS	TOTAL COST ESTIMATE
Water System Evaluation	\$14,800 - \$18,000
Safe Yield Verification and Bathymetric Survey	\$16,000 - \$22,000
Other Water Resources	\$1,500 - \$2,500

This cost proposal is limited to the proposed SOW and does not include the cost of any additional work that may be recommended based on the results of the SOW. Several of the tasks include site visits that need to be conducted to determine actual field conditions. If the site visits indicate conditions exist that are outside the SOWs provided, LBG will contact the City. If it is determined that a change in the SOW is warranted, a separate proposal will be prepared at that time.

Should you have any questions about our proposal, please do not hesitate to contact us.

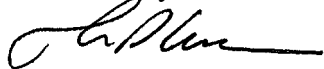
Very truly yours,

LEGGETTE, BRASHEARS & GRAHAM, INC.



Stacy Stieber, CPG
Associate/Hydrogeologist

Affirmed by:



Thomas P. Cusack, CPG
Senior Vice President

SS:cmm

cc: Ed Balicki

John Russo – Lanc & Tully

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City of Beacon Workshop Agenda
7/31/2017

Title:

Discussion of Proposed Building Moratorium

Subject:

Background:

ATTACHMENTS:

Description

K&B Memo

LL Draft Moratorium

Type

Cover Memo/Letter

Local Law

LOCAL LAW NO. ____ OF 2017

**CITY COUNCIL
CITY OF BEACON**

**LOCAL LAW REGARDING
ENACTMENT OF A MORATORIUM**

A LOCAL LAW to
enact moratorium on
residential development

BE IT ENACTED by the City Council of the City of Beacon as follows:

SECTION 1. TITLE

This local law shall be entitled, “A Local Law, pursuant to Municipal Home Rule Law § 10, to enact a moratorium with respect to land use approvals to review certain special use, site plan, and subdivision applications involving residential development, including single family and mixed use development within the City of Beacon, by means of amending Chapter 223, Zoning, of the Code of the City of Beacon.”

SECTION 2. LEGISLATIVE INTENT AND PURPOSE

The City Council hereby finds as follows:

1. The City of Beacon adopted a Comprehensive Plan in 2007 and updated it in 2017. These Comprehensive Plans encouraged development within the City of Beacon, with a special focus on opportunities for residential development along Main Street’s Central Business District, the Central Main Street, Linkage and Waterfront Districts. However, in the past approximately three years 1,200 residential units have been approved or are pending approval. The City is concerned that such a large number of housing in such a short time will stress the City’s water supply. The City’s vision was that development would be more gradual and take place over a period of years. The City’s water supply is of special concern. The City has enough water to maintain a population of approximately 17,800 people, and the additional units (approved, but not built, pending before the land use boards and those preliminarily discussed with the Building Department) have pushed the population close to that number. In connection with water supply, the City hired Leggette, Brashears & Graham, Inc (LBG) to look into the development of a new well on the existing Water Treatment

Plant property. That location was found unsuitable for potable water because the property does not have a sufficient water yield. The accelerated development of housing within the City will lead to greatly increased consumption of services and resources.

2. The City is participating in a grant awarded by the NYS Department of State, along with other communities, to develop a Community Profile, Housing Profile and Community Development Plan for Beacon. Patterns for Progress is administering this work. The Community Development Plan will include the data and trends from the community and housing profiles as well as a set of recommendations and strategies for the City to aid in its continuing revitalization efforts. The plan will include a) Research and data trend analysis based on the Community and Housing Profiles; b) Major project pipeline report; c) Community Engagement and Visioning sessions with summary reports; and d) Recommendations and strategies for each community.

~~3. On July 6, 2017 the City of Beacon Board of Education adopted Resolution 070517A to voice its concern over the sudden and unanticipated increases in student enrollment. The Board of Education believes that the surge in the City's population will adversely affect the financial and physical capabilities of the District to educate its students. By its Resolution, the Board of Education made a formal request that the Beacon School District be designated as an interested agency under State Environmental Quality Review procedures to review and comment on variances and site plans for multi-unit residences that come before any land use approval board.~~

4.3. It is the intent and purpose of this Local Law to establish a temporary moratorium on residential development in order to protect the City and its residents, businesses and visitors from the potential impacts of new development on the City's water supply given the accelerated rate of development within the City. Imposition of a moratorium will allow the City sufficient time to conclude the preparation of comprehensive studies and plans for the City's water supply and the regulation of residential development within the City of Beacon, including those studies being prepared by Patterns for Progress referenced above.

SECTION 3. MORATORIUM

1. Effective immediately and continuing for a period of six (6) months following the date on which this Local Law is filed with the Secretary of State, no application for special use permits, site plan approval, or subdivision approval will be processed by the City or any land use board, no submission of any application or consideration of any application for any permit or approval shall be accepted, and no permit or approval will be issued by the City for the establishment of new residential or mixed use development within the City until this ordinance has expired or has been repealed according to applicable law.

