ENVIRONMENTAL NOTIFICATION FORM

CITY OF HAVERHILL DEPT. OF PUBLIC WORKS WATER DIVISION MERRIMACK RIVER RADIAL COLLECTOR WELL AND RAW WATER MAIN

SUBMITTED ON BEHALF OF:
City of Haverhill DPW
Water Division
131 Amesbury Road
Haverhill, MA 01830

PREPARED BY:
Caron Environmental Consulting
247 Bragg Hill Road
Westminster, MA 01473

PROJECT ENGINEER:
Wright-Pierce
40 Shattuck Road; Suite 305
Andover, MA 01810

October 2017

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Environmental Notification Form

Environmental Notification Form

For Office Use Only

EEA#: _____

MEPA Analyst: _____

The information requested on this form must be completed in order to submit a document electronically for review under the Massachusetts Environmental Policy Act, 301 CMR 11.00.

Project Name: Proposed Radial Collection Municipal Well		
Street Address:309 East Broadway		
Municipality: Haverhill	Watershed: Merrimack River Basin	
Universal Transverse Mercator Coordinates:	Latitude:40° 47.616' N Longitude:71° 03.622' W	
Estimated commencement date: 4/1/2018	Estimated completion date:	
Project Type: Municipal Well & Water Mains	Status of project design: 20 %complete	
Proponent: City of Haverhill, Public Works Department, Water Division		
Street Address: 131 Amesbury Road		
Municipality: Haverhill	State: MA	Zip Code: 01830
Name of Contact Person: Charles Caron		
Firm/Agency: Caron Environmental Consulting	Street Address: 247 Bragg Hill Road	
Municipality: Westminster	State: MA	Zip Code: 01473
Phone: 978-874-5469	Fax:	E-mail: caronenv@aol.com

Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)?
☒Yes ☐No

If this is an Expanded Environmental Notification Form (ENF) (see 301 CMR 11.05(7)) or a Notice of Project Change (NPC), are you requesting:

a Single EIR? (see 301 CMR 11.06(8)) ☐Yes ☐No
a Special Review Procedure? (see 301CMR 11.09) ☐Yes ☐No
a Waiver of mandatory EIR? (see 301 CMR 11.11) ☐Yes ☐No
a Phase I Waiver? (see 301 CMR 11.11) ☐Yes ☐No
(Note: Greenhouse Gas Emissions analysis must be included in the Expanded ENF.)

Which MEPA review threshold(s) does the project meet or exceed (see 301 CMR 11.03)?
301 CMR 11.03 (4) 1b
Which State Agency Permits will the project require?

1) Department of Environmental Protections
   - Waterways Program Request for Determination
   - BRP WS 17- Approval to Site a Source and Conduct a Pumping Test for a Source greater than 70 gallons per minute
   - BRP WS 19- Approval of Pumping Test Report for a Source Greater than 70 gallons per minute
   - BRP WS 20- Approval to Construct a Source of 70 gallons per minute or greater

- BRP WS 32- Distribution Modifications for System that serves more than 3,300 people
- Possibly Water Management Act at the end of construction and prior to going on-line

2) Natural Heritage of Endangered Species Program approval for work in Estimated/Priority Habitat Areas

Identify any financial assistance or land transfer from an Agency of the Commonwealth, including the Agency name and the amount of funding or land area in acres: None Anticipated

Summary of Project Size & Environmental Impacts	Existing	Change	Total
LAND			
Total site acreage	68.33		
New acres of land altered		0.92	
Acres of impervious area	8.67	0.02	8.69
Square feet of new bordering vegetated wetlands alteration		0	
Square feet of new other wetland alteration		22,800 BLSF+ Riverfront	
Acres of new non-water dependent use of tidelands or waterways		0	
STRUCTURES			
Gross square footage	56,920	480 sf	57,400
Number of housing units	1	0	1
Maximum height (feet)	30	0	30
TRANSPORTATION			
Vehicle trips per day	6 (wellsite only)	1	7
Parking spaces	3 (wellsite only)	1	4
WASTEWATER			
Water Use (Gallons per day)	200 (estimate) (wellsite only)	0	200 (wellsite only)
Water withdrawal (GPD)	0 (wellsite only	7 MGD	7 MGD
Wastewater generation/treatment (GPD)	200 (estimate) (wellsite only)	0	200
Length of water mains (miles)	0	2.57	2.57
Length of sewer mains (miles)	0	0	0

Has this project been filed with MEPA before?
☐ Yes (EEA #_____) ☒ No

Has any project on this site been filed with MEPA before?
☒ Yes (EEA # 3475 and 10570) ☐ No

GENERAL PROJECT INFORMATION – all proponents must fill out this section

PROJECT DESCRIPTION:

Existing Conditions

The proposed radial collector well site is a residential parcel located along the Merrimack River at 309 East Broadway. The property consists primarily of grass fields. A thin tree line exists along East Broadway and the river. The property is used very little and is maintained by periodic cutting of the field

The transmission main route is along existing roadways, except for a short cross-country segment between Kenoza Street and the water treatment plant. The streets are paved and lightly traveled.

Background

The 2010 US Census placed the population of the City of Haverhill at approximately 61,000 persons of which approximately 85% are served by the public water system. Water demands assessed in a 2010 Comprehensive Water System Master Plan completed by Wright-Pierce noted water demands were slightly more than 6.0 MGD. A recent draft prepared by DCR to forecast water needs for the City of Haverhill's Water Management Act permit indicated water demands were trending downward and averaged less than 6.0 MGD at 5.84 MGD. Both studies were consistent in their reported maximum-daily demands of 10 MGD.

The residential water use comprises most of the demand for the City accounting for approximately 70% of the demand base; commercial and industrial users contribute approximately 25% of the total daily demand while municipal and institutional users comprise approximately 5% of the total demand.

The 2010 Comprehensive Water System Master Plan indicated that Haverhill's population is projected to increase to slightly more than 65,000 by 2030. On this basis, average-day demands are projected to increase from approximately 6 MGD to slightly more than 7 MGD in 2030 while maximum-day demands are projected to increase from approximately 10 MGD to approximately 11.4 MGD in 2030. DCR is projecting water demands to be 6.85 MGD in 2034, +/- 0.33 MGD.

In 2000, the Massachusetts Executive Office of Environmental Affairs (EOEA) collaborated with the Merrimack Valley Planning Commission (MVPC) to complete a build-out analysis for the City. The build-out analysis concluded that the City's residential population could peak at 76,884 persons and that commercial and industrial development has the potential to increase by approximately 17 million square feet. These increases may result water demand increases of more than 15% over 2030 estimates.

Supply

The City of Haverhill obtains its potable water from several surface water impoundments; Millvale Reservoir, Crystal Lake, Kenoza Lake, and Winnekenni Basin (considered part of Kenoza Lake) and Round Pond. Millvale Reservoir and Crystal Lake feed Kenoza Lake through a raw water pumping and transmission system. Raw water is drawn from Kenoza Lake from a raw water pumping station which pumps water to the Kenoza Lake Water Treatment Plant (WTP). Crystal

Lake can also be fed directly to the WTP from the Crystal Lake pumping station.

In 2002, the safe yield of the supply system was estimated to be 7.1 million gallons per day (MGD). As part of the 2010 Master Plan study, the safe yield was reevaluated. Using more recent data, the safe yield of Haverhill's supplies was revised to 7.42 MGD, an increase of 0.32 MGD from prior estimates. This yield should sustain the City's water needs through 2030. However, the current supply capacity does not provide any redundancy to address problems with any of the existing supplies; loss of any one of the existing water bodies would put Haverhill in a significant supply deficit. The City is permitted under the Water Management Act (WMA) to withdraw an average annual volume of 7.1 MGD and a maximum daily withdrawal of 13.8 MGD. The WMA withdrawals include all the City's supply reservoirs.

The supply is projected to be in equilibrium with demands around 2030 suggesting a new supply(s) is needed. With aggressive management of the supply and demands over the next 20-years, perhaps the need for a new source can be pushed out slightly into the future. However, the City is already meeting current per capita demand thresholds as required under the Water Management Act permit leaving little room for significant gains in reducing use. The system is considered "tight" with unaccounted-for-water (UAW) within recommended ranges. Conservation programs have been on-going for years within the City and while more can be done, further optimization of demands will likely not achieve significant reductions.

In the past, the City of Haverhill had utilized Johnsons Pond as part of the surface water supply system. However, due to undesirable water quality issues and significant public opposition, in 1980 the City discontinued use of this source. Other sources that were considered included groundwater sources, however investigations throughout the City could not identify any significant high yielding sources.

Recognizing the long-term water supply needs of the City, Haverhill has been investigating the possible development of a ground water supply(s) located adjacent to the Merrimack River. Prior studies were completed for the City that evaluated alternative supply sources. A study conducted in 1971 by Camp, Dresser and Mckee ruled out the possibility of sufficient groundwater supplies to provide any significant yield. Their conclusions were based on test well explorations conducted in 1959 and 1966 as well a test well drilled as part of their study. The study also concluded that the only viable source having a yield sufficient to supply Haverhill is the Merrimack River. A 2000 study by Whitman & Howard, Inc., also considered the viability of a variety of water sources. This study also eliminated groundwater supplies as viable. It considered the reactivation of Johnsons Pond to supplement existing supplies but the costs to do so were determined to be prohibitive and would only result in a marginal increase in available yield. Both studies concluded that there are no viable large sources remaining other than the Merrimack River.

Evaluation of the Merrimack River

Recognizing the need to develop future water supply capacity and provide redundancy, the City contracted with Weston and Sampson in 2003 and a Merrimack River Feasibility Study was completed in 2006. In 2011 the City authorized Wright-Pierce to evaluate the findings of this study and further develop the feasibility of water withdrawals from the Merrimack River. The study looked at withdrawing water through the use of riverbank infiltration well technology and not a direct intake. The target yield for the study was 7 MGD, to meet projected future demands of 7.0 MGD in 2030.

Phase I

In 2012, Wright-Pierce completed a geophysical survey along the Merrimack River in Haverhill. The study area was concentrated along the north side of the river bound by upstream and downstream city limits and included 18 nautical miles of survey.

The purpose of the investigation was to collect information on the subsurface geology beneath the Merrimack River to identify if areas of thick water bearing sediment exist and which may have the potential to support large riverbank groundwater withdrawals. The data was collected using seismic reflection profiling which is a quick and effective method to preliminarily delineate the depth to bedrock and overburden thickness beneath water bodies such as the Merrimack River.

The results of the seismic reflection survey proved very successful. Five (5) areas containing potential deep bedrock troughs were identified beneath Merrimack River, within the area covered by the survey. The depths to bedrock below river surface range from as much as 80 feet to as little as 45 feet. Within these five areas, the depth to bedrock appears to deepen toward the center of the river. The thickness of potential water bearing material within the troughs appears to range in thickness from approximately 35 feet to 70 feet.

Further screening, reduced the target areas to three that warranted further consideration and investigation.

Phase II

To confirm the depth to bedrock and soil type within the buried troughs identified in Phase 1 beneath the Merrimack River, as well as on land, a test well exploration study (Phase II) was conducted utilizing barge (for river test wells) and truck drilling equipment (for land test wells). The work was conducted from 2012 to 2013.

The purpose of the test well exploration investigations was to collect information and validate the findings from Phase I and; conduct subsurface hydrogeology on land at the most promising locations identified in Phase I. The objective was to identify if areas of thick water bearing sediments exist that have the potential to support a large riverbank groundwater withdrawal. The test well drilling consisted of drilling of 2.5 and 3-inch diameter casing through the sediments utilizing the drive and wash method.

Test drilling was conducted to assess the soils lying beneath the land adjacent to river in the most promising areas as well as to collect water quality data. Drilling was conducted on three properties along East Broadway adjacent to the area in question to preliminarily evaluate the appropriate type of groundwater bank filtration system required to optimize the maximum yield potential for this area.

Based on the data collected from the small diameter explorations, it appears that suitable hydrogeologic conditions exist for the development of a significant riverbank filtration withdrawal system in the area of study. It is important to note that the conclusions are being drawn from the collection of data obtained from small diameter test wells and pump testing. These methods are an important step in the process of identifying and developing a large bank filtration groundwater supply.

Phase III

Phase III included additional test well exploration within the Merrimack River to fill and refine data

gaps from Phases I & II by further evaluating the extents of the aquifer, hydraulic induced infiltration potential, depth to bedrock beneath the river bed and potential barrier boundaries. The work was conducted in late 2014.

Based on the previous exploration results and the additional refining data collected in Phase III, the Merrimack River appears to have very good potential for the development of a high yield bank filtration source in the area proposed. This area is characterized as a bedrock trough filled with permeable sand and gravel sediments to a depth of at least 70 feet below the river bed. Aerial extents of the marine clay were also delineated during this investigation allowing for further refinement of a potential location for a large-scale groundwater supply withdrawal.

The significant aquifer thickness allows for the design and construction of a river bank filtration system to provide sufficient available drawdown above the withdrawal intake screen(s). Based upon the data collected to date, and the yield desired and because of the variability of the sediment encountered along the riverbank in the proposed area, a radial collector well was recommended.

It is important to note that the groundwater obtained and tested as part of the study has a long residence travel time before discharging vertically upward through the river bed resulting in higher dissolved minerals, elevated hardness, alkalinity and pH. Under pumping conditions and as induced bank infiltration from the river occurs, the groundwater quality will likely change as surface water with lower dissolved solids infiltrates into the aquifer.

Phase IV

Phase IV consisted of the installation of a large diameter test well to test the conditions of the aquifer to be used in sizing and designing the collector well. A 10-inch diameter test well was constructed in late 2016 near the most promising test areas at 309 East Broadway on property currently owned by the Hill family. A 5-day pump test was conducted in April 2017 at rates up to 400 gallons per minute (gpm). The results of the test indicate that the site can support riverbank withdrawals up to the target rate of 7 MGD without impact to the surrounding resources.

Groundwater Conveyance

Water withdrawn from the proposed radial collector well will be conveyed to the City's existing reservoir system and treatment plant. A 20 to 24-inch water transmission main is proposed to be installed from the proposed radial collector well north along East Broadway to Millvale Road; and Millvale Road north where a connection will be made to the City's existing Millvale reservoir pump station discharge main. This connection will allow the water to be discharged to Kenoza Lake. After this connection, the transmission main will continue north along Middle Road; Middle Road south to Centre Street; north along Centre Street to Kenoza Street; north west along Kenoza Street to Kenoza Lake where a connection will be made to the existing discharge to Kenoza Lake. After this discharge location, the transmission main will continue along Kenoza Street to approximately Shattuck Street where the route will turn southwest and run cross country to the head of the City's existing water treatment plant. The total length of the completed main will be approximately 13,500 feet.

The entire main will be constructed in the right-of-way of City owned streets other than a short cross-country route on the Hill property at the start of the main, and another cross-country route across City property to the head of the water treatment plant.

Construction and Impacts

A radial collector well caisson is constructed vertically into the ground and thus has a very small footprint. The well is constructed by first forming 16-foot interior diameter and 19-foot outer diameter cast-in-place concrete rings in 12-foot-high lifts. A beveled concrete drive-shoe with steel plating is then inserted into a six-foot deep excavation. A concrete deadman is constructed around the drive-shoe followed by the first 12-foot high concrete ring. Soils within the drive shoe are excavated using a crane equipped with a clam-shell style bucket. During excavation, steel bracing set on top of each 12-foot concrete ring is used to apply downforce during sinking of the rings. The application of downforce limits the volume of soil excavated from the caisson, prevents subsidence around the caisson, prevents under-mining and allows the contractor to keep the caisson plumb during sinking. Additional lifts are added after the preceding ring has been sunk to a workable depth and the sinking process continues until terminal depth is reached (approximately 70-feet below grade). At completion, a four-foot thick concrete plug is tremied into the caisson allowing for dewatering of the caisson and entry to perform work by the contractor.

Once all the rings have been installed and the base has been placed, all remaining work is confined to the interior of the rings or caisson. Hydraulic jacking equipment is placed into the bottom of the caisson and is used to push 16-inch diameter steel threaded casing beneath the Merrimack River to estimated lengths of up to 250-feet. Once the casing has been pushed to the desired length, 12-inch diameter stainless steel well screen is installed in the casing. The casing is then removed, exposing the permanent well screen. The completed laterals will be set 40-50 feet below the river bottom. Each of the lateral screens are developed using high pressure nitrogen for approximately 8-10 hours to remove fine grained soils in the near lateral screen aquifer. Upon completion, the laterals are opened allowing groundwater to flow through the collectors into the caisson. Vertical turbine submersible pumps are lowered into the bottom of the caisson and pump water from the caisson into the transmission main.

An electrical building will be constructed on the upper portion of the property directly adjacent to East Broadway. The building will house electrical gear including variable frequency drives and other electrical gear necessary to operate the submersible pumps in the caisson.

The water transmission main will primarily be constructed in the right-of-way of the streets. Traffic will be maintained during construction and Traffic Management Plans will be developed and used to reduce impacts to residents during construction. Preliminary boring data along the transmission route suggests that bedrock will be below the excavation and little excavation of bedrock will be required. At two locations along the transmission main route, the construction will cross small streams. The pipe will be installed and anchored on the outside of the bridges that cross the streams or be installed beneath the stream bed minimizing impacts to the stream and environmental sensitive areas.

Programmatic Elements:

The project will require at least four approvals from DEP related to water supply: BRP WS-17,19, 20, and 32 and possibly approved under Water Management Act prior to going on-line. Consultation with MassDEP suggests, however, that Water Management Act permitting will not be required since the proposed supply is not intended to increase the City's water withdrawals.

Portions of the project are proposed within Estimated/Priority Habitat Areas for state-listed species. Accordingly, approval from NHESP will be necessary and consultation with NHESP is underway. Given the nature of the project the proponent does not believe there will be any impact to the state-listed species because there will be no work within or alteration of the actual habitat

of the various species.

As work is proposed in bordering land subject to flooding, riverfront area and the buffer zone it will be necessary to obtain an Order of Conditions from the Haverhill Conservation Commission. It does not appear that a Chapter 91 Waterway License will be required as the laterals from the well will be below the river; meeting the exemption for pipelines/conduits entirely embedded in the soil beneath a river/stream. A Waterways Request for Determination will be filled to confirm this.

Based on consultation with the Army Corps of Engineers it appears that no filing under the Clean Water Act is required, and therefore no 401 Water Quality Certification is necessary either. It will however, be necessary to file a Project Notification Form with the Corps under the Rivers and Harbors Act. Consultation with the Corps will also be necessary to confirm that the work is outside of the federal channel.

Alternatives Considered:

In the past, several other studies considered all potential supplies within proximity to Haverhill. Supplies that were considered included surface water, ground water, interconnections to neighboring communities and even a connection to the Massachusetts Water Resources Authority water system. These studies concluded that there are no viable large sources remaining other than the Merrimack River.

A previous consultant conducted a riverbank filtration development program in upstream areas of Haverhill. One site was identified as favorable and exploratory well drilling and pump testing was conducted. Well yields were determined to be unsatisfactory and the well site was not able to be permitted due to the proximity of a large diameter sewer main within the Zone 2 wellhead area.

A 2010 Comprehensive Water System Master Plan completed by Wright-Pierce, recommended that the City expand exploration efforts along the Merrimack River. In 2010-2011, a Water Supply Committee formed by the Mayor of Haverhill, reinforced prior recommendations to explore the potential of developing a new supply for the City along the Merrimack River that focused exclusively on a riverbank groundwater supply.

A Riverbank infiltration withdrawal was determined to be the desired method of supplying water to the City's existing water supply system for several reasons.

1) Natural pre-treatment of a riverbank groundwater supply would require less treatment and would reduce overall production cost.
2) the Merrimack River has the capacity to provide the City with a secure and dependable fully redundant water supply. And while direct intake could provide even greater yields, the treatment costs would be significantly greater without the benefit of the natural filtration characteristics of riverbank filtration.
3) The environmental impacts associated a redial collector well, which withdraws water from the ground, are significantly less than a direct river intake.

Mitigation Measures for the Preferred Alternative

The project has been designed to avoid impacts to the river and its bank. Any lost flood storage will be mitigated by incremental compensation. It is anticipated that some minor stormwater BMP'S will need to be constructed to mitigate the small amount of new impervious area.

Phasing

There are not separate phases to the project, however, the well construction and raw watermain installation may be done under separate contracts.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN:

Is the project within or adjacent to an Area of Critical Environmental Concern?

☐Yes (Specify_____)

☒No

if yes, does the ACEC have an approved Resource Management Plan? ___ Yes ___ No;
If yes, describe how the project complies with this plan.

_____

Will there be stormwater runoff or discharge to the designated ACEC? ___ Yes ___ No;
If yes, describe and assess the potential impacts of such stormwater runoff/discharge to the designated ACEC.

_____

RARE SPECIES:

Does the project site include Estimated and/or Priority Habitat of State-Listed Rare Species? (see http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/priority_habitat/priority_habitat_home.htm)

☒Yes (Specify: Shortnose Sturgeon, Atlantic Sturgeon, Eaton's Beggar-Tick) ☐No

HISTORICAL /ARCHAEOLOGICAL RESOURCES:

Does the project site include any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?

☐Yes (Specify_____) ☒No

If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources? ☐Yes (Specify_____) ☐No

WATER RESOURCES:

Is there an Outstanding Resource Water (ORW) on or within a half-mile radius of the project site?
__X__Yes ___No; if yes, identify the ORW and its location. Kenoza Lake, Millvale Reservoir,

(NOTE: Outstanding Resource Waters include Class A public water supplies, their tributaries, and bordering
wetlands; active and inactive reservoirs approved by MassDEP; certain waters within Areas of Critical Environmental Concern, and certified vernal pools. Outstanding resource waters are listed in the Surface Water Quality Standards, 314 CMR 4.00.)

Are there any impaired water bodies on or within a half-mile radius of the project site? ___Yes __X__No; if yes, identify the water body and pollutant(s) causing the impairment:

_____.

Is the project within a medium or high stress basin, as established by the Massachusetts Water Resources Commission? ___Yes __X__No

STORMWATER MANAGEMENT:

Generally, describe the project's stormwater impacts and measures that the project will take to comply with the standards found in MassDEP's Stormwater Management Regulations: A storm water management plan will be prepared for the project in compliance with the Wetlands Protection Act Regulations. The footprint of the project is very small and will likely only require small stormwater BMP's. The nature of the project may preclude infiltration measures as these are prohibited in the Zone 1's around wells.

MASSACHUSETTS CONTINGENCY PLAN:

Has the project site been, or is it currently being, regulated under M.G.L.c.21E or the Massachusetts Contingency Plan? Yes ___ No X ; if yes, please describe the current status of the site (including Release Tracking Number (RTN), cleanup phase, and Response Action Outcome classification): _____

Is there an Activity and Use Limitation (AUL) on any portion of the project site? Yes ___ No X; if yes, describe which portion of the site and how the project will be consistent with the AUL: _____.

Are you aware of any Reportable Conditions at the property that have not yet been assigned an RTN? Yes ___ No X; if yes, please describe: _____

SOLID AND HAZARDOUS WASTE:

If the project will generate solid waste during demolition or construction, describe alternatives considered for re-use, recycling, and disposal of, e.g., asphalt, brick, concrete, gypsum, metal, wood:

The only substantive demolition that will occur will include the removal of pavement from trench excavation during construction of the raw water transmission main. Pavement will be taken to a pavement plant for recycling. The construction activities will generate wastes typically associated with construction projects including packaging materials and waste construction materials. All waste generated will be disposed of in conformance with all applicable regulation and will be recycled to the extent that is practical.

(NOTE: Asphalt pavement, brick, concrete and metal are banned from disposal at Massachusetts landfills and waste combustion facilities and wood is banned from disposal at Massachusetts landfills. See 310 CMR 19.017 for the complete list of banned materials.)

Will your project disturb asbestos containing materials? Yes ___ No X;
if yes, please consult state asbestos requirements at http://mass.gov/MassDEP/air/asbhom01.htm

Describe anti-idling and other measures to limit emissions from construction equipment:

Contractors will be required to comply with any anti-idling regulations that are applicable.

DESIGNATED WILD AND SCENIC RIVER:

Is this project site located wholly or partially within a defined river corridor of a federally designated Wild and Scenic River or a state designated Scenic River? Yes ___ No X ;
if yes, specify name of river and designation:

If yes, does the project have the potential to impact any of the "outstandingly remarkable" resources of a federally Wild and Scenic River or the stated purpose of a state designated Scenic River? Yes ___ No ___; if yes, specify name of river and designation: _____;
if yes, will the project will result in any impacts to any of the designated "outstandingly remarkable" resources of the Wild and Scenic River or the stated purposes of a Scenic River.
Yes ___ No ___;
if yes, describe the potential impacts to one or more of the "outstandingly remarkable" resources or stated purposes and mitigation measures proposed.

ATTACHMENTS:

1. List of all attachments to this document.
2. U.S.G.S. map (good quality color copy, 8-½ x 11 inches or larger, at a scale of 1:24,000) indicating the project location and boundaries.
3.. Plan, at an appropriate scale, of existing conditions on the project site and its immediate environs, showing all known structures, roadways and parking lots, railroad rights-of-way, wetlands and water bodies, wooded areas, farmland, steep slopes, public open spaces, and major utilities.
4 Plan, at an appropriate scale, depicting environmental constraints on or adjacent to the project site such as Priority and/or Estimated Habitat of state-listed rare species, Areas of Critical Environmental Concern, Chapter 91 jurisdictional areas, Article 97 lands, wetland resource area delineations, water supply protection areas, and historic resources and/or districts.
5. Plan, at an appropriate scale, of proposed conditions upon completion of project (if construction of the project is proposed to be phased, there should be a site plan showing conditions upon the completion of each phase).
6. List of all agencies and persons to whom the proponent circulated the ENF, in accordance with 301 CMR 11.16(2).
7. List of municipal and federal permits and reviews required by the project, as applicable.

LAND SECTION – all proponents must fill out this section

I. Thresholds / Permits

A. Does the project meet or exceed any review thresholds related to **land** (see 301 CMR 11.03(1) Yes _X_ No; if yes, specify each threshold:

II. Impacts and Permits

A. Describe, in acres, the current and proposed character of the project site, as follows:

	Existing	Change	Total
Footprint of buildings	1.31	0.01	1.32
Internal roadways	6.43	0.34	6.77
Parking and other paved areas	1.35	0.07	1.42
Other altered areas	13.30	0.49	13.79
Undeveloped areas	45.94	-0.91	45.03
Total: Project Site Acreage	68.33	0.91	68.33

B. Has any part of the project site been in active agricultural use in the last five years? __ Yes _X_ No; if yes, how many acres of land in agricultural use (with prime state or locally important agricultural soils) will be converted to nonagricultural use?

C. Is any part of the project site currently or proposed to be in active forestry use? _X_ Yes __ No; if yes, please describe current and proposed forestry activities and indicate whether any part of the site is the subject of a forest management plan approved by the Department of Conservation and Recreation: Timber harvesting periodically occurs on the land around Kenoza Lake in conformance with a DCR-approved long-term forest management plan.

D. Does any part of the project involve conversion of land held for natural resources purposes in accordance with Article 97 of the Amendments to the Constitution of the Commonwealth to any purpose not in accordance with Article 97? _X_Yes___ No; if yes, describe:
It appears that the parcel the existing water treatment plant is located on is Article 97 land, however, the connection of the raw water main to the plant will not change the use of the land.

E. Is any part of the project site currently subject to a conservation restriction, preservation restriction, agricultural preservation restriction or watershed preservation restriction? ___ Yes_X_ No; if yes, does the project involve the release or modification of such restriction? ___ Yes ___ No; if yes, describe:

F. Does the project require approval of a new urban redevelopment project or a fundamental change in an existing urban redevelopment project under M.G.L.c.121A? ___ Yes _X_ No; if yes, describe:

G. Does the project require approval of a new urban renewal plan or a major modification of an existing urban renewal plan under M.G.L.c.121B? Yes ___ No _X; if yes, describe:

III. Consistency

A. Identify the current municipal comprehensive land use plan
Title: City of Haverhill, Comprehensive Guide Plan for the Year 2005

B. Describe the project's consistency with that plan with regard to:
1) economic development: The plan focuses on the funding of capital improvement, zoning changes, and changes to subdivision regulations and does not appear to specifically address economic development.
2) adequacy of infrastructure: The focus of the plan is on funding of capital improvement,

primarily road and transportation projects. As this project is a capital improvement it appears to be consistent with the plans goal.

3) open space impacts: The plan does not appear to address open space, but this project's small footprint will have no impact on open space.
4) compatibility with adjacent land uses: The operation of the well will require almost no on-going activity on the site and therefore is compatible with the adjacent land uses.

C. Identify the current Regional Policy Plan of the applicable Regional Planning Agency (RPA)
RPA: Merrimack Valley Planning Commission

Title: Merrimack Valley Comprehensive Economic Development Strategy Development Strategy Date: 2013

D. Describe the project's consistency with that plan with regard to:
1) economic development: The first goal of the plan is to "develop and promote a strong, diverse and sustained regional economy." An abundant and clean supply of water is essential to meeting this goal.
2) adequacy of infrastructure: The plan does not appear to have any specific infrastructure goals but does recognize their importance by listing significant on-going public works projects.
3) open space impacts: The plan does not address open space directly but does address the issue of sprawl, recommending various mechanisms to encourage cluster development and development in towns centers. This project has no impact on these issues.