2. Any application for residential development submitted to the City before July 3, 2017 or pending before a land use board as of the July 11, 2017 Planning Board agenda ~~and or~~ the July 18, 2017 Zoning Board of Appeals Agenda is exempt from this moratorium. Any application seeking a modification or extension of an existing approval that does not increase the density (by unit or bedroom count) shall be exempt from this moratorium.
3. The City Council may, by resolution, terminate this moratorium prior to its expiration, or alternatively, extend the moratorium for a period of ninety (90) days or such other time period, as the City Council, in its sole discretion, deems necessary to allow for the comprehensive study of the impacts of residential development within the City and preparation and adoption of regulations pertaining to such development.
4. In the event this Local Law causes a severe and substantial financial hardship to a property owner, an application may be made in writing to the City Council requesting an exemption from the provisions herein. After due notice and a public hearing on such application, the City Council may grant an exemption with such conditions as it may deem reasonable and necessary, provided such exemption is the minimum relief necessary. No exemption shall be granted pursuant to this section, except upon a determination by the City Council that severe and substantial financial or economic hardship was directly created as a result of the application of the provisions of this Local Law.
5. Pursuant to Municipal Home Rule Law Section 10, this Local Law shall supersede any inconsistent provisions of New York State General City Law for the entire duration of this moratorium, including any extension thereof.

SECTION 5. SEPARABILITY

The provisions of this Local Law are separable and if any provision, clause, sentence, subsection, word or part thereof is held illegal, invalid or unconstitutional, or inapplicable to any person or circumstance, such illegality, invalidity or unconstitutionality, or inapplicability shall not affect or impair any of the remaining provisions, clauses, sentences, subsections, words or parts of this Local Law or their petition to other persons or circumstances. It is hereby declared to be the legislative intent that this Local Law would have been adopted if such illegal, invalid or unconstitutional provision, clause, sentence, subsection, word or part had not been included therein, and if such person or circumstance to which the Local Law or part hereof is held inapplicable had been specifically exempt there from.

SECTION 6. EFFECTIVE DATE

This Local Law shall take effect immediately upon adoption and filing with the Secretary of State as provided by the Municipal Home Rule Law.

City of Beacon Workshop Agenda
7/31/2017

Title:

Budget Amendments

Subject:

Background:

ATTACHMENTS:

Description	Type
Budget Amendments for 8_7	Budget Amendment

Council Budget Amendments
August 7, 2017 Meeting

1. Amend the 2017 Law Budget to account for unanticipated expenses for March, April, May and June of 2017. Below is the proposed budget amendment:

Transfer to:

A -01-1420-450454-	EMPLOYEE DISCIPLINE - G	<u>\$ 66,867</u>
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Transfer from:

A -01-1990-400001-	CONTINGENCY FUND	<u>\$ 66,867</u>
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2. Amend the 2017 Public Building Budget to replace cameras at City Hall that were damaged by the weather. Below is the proposed budget amendment:

Transfer to:

A -01-1620-250000-	PURCHASE EQUIPMENT	<u>\$ 21,110</u>
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Increase Revenue:

A -03-3120-268000-	INSURANCE RECOVERIES	<u>\$ 11,852</u>
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Transfer from:

A -01-1990-400001-	CONTINGENCY FUND	<u>\$ 9,258</u>
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3. Amend the 2017 Budget to move amounts to Capital to fund the Capital Plan approved in April of 2017. Below is the proposed budget amendment:

Council Budget Amendments
August 7, 2017 Meeting

Transfer to:

A -11-9950-900300-	INTERFUND TRANSFER TO CAPITAL	<u>\$ 1,721,346</u>
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Transfer from:

A -0-0000-091100-	FUND BALANCE	<u>\$ 1,721,346</u>
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Transfer to:

F -11-9950-900300-	INTERFUND TRANSFER TO CAPITAL	<u>\$ 498,800</u>
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Transfer from:

F -0-0000-091100-	FUND BALANCE	<u>\$ 498,800</u>
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Transfer to:

G -11-9950-900300-	INTERFUND TRANSFER TO CAPITAL	<u>\$ 1,456,690</u>
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Transfer from:

G -0-0000-091100-	FUND BALANCE	<u>\$ 1,456,690</u>
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4. Amend the 2017 Recreation Budget to account for the approved Summer Camp program. Below is the proposed budget amendment:

Increase Revenue:

A -07-7140-200108-	SUMMER CAMP FEE	<u>\$ 49,753</u>
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Increase Expense:

A -07-7140-478100-	SUMMER PROGRAMS	6,620
A -07-7140-173100-	SUMMER PLAYGROUND COUNSELORS	42,325
A -07-7140-820000-	SOCIAL SECURITY	3,744
A -01-1980-400099-	MCTMT PAYROLL TAX	165
		<u>\$ 52,854</u>

Transfer from:

A -07-7140-200100-	RECREATION FEES	<u>\$ 3,101</u>
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Respectfully submitted,
Susan K. Tucker CPA

City of Beacon Workshop Agenda
7/31/2017

Title:

Confirming the Chairmanship of the Conservation Advisory Committee

Subject:

Background:

**City of Beacon Workshop Agenda
7/31/2017**

Title:

Matters Pertaining to Personnel

Subject:

Background:

City of Beacon Workshop Agenda
7/31/2017

Title:

Discussion of the Proposed Sale of City-Owned Real Property

Subject:

Background:

ATTACHMENTS:

Description	Type
36 N. Cedar 1	Backup Material
36 N. Cedar 2	Backup Material
Creek Drive 2	Backup Material
Creek Drive 3	Backup Material
Creek Drive 1.1	Backup Material
Creek Drive 1.2	Backup Material