RARE SPECIES SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **rare species or habitat** (see 301 CMR 11.03(2))? ___ Yes _X_ No; if yes, specify, in quantitative terms:

(NOTE: If you are uncertain, it is recommended that you consult with the Natural Heritage and Endangered Species Program (NHESP) prior to submitting the ENF.)

B. Does the project require any state permits related to **rare species or habitat**? _X Yes ___ No

C. Does the project site fall within mapped rare species habitat (Priority or Estimated Habitat?) in the current Massachusetts Natural Heritage Atlas (attach relevant page)? _X_ Yes ___ No.

D. If you answered "No" to all questions A, B, and C, proceed to the **Wetlands, Waterways, and Tidelands Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Rare Species section below.

II. Impacts and Permits

A. Does the project site fall within Priority or Estimated Habitat in the current Massachusetts Natural Heritage Atlas (attach relevant page)? _X_ Yes ___ No. If yes,

1. Have you consulted with the Division of Fisheries and Wildlife Natural Heritage and Endangered Species Program (NHESP)? _X_ Yes ___ No; if yes, have you received a determination as to whether the project will result in the "take" of a rare species? ___ Yes _X_ No; if yes, attach the letter of determination to this submission.

2. Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? ___ Yes ___ No; if yes, provide a summary of proposed measures to minimize and mitigate rare species impacts.

Not yet determined but applicant does not believe there will be a take.

3. Which rare species are known to occur within the Priority or Estimated Habitat?
Short-nosed sturgeon, Atlantic sturgeon, Eaton's beggars-ticks.

4. Has the site been surveyed for rare species in accordance with the Massachusetts Endangered Species Act? ___ Yes _X_ No

4. If your project is within Estimated Habitat, have you filed a Notice of Intent or received an Order of Conditions for this project? ___ Yes _X_ No; if yes, did you send a copy of the Notice of Intent to the Natural Heritage and Endangered Species Program, in accordance with the Wetlands Protection Act regulations? ___ Yes ___ No

B. Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? ___ Yes _X_ No; if yes, provide a summary of proposed measures to minimize and mitigate impacts to significant habitat:

Not yet determined, but the applicant believes that the work will avoid the habitat of the State-listed species.

WETLANDS, WATERWAYS, AND TIDELANDS SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wetlands, waterways, and tidelands** (see 301 CMR 11.03(3))? ___ Yes _X_ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits (or a local Order of Conditions) related to **wetlands, waterways, or tidelands**? _X_ Yes ___ No; if yes, specify which permit: Local Order of Conditions

C. If you answered "No" to both questions A and B, proceed to the **Water Supply Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wetlands, Waterways, and Tidelands Section below.

II. Wetlands Impacts and Permits

A. Does the project require a new or amended Order of Conditions under the Wetlands Protection Act (M.G.L. c.131A)? _X_ Yes ___ No; if yes, has a Notice of Intent been filed? ___ Yes _X_ No; if yes, list the date and MassDEP file number: _____; if yes, has a local Order of Conditions been issued? ___ Yes ___ No; Was the Order of Conditions appealed? ___ Yes ___ No. Will the project require a Variance from the Wetlands regulations? ___ Yes _X_ No.

B. Describe any proposed permanent or temporary impacts to wetland resource areas located on the project site: The construction of the well, and access driveway will result in the alteration of riverfront area and bordering land subject to flooding.

C. Estimate the extent and type of impact that the project will have on wetland resources, and indicate whether the impacts are temporary or permanent:

Coastal Wetlands	Area (square feet) or Length (linear feet)	Temporary or Permanent Impact?
Land Under the Ocean		
Designated Port Areas		
Coastal Beaches		
Coastal Dunes		
Barrier Beaches		
Coastal Banks		
Rocky Intertidal Shores		
Salt Marshes		
Land Under Salt Ponds		
Land Containing Shellfish		
Fish Runs		
Land Subject to Coastal Storm Flowage		
Inland Wetlands		
Bank (lf)		
Bordering Vegetated Wetlands		
Isolated Vegetated Wetlands		
Land under Water		
Isolated Land Subject to Flooding		
Bordering Land Subject to Flooding	22,800	8,200 temporary
Riverfront Area	17,000	3,400 temporary

** The riverfront area is contained within the BLSF. The total alteration with two resource areas is 22,800 s.f.

D. Is any part of the project:

1. proposed as a **limited project**? _X_ Yes___ No; if yes, what is the area (in sf)?22,800s.f

2. the construction or alteration of a **dam**? ___ Yes _X_ No; if yes, describe:
3. fill or structure in a **velocity zone** or **regulatory floodway**? ___ Yes _X_ No
4. dredging or disposal of dredged material? ___ Yes _X_ No; if yes, describe the volume of dredged material and the proposed disposal site:
5. a discharge to an **Outstanding Resource Water (ORW)** or an **Area of Critical Environmental Concern (ACEC)**? ___ Yes _X_ No
6. subject to a wetlands restriction order? ___ Yes _X_ No; if yes, identify the area (in sf):
7. located in buffer zones? _X_ Yes ___ No; if yes, how much (in sf): Not yet determined. It appears buffer zone activity will occur only along the raw watermain route within roadways.

E. Will the project:
1. be subject to a local wetlands ordinance or bylaw? _X_ Yes ___ No
2. alter any federally-protected wetlands not regulated under state law? ___ Yes _X_ No; if yes, what is the area (sf)?

III. Waterways and Tidelands Impacts and Permits

A. Does the project site contain waterways or tidelands (including filled former tidelands) that are subject to the Waterways Act, M.G.L.c.91? _X_ Yes ___ No; if yes, is there a current Chapter 91 License or Permit affecting the project site? ___ Yes _X_ No; if yes, list the date and license or permit number and provide a copy of the historic map used to determine extent of filled tidelands:

B. Does the project require a new or modified license or permit under M.G.L.c.91? ___ Yes_X_No; if yes, how many acres of the project site subject to M.G.L.c.91 will be for non-water-dependent use? Current ___ Change ___ Total ___
If yes, how many square feet of solid fill or pile-supported structures (in sf)?

C. For non-water-dependent use projects, indicate the following:
Area of filled tidelands on the site: 0
Area of filled tidelands covered by buildings: 0
For portions of site on filled tidelands, list ground floor uses and area of each use: 0
Does the project include new non-water-dependent uses located over flowed tidelands? Yes ___ No _X_
Height of building on filled tidelands: N/A

Also show the following on a site plan: Mean High Water, Mean Low Water, Water-dependent Use Zone, location of uses within buildings on tidelands, and interior and exterior areas and facilities dedicated for public use, and historic high and historic low water marks.

D. Is the project located on landlocked tidelands? ___ Yes _X_ No; if yes, describe the project's impact on the public's right to access, use and enjoy jurisdictional tidelands and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:

E. Is the project located in an area where low groundwater levels have been identified by a municipality or by a state or federal agency as a threat to building foundations? ___Yes _X_ No; if yes, describe the project's impact on groundwater levels and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:

F. Is the project non-water-dependent **and** located on landlocked tidelands **or** waterways or tidelands subject to the Waterways Act **and** subject to a mandatory EIR? ___ Yes _X_ No;
(NOTE: If yes, then the project will be subject to Public Benefit Review and Determination.)

G. Does the project include dredging? ___ Yes _X_ No; if yes, answer the following questions:

What type of dredging? Improvement ___ Maintenance ___ Both ____
What is the proposed dredge volume, in cubic yards (cys) _____
What is the proposed dredge footprint ____length (ft) ___width (ft)____depth (ft);
Will dredging impact the following resource areas?

Intertidal Yes__ No__; if yes, ___ sq ft
Outstanding Resource Waters Yes__ No__; if yes, ___ sq ft
Other resource area (i.e. shellfish beds, eel grass beds) Yes__ No__; if yes __ sq ft
If yes to any of the above, have you evaluated appropriate and practicable steps to: 1) avoidance; 2) if avoidance is not possible, minimization; 3) if either avoidance or minimize is not possible, mitigation?
If no to any of the above, what information or documentation was used to support this determination?

Provide a comprehensive analysis of practicable alternatives for improvement dredging in accordance with 314 CMR 9.07(1)(b). Physical and chemical data of the sediment shall be included in the comprehensive analysis.
Sediment Characterization

Existing gradation analysis results? __Yes ___No: if yes, provide results.
Existing chemical results for parameters listed in 314 CMR 9.07(2)(b)6? ___Yes ____No; if yes, provide results.

Do you have sufficient information to evaluate feasibility of the following management options for dredged sediment? If yes, check the appropriate option.

Beach Nourishment ___
Unconfined Ocean Disposal ___
Confined Disposal:
Confined Aquatic Disposal (CAD) ___
Confined Disposal Facility (CDF) ___
Landfill Reuse in accordance with COMM-97-001 ___
Shoreline Placement ___
Upland Material Reuse____
In-State landfill disposal____
Out-of-state landfill disposal ____
(NOTE: This information is required for a 401 Water Quality Certification.)

IV. Consistency:

A. Does the project have effects on the coastal resources or uses, and/or is the project located within the Coastal Zone? ___ Yes_X_ No; if yes, describe these effects and the projects consistency with the policies of the Office of Coastal Zone Management:

B. Is the project located within an area subject to a Municipal Harbor Plan? ___ Yes_X_No; if yes, identify the Municipal Harbor Plan and describe the project's consistency with that plan:

WATER SUPPLY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **water supply** (see 301 CMR 11.03(4))? _X_ Yes ___ No; if yes, specify, in quantitative terms: A new withdrawal of 7 MGD, above the 1.5 MGD threshold requiring both an ENF and EIR.

B. Does the project require any state permits related to **water supply**? _X_ Yes ___ No; if yes, specify which permit:

- BRP WS 17 – Approval to Site a Source and Conduct a Pumping Test for a Source Greater Than 70 GPM
- BRP WS 19 – Approval of Pumping Test Report for Source of 70 GPM or Greater
- BRP WS 20 – Approval to Construct a Source of 70 GPM or Greater
- Water Management Act—may be needed at the end of construction prior to going online.

C. If you answered "No" to both questions A and B, proceed to the **Wastewater Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Water Supply Section below.

II. Impacts and Permits

A. Describe, in gallons per day (gpd), the volume and source of water use for existing and proposed activities at the project site:

	Existing	Change	Total
Municipal or regional water supply	0	7.0 MGD	7.0 MGD
Withdrawal from groundwater	0	7.0 MGD	7.0 MGD
Withdrawal from surface water	0	0	0
Interbasin transfer	0	0	0

(NOTE: Interbasin Transfer approval will be required if the basin and community where the proposed water supply source is located is different from the basin and community where the wastewater from the source will be discharged.)

B. If the source is a municipal or regional supply, has the municipality or region indicated that there is adequate capacity in the system to accommodate the project? _X_ Yes ___ No

C. If the project involves a new or expanded withdrawal from a groundwater or surface water source, has a pumping test been conducted? __Yes _X_ No; if yes, attach a map of the drilling sites and a summary of the alternatives considered and the results. _____

D. What is the currently permitted withdrawal at the proposed water supply source (in gallons per day)? _0_ Will the project require an increase in that withdrawal? _X_ Yes__No; if yes, then how much of an increase (gpd)? 7.0 MGD

E. Does the project site currently contain a water supply well, a drinking water treatment facility, water main, or other water supply facility, or will the project involve construction of a new facility? X Yes __No. If yes, describe existing and proposed water supply facilities at the project site:

	Permitted Flow	Existing Avg Daily Flow	Project Flow	Total
Capacity of water supply well(s) (gpd)	7.1 MGD	6.0 MGD	7.0 MGD	7.1 MGD
Capacity of water treatment plant (gpd)	13.8 MGD	6.0 MGD	0 MDG	13.8 MGD

F. If the project involves a new interbasin transfer of water, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or proposed? N/A

G. Does the project involve:

1. new water service by the Massachusetts Water Resources Authority or other agency of the Commonwealth to a municipality or water district? ___ Yes _X_ No
2. a Watershed Protection Act variance? ___Yes _X_ No; if yes, how many acres of alteration?
3. a non-bridged stream crossing 1,000 or less feet upstream of a public surface drinking water supply for purpose of forest harvesting activities? ___ Yes _X_ No

III. Consistency

Describe the project's consistency with water conservation plans or other plans to enhance water resources, quality, facilities and services:

The project will diversify the City's water sources in the event of an emergency where the existing City sources are not useable or drought conditions prevent further withdrawals from the existing sources. The Merrimack Riverbank Well will be included and used in the City's inventory for source of water supply without exceeding its WMA volume. A water withdrawal from the Merrimack River through riverbank well technology will result in improved water quality as compared to a surface water supply. The new supply will be discharged directly into the City's existing supplies or directly to the existing water treatment plant through the transmission main proposed as part of this project.

WASTEWATER SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wastewater** (see 301 CMR 11.03(5))? ___ Yes _X_ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **wastewater**? ___ Yes _X_ No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Transportation -- Traffic Generation Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wastewater Section below.

II. Impacts and Permits

A. Describe the volume (in gallons per day) and type of disposal of wastewater generation for existing and proposed activities at the project site (calculate according to 310 CMR 15.00 for septic systems or 314 CMR 7.00 for sewer systems):

	Existing	Change	Total
Discharge of sanitary wastewater			
Discharge of industrial wastewater			
TOTAL			

	Existing	Change	Total
Discharge to groundwater			
Discharge to outstanding resource water			
Discharge to surface water			
Discharge to municipal or regional wastewater facility			
TOTAL			

B. Is the existing collection system at or near its capacity? ___ Yes ___ No; if yes, then describe the measures to be undertaken to accommodate the project's wastewater flows:

C. Is the existing wastewater disposal facility at or near its permitted capacity? ___ Yes___ No; if yes, then describe the measures to be undertaken to accommodate the project's wastewater flows:

D. Does the project site currently contain a wastewater treatment facility, sewer main, or other wastewater disposal facility, or will the project involve construction of a new facility? ___ Yes ___ No; if yes, describe as follows:

	Permitted	Existing Avg Daily Flow	Project Flow	Total
Wastewater treatment plant capacity (in gallons per day)				

E. If the project requires an interbasin transfer of wastewater, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or new?

(NOTE: Interbasin Transfer approval may be needed if the basin and community where wastewater will be discharged is different from the basin and community where the source of water supply is

located.)

F. Does the project involve new sewer service by the Massachusetts Water Resources Authority (MWRA) or other Agency of the Commonwealth to a municipality or sewer district? ___ Yes ___ No

G. Is there an existing facility, or is a new facility proposed at the project site for the storage, treatment, processing, combustion or disposal of sewage sludge, sludge ash, grit, screenings, wastewater reuse (gray water) or other sewage residual materials? ___ Yes ___ No; if yes, what is the capacity (tons per day):

	Existing	Change	Total
Storage	_____	_____	_____
Treatment	_____	_____	_____
Processing	_____	_____	_____
Combustion	_____	_____	_____
Disposal	_____	_____	_____

H. Describe the water conservation measures to be undertaken by the project, and other wastewater mitigation, such as infiltration and inflow removal.

III. Consistency

A. Describe measures that the proponent will take to comply with applicable state, regional, and local plans and policies related to wastewater management:

B. If the project requires a sewer extension permit, is that extension included in a comprehensive wastewater management plan? ___ Yes ___ No; if yes, indicate the EEA number for the plan and whether the project site is within a sewer service area recommended or approved in that plan:

TRANSPORTATION SECTION (TRAFFIC GENERATION)

I. Thresholds / Permit

A. Will the project meet or exceed any review thresholds related to **traffic generation** (see 301 CMR 11.03(6))? ___ Yes _X_ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **state-controlled roadways**? ___ Yes _X_ No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Roadways and Other Transportation Facilities Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Traffic Generation Section below.

II. Traffic Impacts and Permits

A. Describe existing and proposed vehicular traffic generated by activities at the project site:

	Existing	Change	Total
Number of parking spaces	_____	_____	_____
Number of vehicle trips per day	_____	_____	_____
ITE Land Use Code(s):	_____	_____	_____

B. What is the estimated average daily traffic on roadways serving the site?

Roadway	Existing	Change	Total
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____

C. If applicable, describe proposed mitigation measures on state-controlled roadways that the project proponent will implement:

D. How will the project implement and/or promote the use of transit, pedestrian and bicycle facilities and services to provide access to and from the project site?

C. Is there a Transportation Management Association (TMA) that provides transportation demand management (TDM) services in the area of the project site? ____ Yes ____ No; if yes, describe if and how will the project will participate in the TMA:

D. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation facilities? ____ Yes ____ No; if yes, generally describe:

E. If the project will penetrate approach airspace of a nearby airport, has the proponent filed a Massachusetts Aeronautics Commission Airspace Review Form (780 CMR 111.7) and a Notice of Proposed Construction or Alteration with the Federal Aviation Administration (FAA) (CFR Title 14 Part 77.13, forms 7460-1 and 7460-2)?

III. Consistency

Describe measures that the proponent will take to comply with municipal, regional, state, and federal plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services:

TRANSPORTATION SECTION (ROADWAYS AND OTHER TRANSPORTATION FACILITIES)

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **roadways or other transportation facilities** (see 301 CMR 11.03(6))? ___ Yes _X_ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **roadways or other transportation facilities**? ___ Yes _X_ No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Energy Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Roadways Section below.

II. Transportation Facility Impacts

A. Describe existing and proposed transportation facilities in the immediate vicinity of the project site:

B. Will the project involve any

1. Alteration of bank or terrain (in linear feet)? _____
2. Cutting of living public shade trees (number)? _____
3. Elimination of stone wall (in linear feet)? _____

III. Consistency -- Describe the project's consistency with other federal, state, regional, and local plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services, including consistency with the applicable regional transportation plan and the Transportation Improvements Plan (TIP), the State Bicycle Plan, and the State Pedestrian Plan:

ENERGY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **energy** (see 301 CMR 11.03(7))? ___ Yes _X_ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **energy**? ___ Yes _X_ No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Air Quality Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Energy Section below.

II. Impacts and Permits

A. Describe existing and proposed energy generation and transmission facilities at the project site:

	Existing	Change	Total
Capacity of electric generating facility (megawatts)	_____	_____	_____
Length of fuel line (in miles)	_____	_____	_____
Length of transmission lines (in miles)	_____	_____	_____
Capacity of transmission lines (in kilovolts)	_____	_____	_____

B. If the project involves construction or expansion of an electric generating facility, what are:

1. the facility's current and proposed fuel source(s)?
2. the facility's current and proposed cooling source(s)?

C. If the project involves construction of an electrical transmission line, will it be located on a new, unused, or abandoned right of way? ___Yes ___No; if yes, please describe:

D. Describe the project's other impacts on energy facilities and services:

III. Consistency

Describe the project's consistency with state, municipal, regional, and federal plans and policies for enhancing energy facilities and services:

AIR QUALITY SECTION

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **air quality** (see 301 CMR 11.03(8))? ___ Yes _X_ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **air quality**? ___ Yes _X_ No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Solid and Hazardous Waste Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Air Quality Section below.

II. Impacts and Permits

A. Does the project involve construction or modification of a major stationary source (see 310 CMR 7.00, Appendix A)? ___ Yes ___ No; if yes, describe existing and proposed emissions (in tons per day) of:

	Existing	Change	Total
Particulate matter			
Carbon monoxide			
Sulfur dioxide			
Volatile organic compounds			
Oxides of nitrogen			
Lead			
Any hazardous air pollutant			
Carbon dioxide			

B. Describe the project's other impacts on air resources and air quality, including noise impacts:

III. Consistency

A. Describe the project's consistency with the State Implementation Plan:

B. Describe measures that the proponent will take to comply with other federal, state, regional, and local plans and policies related to air resources and air quality:

SOLID AND HAZARDOUS WASTE SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **solid or hazardous waste** (see 301 CMR 11.03(9))? ___ Yes _X_ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **solid and hazardous waste**? ___ Yes _X_ No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Historical and Archaeological Resources Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Solid and Hazardous Waste Section below.

II. Impacts and Permits

A. Is there any current or proposed facility at the project site for the storage, treatment, processing, combustion or disposal of solid waste? ___ Yes ___ No; if yes, what is the volume (in tons per day) of the capacity:

	Existing	Change	Total
Storage			
Treatment, processing			
Combustion			
Disposal			

B. Is there any current or proposed facility at the project site for the storage, recycling, treatment or disposal of hazardous waste? ___ Yes ___ No; if yes, what is the volume (in tons or gallons per day) of the capacity:

	Existing	Change	Total
Storage			
Recycling			
Treatment			
Disposal			

C. If the project will generate solid waste (for example, during demolition or construction), describe alternatives considered for re-use, recycling, and disposal:

D. If the project involves demolition, do any buildings to be demolished contain asbestos?
___ Yes ___ No

E. Describe the project's other solid and hazardous waste impacts (including indirect impacts):

III. Consistency

Describe measures that the proponent will take to comply with the State Solid Waste Master Plan:

HISTORICAL AND ARCHAEOLOGICAL RESOURCES SECTION

I. Thresholds / Impacts

A. Have you consulted with the Massachusetts Historical Commission? _X_ Yes ___ No; if yes, attach correspondence. For project sites involving lands under water, have you consulted with the Massachusetts Board of Underwater Archaeological Resources? _X_ Yes ____ No; if yes, attach correspondence

B. Is any part of the project site a historic structure, or a structure within a historic district, in either case listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? ___ Yes _X_ No; if yes, does the project involve the demolition of all or any exterior part of such historic structure? ___ Yes _X_ No; if yes, please describe:

C. Is any part of the project site an archaeological site listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? ___ Yes _X_ No; if yes, does the project involve the destruction of all or any part of such archaeological site? ___ Yes _X_ No; if yes, please describe:

D. If you answered "No" to all parts of both questions A, B and C, proceed to the **Attachments and Certifications** Sections. If you answered "Yes" to any part of either question A or question B, fill out the remainder of the Historical and Archaeological Resources Section below.

II. Impacts

Describe and assess the project's impacts, direct and indirect, on listed or inventoried historical and archaeological resources:

III. Consistency

Describe measures that the proponent will take to comply with federal, state, regional, and local plans and policies related to preserving historical and archaeological resources:

CERTIFICATIONS:

1. The Public Notice of Environmental Review has been/will be published in the following newspapers in accordance with 301 CMR 11.15(1):

   (Name) Eagle-Tribune (Date) October 14, 2017

2. This form has been circulated to Agencies and Persons in accordance with 301 CMR 11.16(2).

Signatures:

10-12-17		10/12/17	
Date	Signature of Responsible Officer or Proponent	Date	Signature of person preparing ENF (if different from above)

John D'Aoust	Charles E. Caron
Name (print or type)	Name (print or type)
City of Haverhill DPW; Water Division	Caron Environmental Consulting
Firm/Agency	Firm/Agency
131 Amesbury Road	247 Bragg Hill Road
Street	Street
Haverhill, MA 01830	Westminster, MA 01473
Municipality/State/Zip	Municipality/State/Zip
978-374-2385	978-874-5469
Phone	Phone

Lists
&
Area Table

LIST OF ATTACHMENTS

1. Lists and Area Table:
    - List of Attachments
    - Distribution List
    - List of Local and Federal Permits Required
    - Tabulation of Areas Used in the ENF
2. Maps and Site Photos:
    - Locus Map
    - Flood Zones/Wetlands
    - Rare Species/Open Space
    - Representative Site Photographs
3. Project Schedule
4. Wetland Reports
5. Natural Heritage and Endangered Species Program Correspondence
6. Massachusetts Historical Commission and Board of Underwater Archaeological Resources Correspondence
7. Plans:
    - Radial Collector Well Concept
    - Conceptual Raw Water Main Route

DISTRUBUTION LIST

Department of Environmental Protection
Commissioner's Office
One Winter Street
Boston, MA 02108

Department of Environmental Protection
Northeast Regional Office
Attn: MEPA Coordinator
205B Lowell Street
Wilmington, Massachusetts 01887

Department of Environmental Protection
Northeast Regional Office
Water, Wastewater & Wetlands Program
205B Lowell Street
Wilmington, Massachusetts 01887

Massachusetts Highway Department
Public/Private Development Unit
10 Park Plaza
Boston, MA 02116

Massachusetts Highway Department
District #4
Attn: MEPA Coordinator
519 Appleton St.
Arlington, MA 02476

NHESP
MassWildlife Field Headquarters
1 Rabbit Hill Road
Westborough, MA 01581

Massachusetts Historical Commission
The MA Archives Building
220 Morrissey Boulevard
Boston, MA 02125

Merrimack Valley Planning Commission
160 Main Street
Haverhill, MA 01830

Haverhill City Council
City Hall, Room 204
4 Summer Street
Haverhill, MA 01830

Haverhill Planning Board
City Hall, Room 201
4 Summer Street
Haverhill, MA 01830

Haverhill Conservation Commission
City Hall, Room 300
4 Summer Street
Haverhill, MA 01830

Haverhill Board of Health
City Hall, Room 210
4 Summer Street
Haverhill, MA 01830

LIST OF LOCAL AND FEDERAL PERMITS REQUIRED

LOCAL PERMITS:

- Haverhill Conservation Commission: Order of Conditions under both the Wetlands Protection Act and the Haverhill Wetlands Ordinance
- Haverhill Building Inspector: Building Permit

FEDERAL PERMITS:

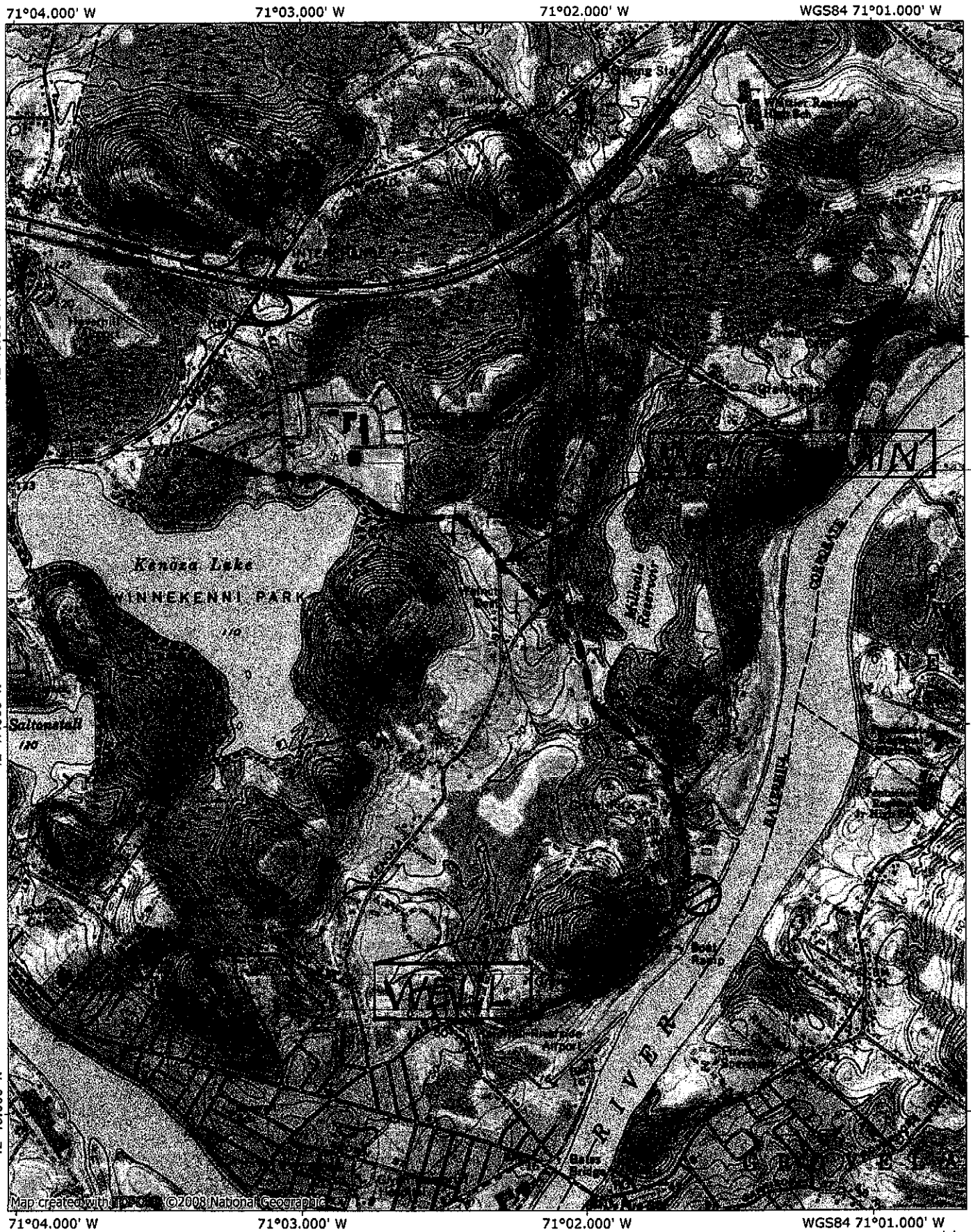
- National Pollutant Discharge Elimination System: Construction General Permit
- U.S. Army Corps of Engineers: Project Notification Form under the Rivers and Harbors Act of 1899
- U.S. Army Corps of Engineers: Consultation regarding the Federal Channel and potentially a "408 Approval"
- National Marine Fisheries Service: Approval may be needed under the Endangered Species Act

Tabulation of Areas Used in the ENF
Haverhill Collector Well and Transmission Mains

	Well Site	**Raw Water Main Route-Roads**	**Raw Water Main Route-WTP site**	**Total**
Total site acreage	8.00	9.48	50.85	68.33
New acres of land Altered	0.53	0	0.39	0.92
Existing acres of impervious areas	0.20	5.74	3.17	9.11
New acres of impervious areas	0.02	0	0	0.02
New alteration of other resource areas; Riverfront and BLSF	0.41+	0	0	0.41
Existing gross s.f. of structures	5,220 ft²	0	51,700 ft²	56,920 ft²
New gross s.f. of structures	480 ft²	0	0	57,400 ft²
Existing internal roadways & driveways	0.04	5.74	0.65	6.43
Change in internal roadways & driveways	0.34	0	0	0.34
Other parking & paved areas—existing	0.02	0	1.33	1.35
Other parking & paved areas—change	0.07	0	0	0.07
Other altered areas—existing	1.06	3.74	8.50	13.30
Other altered areas change	0.11	0	0.38	0.49
Undeveloped existing	6.74	0	39.18	45.92
Undeveloped change	-0.53	0	-0.38	-0.91

Maps
&
Site Photos

LOCUS MAP: PROPOSED MUNICIPAL WELL AND RAW WATER MAIN ROUTE, HAVERHILL



NATIONAL GEOGRAPHIC

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0.0 0.5 1.0 km

MN TN
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10/12/17

FEMA National Flood Hazard Layer, 2017;
USF&WS National Wetlands Inventory, 2017;
MassGIS;
ESRI World Imagery, 2017;
Map developed by Wright-Pierce, 2017

Legend

- Wetland Flag Series
- Well Facility
- Proposed Water Main

Flood Zone

- A
- AE
- AH
- AO
- VE
- D
- X, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- Wetland

Connect to existing Kenoza Lake discharge pipe

Connection to WTP

Connection to Millvale 24" Transmission Main

Two Concrete Culverts Crossings Located South of Powdermill Road

Stream/Bridge Crossing at 349 East Broadway

W, V, U, T, N, O, R, Q, P, J, K, I, B, C, D, E, F, G, M, W

Flood Zone A
Flood Zone AE
Flood Zone X

EDGEHILL ROAD
CLIFTWOOD STREET
LONGVIEW STREET
AMESBURY ROAD
SHATTUCK STREET
SUNRISE STREET
ELLIOTT STREET
MIDLAKE STREET
CONCORD STREET
KENOZA AVENUE
CASTLE ROAD
LAKESIDE STREET
EASTLAND TERRACE
LAKEWOOD TERRACE
WESTLAND TERRACE
WOODLAND WAY
MILL STREET
ARLINGTON STREET
JOHNSON STREET
SANDERS ROAD
PARK STREET
CHESTNUT STREET
BELVEDERE ROAD
DWIGHT STREET
GOODALE STREET
GOODALE ROAD
BOWDOIN DRIVE
PATRICIA ANN DRIVE
GOLDEN HILL AVENUE
LINWOOD STREET
MOODY STREET
BOARDMAN STREET
WATER STREET
BARBERRY LANE
KENOZA STREET
GARY AVENUE
EAST BROADWAY
MIDDLE ROAD
CENTRE STREET
THOMPSON
KIM

N

0 500 1,000 2,000 Feet

Flood Zones / Wetlands	
Haverhill, MA	
PROJ NO: 13582	DATE: 10/3/2017
WRIGHT-PIERCE Engineering a Better Environment	FIGURE: 3

TAH W:\GIS_Development\Projects\MA\Haverhill\13582_MerrimackRiverAngleWellMXDs\FigureX-X-EnvironmentalResources-FloodZonesWetlands-v6-11x17-L.mxd



Rare Species / Open Spaces

Haverhill, MA

PROJ NO:	DATE:
13582	10/10/2017

WRIGHT-PIERCE
Engineering a Better Environment

FIGURE: 2

TAH \\wp-fs-top\gis\GIS_Development\Projects\MA\Haverhill\13582_MerrimackRiverAngleWell\MXDs\FigureX-X-EnvironmentalResources-RareSpeciesOpenSpacesProtectionLevel-3-11x17-L.mxd

Representative Site Photographs
Proposed Municipal Radial Collection Well Site
Hill Property
309 East Broadway, Haverhill



Photo 1: View of Existing House

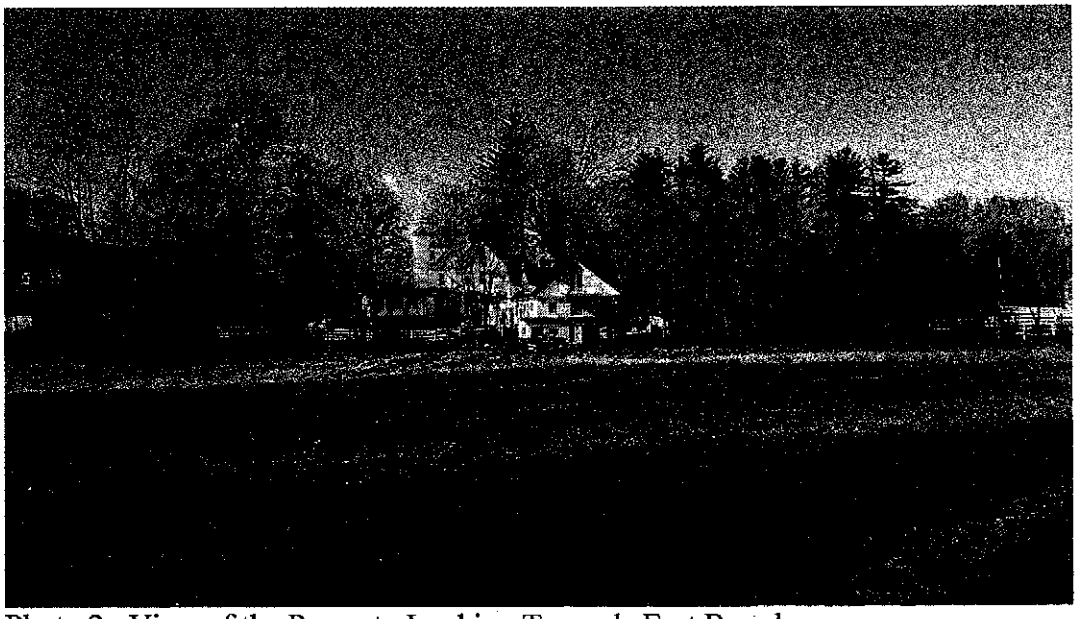

Photo 2: View of the Property Looking Towards East Broadway



Photo 3: View of the Wooded Strip along the Merrimack River, With the River in the Background.

Project Schedule

Haverhill, MA

Radial Collector Well and Transmission Main

Conceptual Project Schedule

Phase I – Radial Collector Confirmatory Exploration and Preliminary Permitting

Phase I included the development of a bedrock contour of the river bottom based on data collected previously. Land borings were also conducted near the targeted collector well location as well as along the proposed well laterals in the river. A groundwater model was developed to predict the yield of the well. A 10-inch diameter test well was constructed and tested on land at the targeted location of the collector well. *This work has been completed.*

MassDEP BRP-17 – Approval to Site and Conduct Pump Test, is currently being prepared and expected to be submitted by the end of October 2017. MassDEP is expected to return comments and issue approval within 60 days.

Phase II – MEPA Permitting

The project requires the filing of an Environmental Notification Form (ENF) because it triggers thresholds for water withdrawals. The ENF is currently being prepared and is expected to be submitted in October 2017. Following the issuance of a DEIR scope (anticipated November/December 2017), the DEIR will be prepared and submitted. This effort is expected to take up to 8 months but is highly dependent on the ENF comments and scope. A target submission date of the DEIR is August 2018.

An FEIR will be prepared to address comments to the DEIR. It is unknown how long this effort will take but has been assumed to be 6-8 months. This is targeted to be completed and submitted for approval in March/April 2019.

Phase III – Design, Construct and Permit Radial Collector well

Prior to approval of a permanent well supply by MassDEP, the radial collector well must be constructed and tested; at this point the collector well is still considered a test well. Design of the radial collector well is expected to take up to 4 months and will commence following the issuance of the DEIR Certificate. Upon completion of the design, it will be submitted to MassDEP under BRP-WS 20 – Approval to Construct Radial Collector well. Review and approval of the design by MassDEP is anticipated to take 60 days.

Following issuance of an approved FEIR, the project will be advertised for bids by specialty well contractors. Bidding is expected to last up to 2-3 months and is anticipated to be complete in July 2019. Award will be followed by construction of the radial collector well.

Construction of the radial collector is expected to occur over a 10-12-month period. Following acceptance, the well will undergo a demonstration yield and water quality test. The groundwater model

will be updated with the new pump test data. MassDEP BRP-WS 19 – Approval of Pump Test will be submitted for review and approval. Once approved, MassDEP BRP-WM 02 – Water Management Act Amendment will be submitted. These activities are expected to be completed by Spring/Summer of 2020.

Phase IV – Design and Construct Radial Collector Well Pumping System and Transmission Main

Prior to design, MassDEP BRP-WS 20 – Approval to Construct will be submitted. Upon approval, design of the pumping system and related infrastructure and the transmission main will commence. Each separate project will require 6-8 months to complete.

Wetland Reports

Caron Environmental Consulting

978-874-5469

Wetlands • Forestry • Permitting • Habitat Studies

October 10, 2017

Mr. Robert Williamson, P.E.
Wright-Pierce
75 Washington Avenue; Suite 202
Portland, ME 04101

Re: Wetland Delineation
Proposed Raw Water Main Route
East Broadway to Kenoza WTP/Haverhill

Dear Mr. Williamson:

As requested we have conducted a wetland delineation on the above-referenced site. The delineation was conducted on April 18 and 24, 2017. It was based on observations of the plant communities, soil conditions and bank topography.

Several wetland areas occur near the proposed raw water main route. The edges of these areas were delineated with numbered blue flagging. The types of wetlands and the associated vegetation and soil conditions vary widely. The wetland series are tabulated below:

Flag Numbers	Resource Area
B1-B5	Bordering Vegetated Wetland and Top of Bank of Stream
C1-C9	Bordering Vegetated Wetland and Top of Bank of Stream
D1-D8	Bordering Vegetated Wetland and Top of Bank of Stream
E1-E23	Bordering Vegetated Wetland
F1-F8	Bordering Vegetated Wetland
G1-G10	Bordering Vegetated Wetland
H1-H10	Non-Bordering Vegetated Wetland (see description below)
I1-I14	Top of Bank of Intermittent Stream
J1-J8	Bordering Vegetated Wetland
K1-K5	Bordering Vegetated Wetland
L1-L4	Non-Bordering Vegetated Wetland
M1-M8	Bordering Vegetated Wetland
N1-N5	Bordering Vegetated Wetland and Top of Bank of Intermittent Stream
O1-O6	Bordering Vegetated Wetland
P1-P5	Bordering Vegetated Wetland
Q1-Q7	Bordering Vegetated Wetland
R1-R11	Bordering Vegetated Wetland
S1-S7	Bordering Vegetated Wetland
T1-T56	Bordering Vegetated Wetland and Top of Bank of Kenoza Lake
U1-U5	Bordering Vegetated Wetland
V1-V6	Bordering Vegetated Wetland
W1- W4	Non-Bordering Vegetated Wetland

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Fax 978-874-1790 • Email: caronenv@aol.com

The Non-Bordering Vegetated Wetlands do not appear to be subject to regulation under the Massachusetts Wetlands Protection Act. They are likely regulated under the Haverhill Wetlands Ordinance and may be subject to federal jurisdiction.

The H-series wetland is located within an area that was heavily disturbed well in the past. It has an odd mixture of upland and wetland vegetation and extensive areas of disturbed soils, both filled and excavated areas. In places there are organic soils, but these may have been placed rather than representing wetland conditions. In the disturbed soils there is some mottling near the surface and water-stained leaves are present, but otherwise the soils appeared fairly dry. To accurately determine the status of this area would require a detailed analysis, not warranted for the purposes of this project. Accordingly we recommend that we show a buffer zone from this area for this project, but it should be understood that this in no way creates any precedence about the status of this area.

There are also perennial streams near the project in multiple locations. The annual high water marks along these streams were delineated with pink flagging labeled AHW1 to AHW4, AHW100 to AHW107, AHW200 to AHW209, AHW300 to AHW306 and AHW400 to AHW408. The 200-foot Riverfront Areas should be measured from these flags. While the Riverfront Areas should have no impact on water main installation the extent of them still should be shown on the design plans.

Also, at the time of the delineation, bridge construction was underway on East Broadway at Cottles Creek and we were unable to access that location to flag the wetlands and annual high water mark. As this project was recently reviewed by the Conservation Commission we recommend that the extent of wetlands in that area be based upon the plans that were approved by the Commission.

Please be aware that portions of the route are located within the 100-year flood zone. The extent of these areas will need to be determined by your office based upon the F.I.R.M. Maps.

If you have any questions in regards to this matter please feel free to contact us.

Very truly yours,
CARON ENVIRONMENTAL CONSULTING,
By;



Charles E. Caron

Caron Environmental Consulting

978-874-5469

Wetlands • Forestry • Permitting • Habitat Studies

October 10, 2017

Mr. Robert Williamson, P.E.
Wright-Pierce
75 Washington Avenue; Suite 202
Portland, ME 04101

Re: Wetland Delineation
Proposed Radial Collection Well Site
309 East Broadway/Haverhill

Dear Mr. Williamson:

As requested we have conducted a wetland delineation on the above-referenced site. The delineation was conducted on September 23, 2016. It was based on observations of the plant communities, soil conditions and bank topography.

The top of Bank along the Merrimack River was delineated with blue flagging labeled AHW1 to AHW35. There are no vegetated wetlands on the site. The Bank along the river is steep and the flags were placed at the upper break in slope, which is slightly landward of the likely annual high water mark.

There is a 200-foot Riverfront Area along the river. Its extent should be measured from the AHW flags. In addition much of the site is located within the 100-year flood zone. Its limits will need to be determined based on the topography, flood elevation and extent shown on the F.I.R.M. Map.

The site contains a single-family house with landscaped areas and gardens around it. The majority of the property is a grass field. There is a narrow wooded strip along and just landward of the Bank.

The most abundant species that are confined primarily to the Bank include green ash, silver maple, Norway maple and speckled alder. Below the bank, in the narrow tidal zone, purple loosestrife, bulrushes and *Polygonums* predominate. River birch and Japanese knotweed are abundant both in the uplands and on the Bank. The most common species in the adjacent uplands include sassafras, sugar maple, black oak, red oak, shagbark hickory, basswood, quaking aspen, black locust, white pine, red cedar, bittersweet, burningbush, multiflora rose, Russian olive, Morrow honeysuckle, poison ivy, upland sedges, little bluestem, Canada goldenrod, red fescue and Kentucky bluegrass. Many of these species are also present on the upper portions of the Bank.

If you have any questions in regards to this matter please feel free to contact us.

Very truly yours,
CARON ENVIRONMENTAL CONSULTING,
By;

Charles E. Caron

247 Bragg Hill Road • Westminster, MA 01473
Fax 978-874-1790 • Email: caronenv@aol.com

NHESP

MASSWILDLIFE

DIVISION OF
FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6300 | f: (508) 389-7890
MASS.GOV/MASSWILDLIFE

Jack Buckley, *Director*

January 6, 2017

Charles Caron
Caron Environmental Consulting
247 Bragg Hill Road
Westminster MA 01473

RE: Project Location: 309 East Broadway
Town: HAVERHILL
NHESP Tracking No.: 06-19966

To Whom It May Concern:

Thank you for contacting the Natural Heritage and Endangered Species Program of the MA Division of Fisheries & Wildlife (the "Division") for information regarding state-listed rare species in the vicinity of the above referenced site. Based on the information provided, this project site, or a portion thereof, is located **within** *Priority Habitat 1321* (PH 1321) and *Estimated Habitat 65* (EH 65) as indicated in the *Massachusetts Natural Heritage Atlas* (13th Edition). Our database indicates that the following state-listed rare species have been found in the vicinity of the site:

Scientific name	Common Name	Taxonomic Group	State Status
Acipenser brevirostrum	Shortnose Sturgeon	Fish	Endangered
Bidens eatonii	Eaton's Beggar-Ticks	Plant	Endangered
Acipenser oxyrinchus	Atlantic Sturgeon	Fish	Endangered

The species listed above are protected under the Massachusetts Endangered Species Act (MESA) (M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00). State-listed wildlife are also protected under the state's Wetlands Protection Act (WPA) (M.G.L. c. 131, s. 40) and its implementing regulations (310 CMR 10.00). Fact sheets for most state-listed rare species can be found on our website (www.mass.gov/nhesp).

Please note that projects and activities located within Priority and/or Estimated Habitat **must** be reviewed by the Division for compliance with the state-listed rare species protection provisions of MESA (321 CMR 10.00) and/or the WPA (310 CMR 10.00).

Wetlands Protection Act (WPA)
If the project site is within Estimated Habitat and a Notice of Intent (NOI) is required, then a copy of the NOI must be submitted to the Division so that it is received at the same time as the local conservation commission. If the Division determines that the proposed project will adversely affect the actual Resource Area habitat of state-protected wildlife, then the proposed project may not be permitted (310 CMR 10.37, 10.58(4)(b) & 10.59). In such a case, the project proponent may request a consultation with the Division to discuss potential project design modifications that would avoid adverse effects to rare wildlife habitat.

A streamlined joint MESA/WPA review process is available. When filing a Notice of Intent (NOI), the applicant may file concurrently under the MESA on the same NOI form and qualify for a 30-day streamlined joint review. For a copy of the NOI form, please visit the MA Department of Environmental Protection's website: http://www.mass.gov/eea/agencies/massdep/service/approvals/wpa-form-3.html.

MA Endangered Species Act (MESA)

If the proposed project is located within Priority Habitat and is not exempt from review (see 321 CMR 10.14), then project plans, a fee, and other required materials must be sent to Natural Heritage Regulatory Review to determine whether a probable Take under the MA Endangered Species Act would occur (321 CMR 10.18). Please note that all proposed and anticipated development must be disclosed, as MESA does not allow project segmentation (321 CMR 10.16). For a MESA filing checklist and additional information please see our website: www.mass.gov/dfw/nhesp/regulatory-review.

We recommend that rare species habitat concerns be addressed during the project design phase prior to submission of a formal MESA filing, as avoidance and minimization of impacts to rare species and their habitats is likely to expedite endangered species regulatory review.

This evaluation is based on the most recent information available in the Natural Heritage database, which is constantly being expanded and updated through ongoing research and inventory. If the purpose of your inquiry is to generate a species list to fulfill the federal Endangered Species Act (16 U.S.C. 1531 et seq.) information requirements for a permit, proposal, or authorization of any kind from a federal agency, we recommend that you contact the National Marine Fisheries Service at (978)281-9328 and use the U.S. Fish and Wildlife Service's Information for Planning and Conservation website (https://ecos.fws.gov/ipac). If you have any questions regarding this letter please contact Daisy Medeiros, Endangered Species Review Assistant, at (508) 389-6357.

Sincerely,

Thomas W. French

Thomas W. French, Ph.D.
Assistant Director

Caron Environmental Consulting

978-874-5469

Wetlands • Forestry • Permitting • Habitat Studies

March 24, 2017

Ms. Daisy Madeiros
Natural Heritage & Endangered Species Program
MA Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, MA 01581

Re: NHESP Tracking # 06-19966
309 East Broadway, Haverhill

Dear Ms. Madeiros:

Enclosed, please find a Conceptual Site Plan and a plan of possible water main routes for the above-referenced project proposed by the City of Haverhill. The proposed project is the installation of a radial collector well, access driveway and electrical building on the site at 309 East Broadway, adjacent to the Merrimack River. Part of the project will also be the installation of a water main from the site to the City's water treatment plant at Kenoza Lake.

As you are aware there is a Priority Habitat Area for three species which encompasses most of the property at 309 East Broadway as well as portions of the roadways along the possible water main route.

To ensure that the Program's recommendations are known early on and so that they can be incorporated into the design we are requesting that the Program conduct a pre-filing review of the project. Please review the enclosed information and provide us with your preliminary thoughts, suggestions or concerns about the project. In addition, we would welcome the opportunity to walk the site with you so that you can become familiar with the site's condition. Based on your review we would like to receive your input so that it can be incorporated into the permitting and design processes.

We thank you for all of your assistance with this matter. If you have any questions or need additional information please feel free to contact us.

Very truly yours,

Charles E. Caron

Enc.

247 Bragg Hill Road • Westminster, MA 01473
Fax 978-874-1790 • Email: caronenv@aol.com

Caron Environmental Consulting

978-874-5469

Wetlands • Forestry • Permitting • Habitat Studies

November 30, 2016

National Heritage & Endangered Species Program
MA Division of Fisheries and Wildlife
1 Rabbit Hill RD.
Westborough, MA 01581

Re: Proposed Municipal Well
Hill Property
309 East Broadway/Haverhill

Dear Sir or Madam:

Enclosed, please find an Information Request Form, locus map and check for the above-referenced project.

In addition, we would like to request a pre-filing meeting and/or site walk to get your preliminary input on the project. The proposed project is the construction of a municipal well, pump house, water main, access driveway, utility connections, and appurtenances.

We would greatly appreciate obtaining your preliminary thoughts, suggestions, or concerns, if any, about the project, so that we can incorporate them into the design and to minimize any potential delays. We would welcome the opportunity to walk the site with you so that you can become familiar with its condition.

We thank you for all of your assistance with this matter. If you have any questions, please feel free to contact us.

Very truly yours,
CARON ENVIROMENTAL CONSULTING
By:
Charles E. Caron

Enc.

247 Bragg Hill Road • Westminster, MA 01473
Fax 978-874-1790 • Email: caronenv@aol.com

MESA Information Request Form

Please complete this form to request site-specific information from the Natural Heritage & Endangered Species Program (Please submit only one project per request form).

Please include a check for $50.00 made out to Comm. of MA – NHESP.*

Requestor Information

Name: Charles E. Caron

Affiliation: Caron Enviromental Consulting

Address: 247 Bragg Hill Road

City: Westminster State: MA Zip Code: 01473

Daytime Phone: 978-874-5469 Ext. Email address: caronenv@aol.com

Project Information

Project or Site Name: Hill Property

Location: 309 East Broadway Town: Haverhill

Name of Landowner or Project Proponent: Joyce Hill

Acreage of the Property: 8

Description of Proposed Project and Current Site Conditions: (If necessary attach additional sheet)
The site of the project currently contains a single-family home and associated landscaped areas, a field that is used primarily for pastures and a narrow strip of woods along the river. The proposed project is the construction of a municipal radial collector well, pump house, water main, acess driveway, utility connections, and appurtenances.

- ☑ Will this project be reviewed as a Notice of Intent by the local Conservation Commission?
- ☑ Will this project be undergoing MEPA review for reasons other than rare species?
- ☑ Have you enclosed the required copy of a USGS topographic map in the scale 1:24,000 or 1:25,000 (not copy reduced) with the site location clearly marked and centered on the copy page? (Copies of Natural Heritage Atlas pages are not accepted)

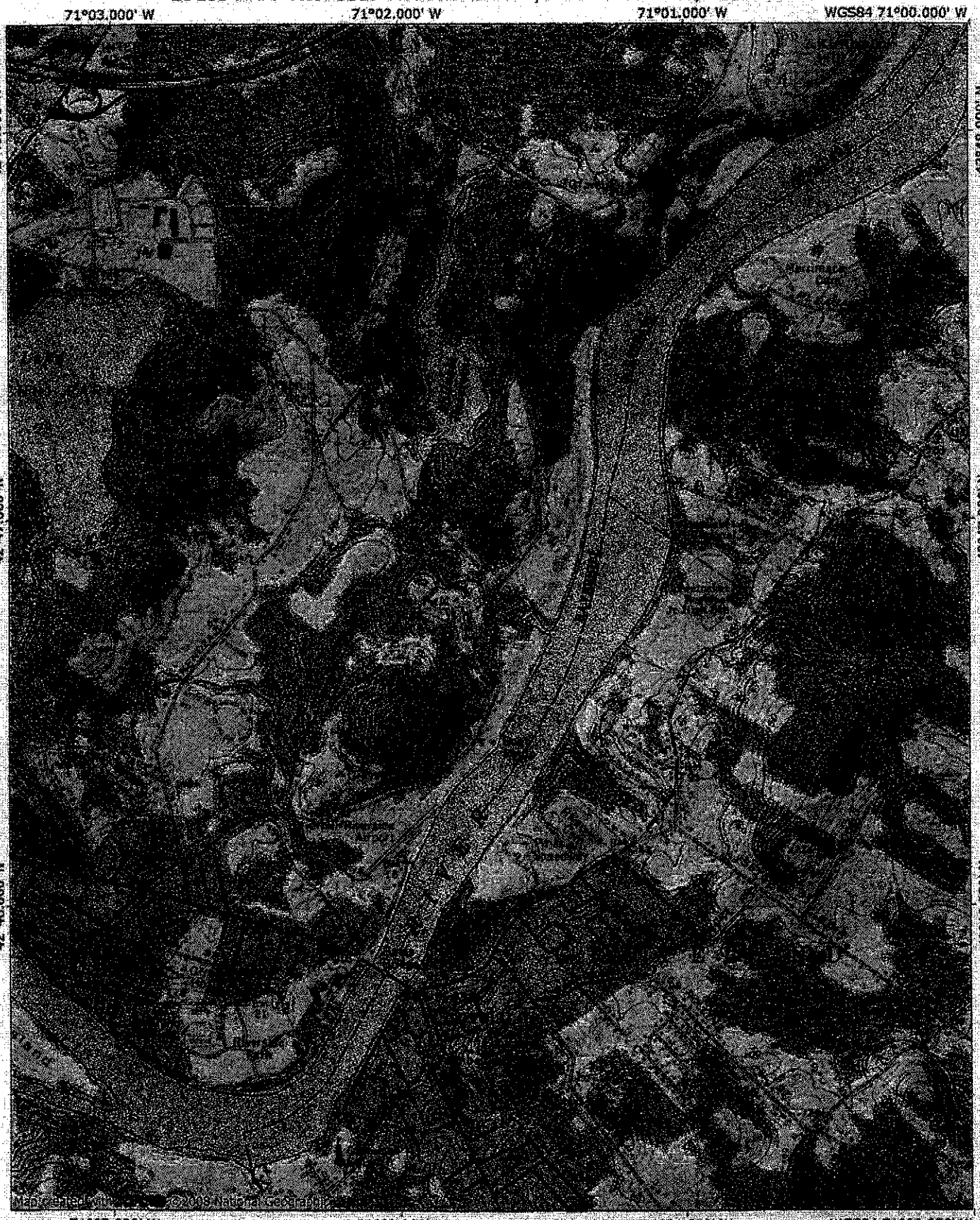
Please **mail** this completed form and topographic map to:

Regulatory Review
Natural Heritage and Endangered Species Program
MA Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, MA 01581

Questions regarding this form should be directed according to the county that the property is located:
Berkshire, Essex, Franklin, Hampshire, Hampden, Middlesex & Worcester Counties call: 508-389-6357
Barnstable, Bristol, Dukes, Nantucket, Norfolk, Plymouth & Suffolk Counties call: 508-389-6385

Persons requesting information will receive a written response within 30 days of receipt of all information required. Please do not ask for an expedited review. *If you are requesting information for habitat management or conservation purposes and you are a non-profit conservation group, government agency or working with a government agency please fill out a Data Release Form.

LOCUS MAP: PROPOSED MUNICIPAL WELL; EAST BROADWAY, HAVERHILL



NATIONAL GEOGRAPHIC

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Massachusetts Historical Commission and
Board of Underwater Archaeological Resources

The COMMONWEALTH OF MASSACHUSETTS
BOARD OF UNDERWATER ARCHAEOLOGICAL RESOURCES
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
251 Causeway Street, Suite 800, Boston, MA 02114-2136
Tel. (617) 626-1141 Fax (617) 626-1240 Web Site: www.mass.gov/eea/agencies/czm/buar/

December 15, 2016

Mr. Charles E. Caron
Caron Environmental Consulting
247 Bragg Hill Road
Westminster, MA 01473

RE: Proposed Municipal Well, 309 East Broadway, Merrimack River, Haverhill, MA

Dear Mr. Caron,

The staff of the Massachusetts Board of Underwater Archaeological Resources has reviewed the above referenced project's MHC PNF and supporting materials provided by Caron Environmental Consulting on behalf of the City of Haverhill. We offer the following comments.

The Board has conducted a preliminary review of its files and secondary literature sources to identify known and potential submerged cultural resources in the proposed project area. While archaeological sites are in the vicinity of the proposed well, no other records for any underwater archaeological resources was found. Based on the results of this review, distance from known sites, and the limited nature of the proposed project, the Board expects that this project is unlikely to impact submerged cultural resources.

However, should heretofore-unknown submerged cultural resources be encountered during the course of the project, the Board expects that the project's sponsor will take steps to limit adverse affects and notify the Board, as well as other appropriate agencies, immediately in accordance with the Board's *Policy Guidance for the Discovery of Unanticipated Archaeological Resources*.

The Board appreciates the opportunity to provide these comments as part of the review process. Should you have any questions regarding this letter, please do not hesitate to contact me at the address above, by email at victor.mastone@state.ma.us, or by telephone at (617) 626-1141.

Sincerely,

Victor T. Mastone
Director

/vtm

Printed on Recycled Paper

The Commonwealth of Massachusetts

William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

December 20, 2016

Charles E. Caron
Caron Environmental Consulting
247 Bragg Hill Road
Westminster, MA 01473

RE: Municipal Well, Hill Property, 309 East Broadway, Haverhill, MA. MHC # RC.61375

Dear Mr. Caron:

Staff of the Massachusetts Historical Commission (MHC) have reviewed the Project Notification Form (PNF), received December 8, 2016, for the project referenced above. The project includes construction of a new well and associated infrastructure at the address referenced above in Haverhill.

The MHC is unable to ascertain the project impact area and requires additional information. Please submit scaled existing and proposed conditions project plans, sized no larger than 11" by 17", to the MHC for review and comment. Project plans should show all proposed access and pipeline routes, pump station location, equipment and materials storage and staging areas.

A copy of the Environmental Notification Form (ENF) should be submitted to the MHC for review and comment when it is filed with the MEPA office.

These comments are offered to assist in compliance with M.G.L c. 9, ss. 26-27C (950 CMR 71) and MEPA (301 CMR 11). If you have any questions or require additional information, please contact me at this office.

Sincerely,

Jonathan K. Patton
Archaeologist/Preservation Planner
Massachusetts Historical Commission

xc: Robert E. Ward, Deputy Director, City of Haverhill Department of Public Works

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.sec.state.ma.us/mhc

Caron Environmental Consulting

978-874-5469

Wetlands • Forestry • Permitting • Habitat Studies

November 30, 2016

Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, MA 02125

Re: Proposed Municipal Well
Hill Property
309 East Broadway/Haverhill

Dear Sir or Madam:

Enclosed, please find a Project Notification Form with supplemental information which includes a locus map, assessors' map, conceptual plan and representative site photos.

The site of the project currently contains a single-family home and associated landscaped areas, a field that is used primarily for pastures and a narrow strip of woods along the river. The proposed project is the construction of a municipal radial collector well, pump house, water main, access driveway, utility connections, and appurtenances.

The goal is to have the existing home remain, but it is not yet certain that will be possible.

If you have any questions in regards to this mater, please feel free to contact us.

Very truly yours,
CARON ENVIROMENTAL CONSULTING
By:
Charles E. Caron

Enc.

247 Bragg Hill Road • Westminster, MA 01473
Fax 978-874-1790 • Email: caronenv@aol.com

APPENDIX A

MASSACHUSETTS HISTORICAL COMMISSION
220 MORRISSEY BOULEVARD
BOSTON, MASS. 02125
617-727-8470, FAX: 617-727-5128

PROJECT NOTIFICATION FORM

Project Name: Proposed Municipal Well, Hill Property

Location / Address: 309 East Broadway

City / Town: Haverhill

Project Proponent

Name: Town of Haverhill, Public Works Department, Water Division

Address: 131 Amesbury Road

City/Town/Zip/Telephone: Haverhill MA, 01830 978-374-2385

Agency license or funding for the project (list all licenses, permits, approvals, grants or other entitlements being sought from state and federal agencies).

Agency Name	Type of License or funding (specify)
See attached list	

Project Description (narrative):

The site for the proposed project currently contains a single-family home built in 1921, associated landscaped area, a field that is used primarily for pastures and a narrow strip of woods along the river. The proposed project is the construction of a municipal radial collector well, pump house, water main, access driveway, utility connections, and appurtenances.

Does the project include demolition? If so, specify nature of demolition and describe the building(s) which are proposed for demolition.

No demolition is anticipated. The goal is to have the existing house remain but it is not certain that will be possible.

Does the project include rehabilitation of any existing buildings? If so, specify nature of rehabilitation and describe the building(s) which are proposed for rehabilitation.

No

Does the project include new construction? If so, describe (attach plans and elevations if necessary).

Yes, construction of new well, pump house, and access driveway

APPENDIX A (continued)

To the best of your knowledge, are any historic or archaeological properties known to exist within the project's area of potential impact? If so, specify.

What is the total acreage of the project area?

Woodland	1 acres	Productive Resources:	
Wetland	acres	Agriculture	5 acres
Floodplain	(6 overlay) acres	Forestry	acres
Open space	acres	Mining/Extraction	acres
Developed	acres	Total Project Acreage	8 acres

What is the acreage of the proposed new construction? 1 acres

What is the present land use of the project area?

A single-family house and pasture.

Please attach a copy of the section of the USGS quadrangle map which clearly marks the project location.

This Project Notification Form has been submitted to the MHC in compliance with 950 CMR 71.00.

Signature of Person submitting this form: Charles E. Caron Date: 12/5/16

Name: Charles E. Caron

Address: 247 Bragg Hill Road

City/Town/Zip: Westminster MA 01473

Telephone: (978) 874-5469

REGULATORY AUTHORITY

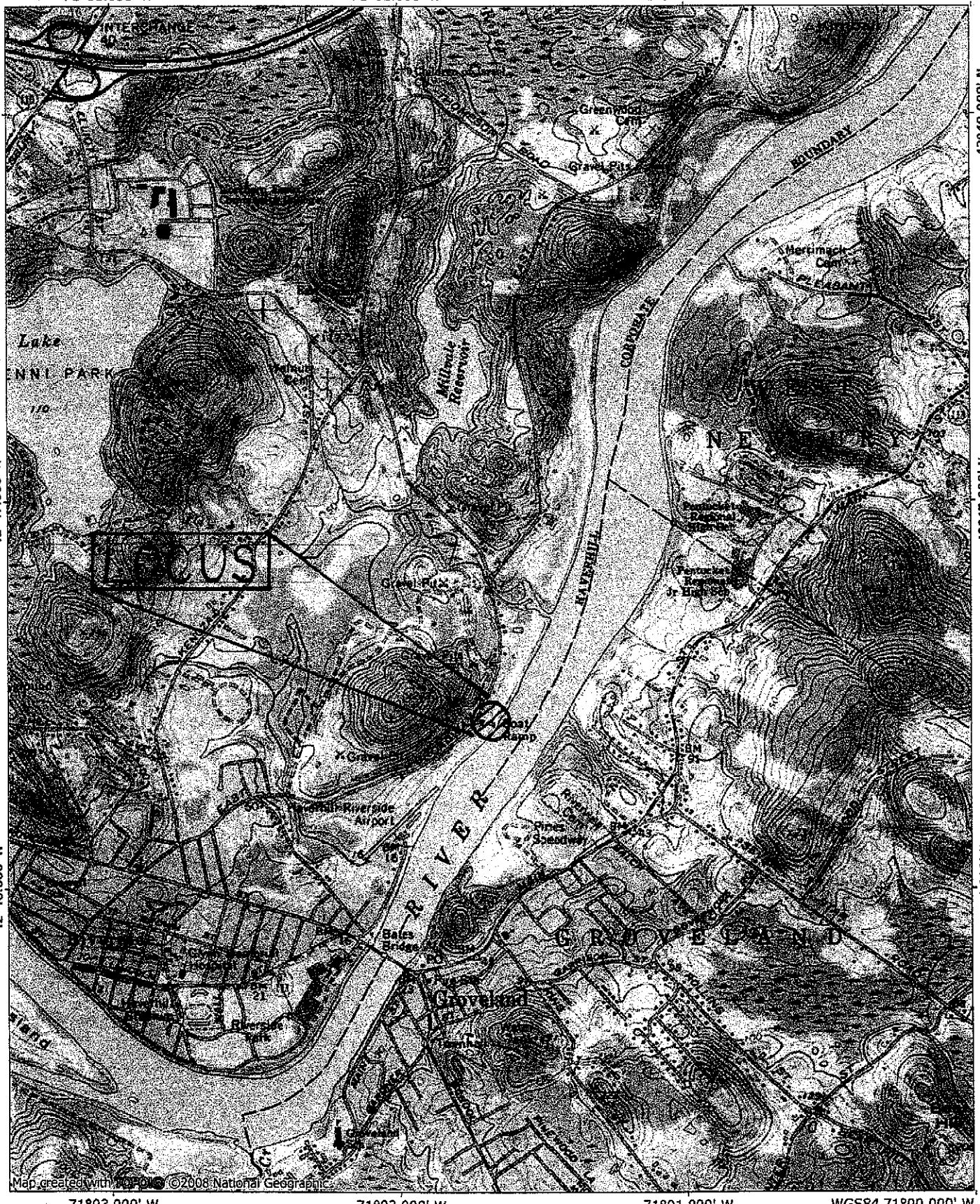
950 CMR 71.00: M.G.L. c. 9, §§ 26-27C as amended by St. 1988, c. 254.

Hill Property
309 East Broadway
Haverhill

State Agency Actions Required:

- Dept. of Environmental Protection
  - Waterways Program Request For Determination
  - BRP WS 17 – Approval to Site a Source and Conduct a Pumping Test for a Source Greater than 70 gallons per minute
  - BRP WS 19 – Approval of Pumping Test Report for a Source Greater than 70 gallons per minute
  - BRP WS 20 – Approval to Construct a Source of 70 gallons per minute or greater
  - BRP WS 32 – Distribution Modifications for Systems that serve more than 3,300 people
- Possibly Water Management Act at the end of construction and prior to going on-line
- Natural Heritage and Endangered Species Program: Project Review
- MEPA: Environmental Notification Form and Environmental Impact Report

LOCUS MAP: PROPOSED MUNICIPAL WELL; EAST BROADWAY, HAVERHILL

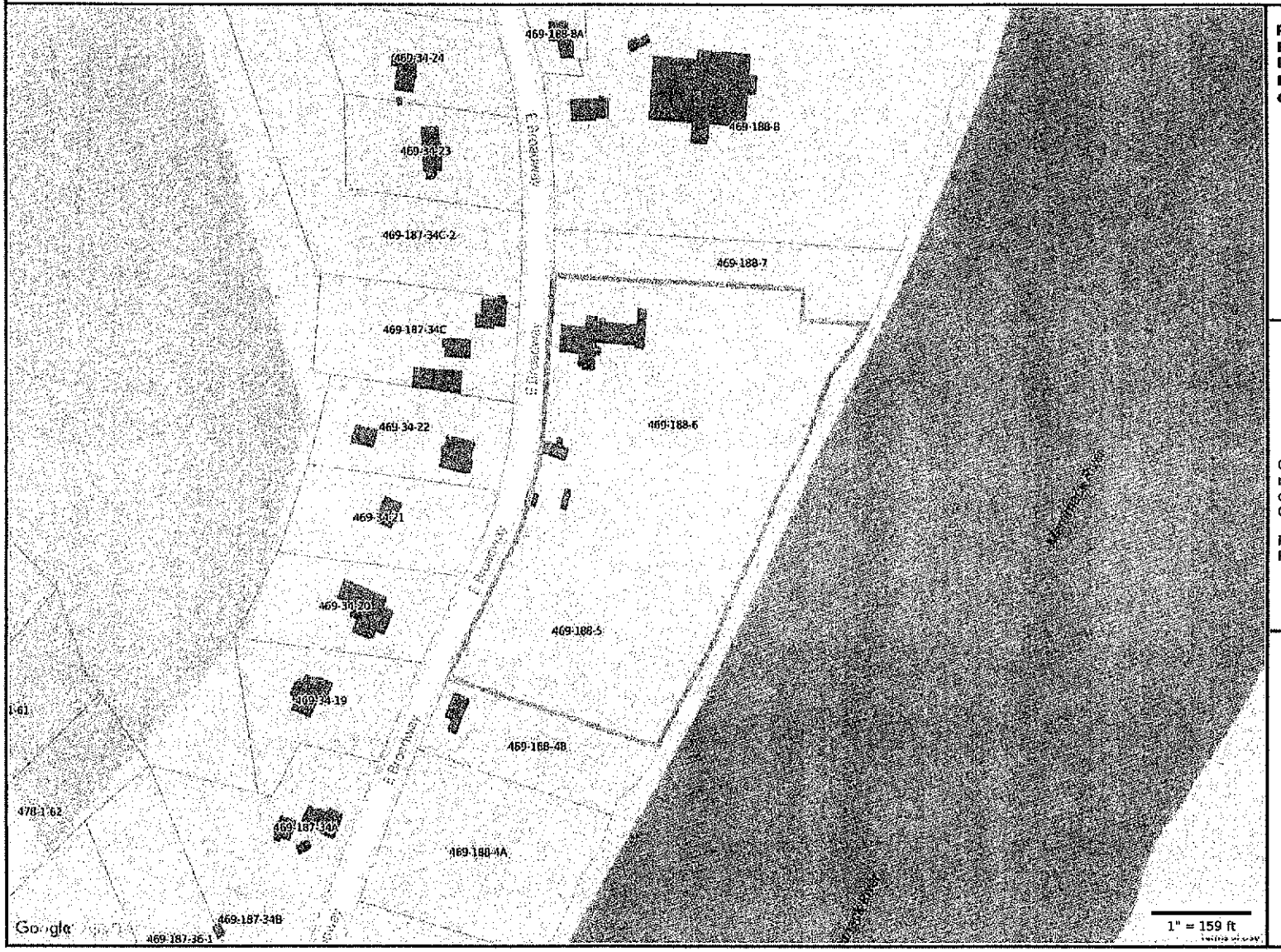


NATIONAL GEOGRAPHIC

0.0 0.5 miles
0.0 0.5 1.0 km

MN TN
14½°

11/30/16

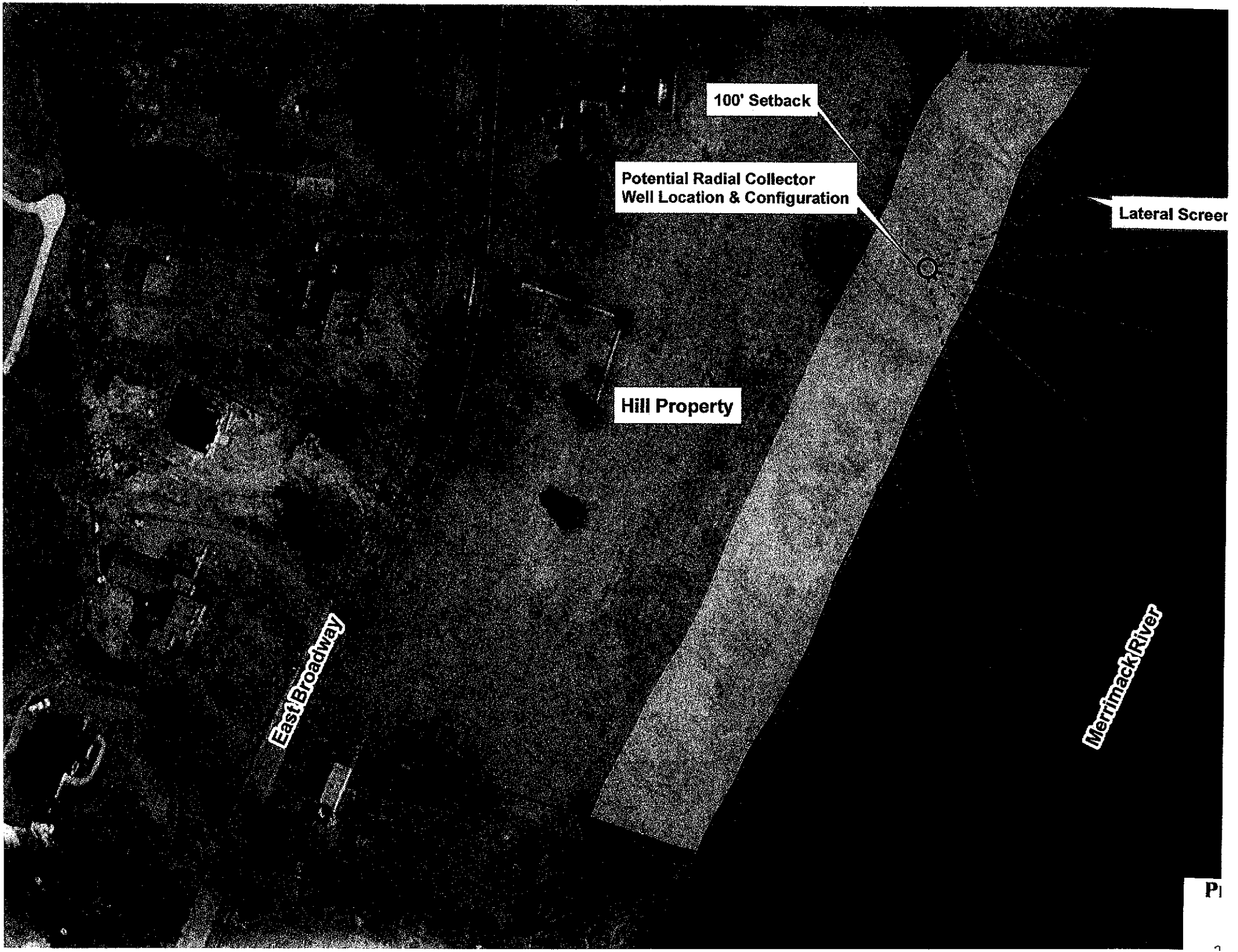


Property Information
Property ID 469-188-6
Location 309 EAST BROADWAY
Owner HILL JOYCE E

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Haverhill, MA makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Parcels updated March 1, 2016
Properties updated March 1, 2016


100' Setback
Potential Radial Collector
Well Location & Configuration
Lateral Screer
Hill Property
East Broadway
Merrimack River

Representative Site Photographs
Proposed Municipal Well Site
Hill Property
309 East Broadway, Haverhill



Photo 1: View of Existing House

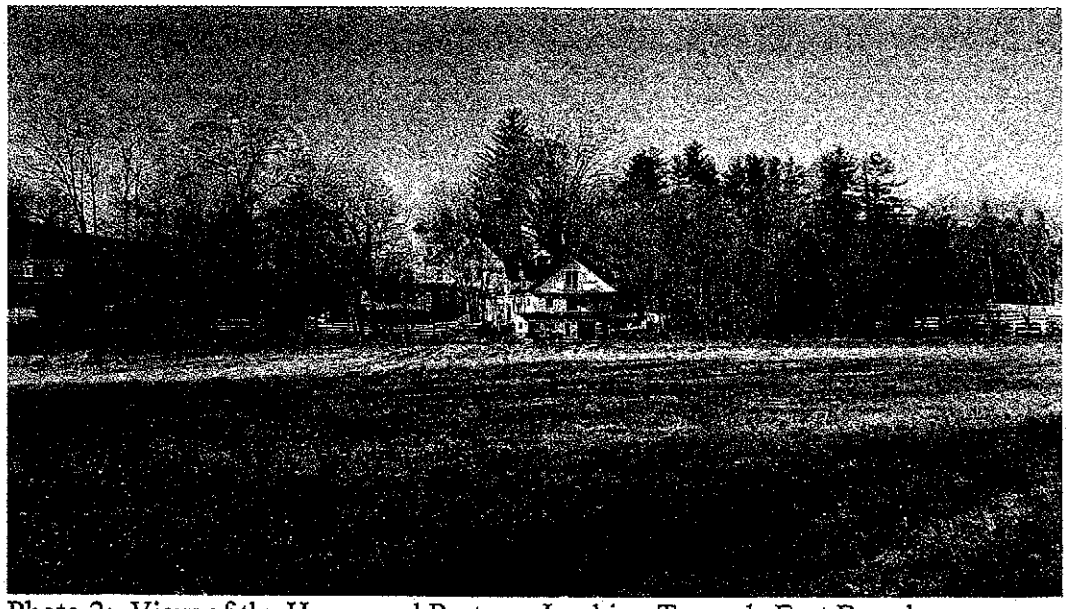


Photo 2: View of the House and Pastures Looking Towards East Broadway

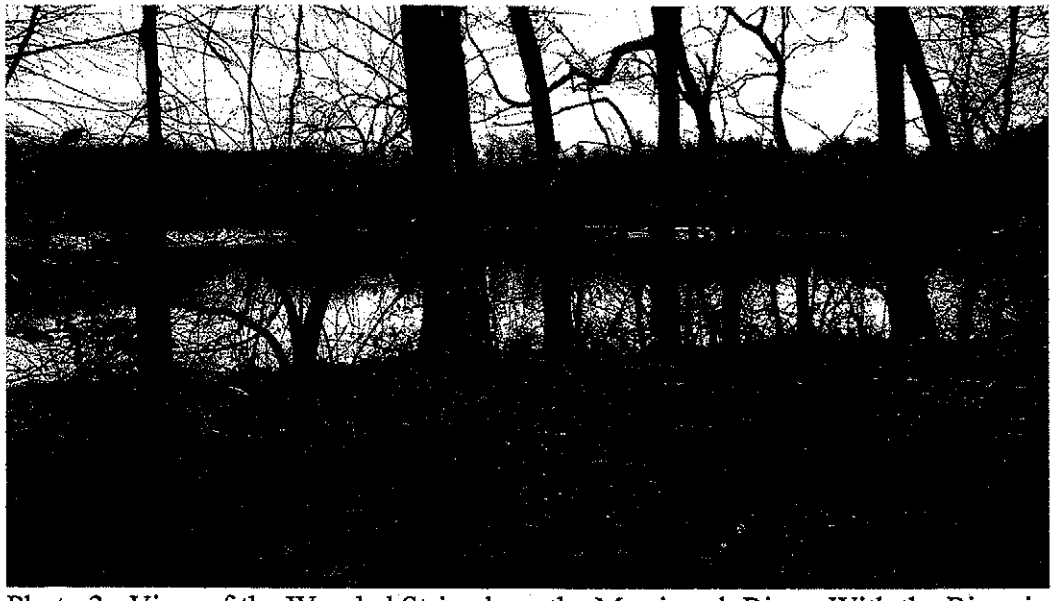
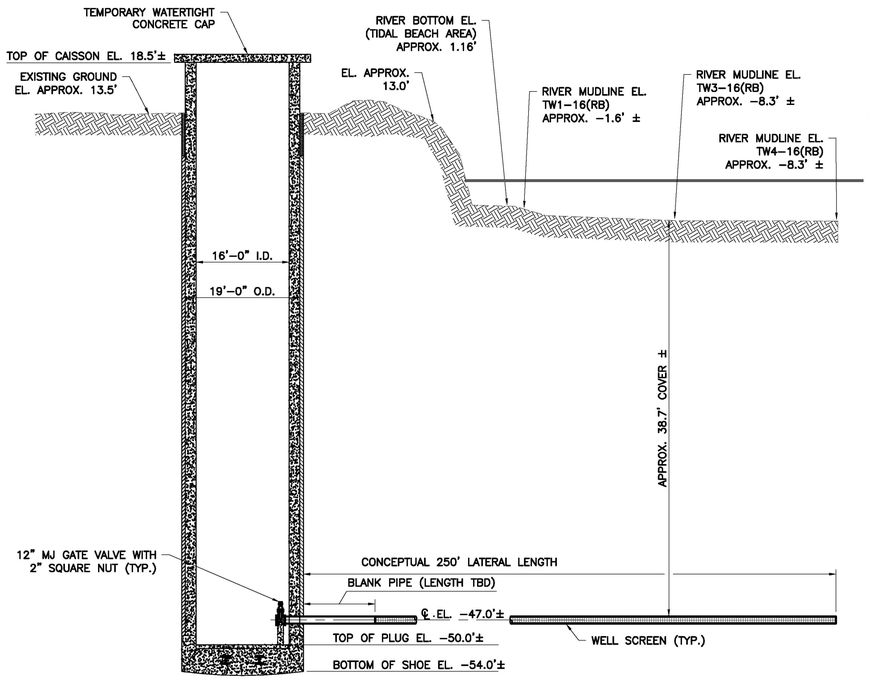


Photo 3: View of the Wooded Strip along the Merrimack River, With the River in the Background.

Plans

NOTES

1. EXISTING CONDITIONS INFORMATION SHOWN ON THIS PLAN ARE BASED ON THE OCTOBER 3 & 4, 2016 LAND SURVEY PERFORMED BY LIGHTHOUSE LAND SURVEYING, LLC, OF TAUNTON, MASSACHUSETTS.
2. HORIZONTAL DATUM: MASSACHUSETTS STATE PLANE (MAINLAND ZONE) – US FOOT – NAD83 VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAD88).
3. PROPERTY LINES SHOWN ARE BASED UPON AVAILABLE ASSESSORS GIS INFORMATION AND ARE FOR GRAPHICAL REPRESENTATION PURPOSES ONLY AND SHOULD BE CONSIDERED APPROXIMATE.
4. TREE LOCATIONS SHOWN DO NOT REFLECT EXTENTS OF CANOPY. SIZES SHOWN REFLECT APPROXIMATE TRUNK DIAMETER.
5. AVERAGE HIGH WATER MARK LOCATIONS AND WETLAND FLAGS SHOWN ON THIS PLAN WERE DELINEATED ON SEPTEMBER 26, 2016, BY CHARLES CARON OF CARON ENVIRONMENTAL CONSULTING OF WESTMINSTER, MASSACHUSETTS.
6. DEPTHS TO THE RIVER MUDLINE SHOWN ON THIS PLAN ARE APPROXIMATE AND WERE CALCULATED BASED ON OBSERVATIONS MADE DURING RIVER-BASED DRILLING WORK THAT OCCURRED BETWEEN NOVEMBER-DECEMBER 2016.

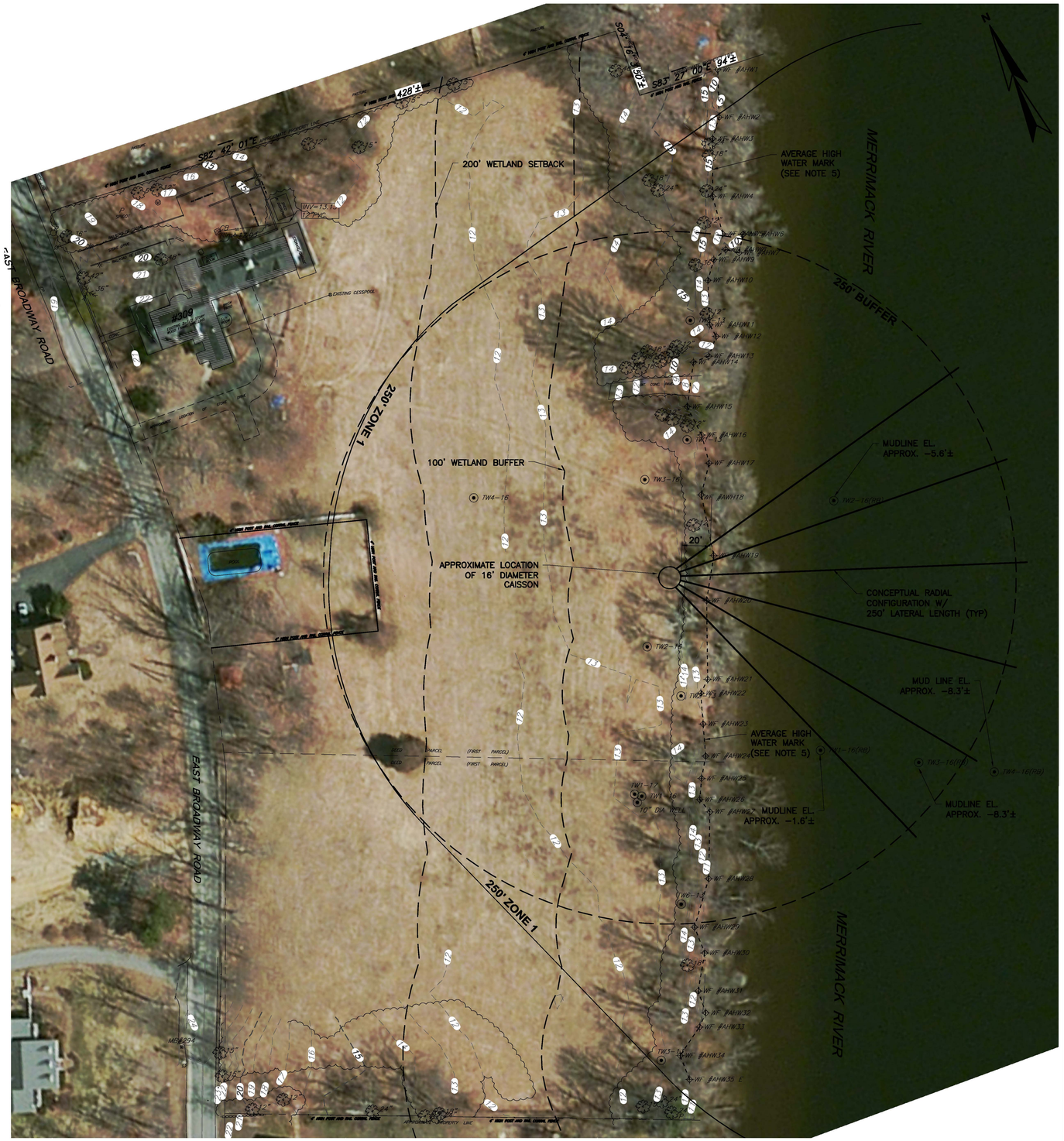


SECTION VIEW - CONCRETE CAISSON

SCALE: NTS

LEGEND

- PROPERTY/ROW LINE
- SETBACK LINE
- BUFFER LINE
- EASEMENT LINE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- EDGE OF CONCRETE
- 122 CONTOUR
- BUILDING
- PROPOSED BUILDING
- GRAVEL ACCESS ROAD
- CAISSON STRUCTURE
- WELL SCREEN LATERAL
- TREELINE
- FENCE
- OHE OVERHEAD ELECTRIC
- IRON PIPE/REBAR
- DRILLHOLE
- DMH DRAINAGE MANHOLE
- CB CATCH BASIN
- UTILITY POLE
- UTILITY POLE W/ GUY
- UTILITY POLE W/ LIGHT
- AVERAGE HIGH WATER
- SIGN
- MB MAILBOX
- MW MONITORING WELL



GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)
1 inch = 40 ft.

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1			
2			
3			
4			

DESIGNED BY: WTE
CAD COORD:
CAD:
CHECKED BY:
DATE: OCT 2017
APPROVED BY:
DATE:
PROJECT NO: 13582A

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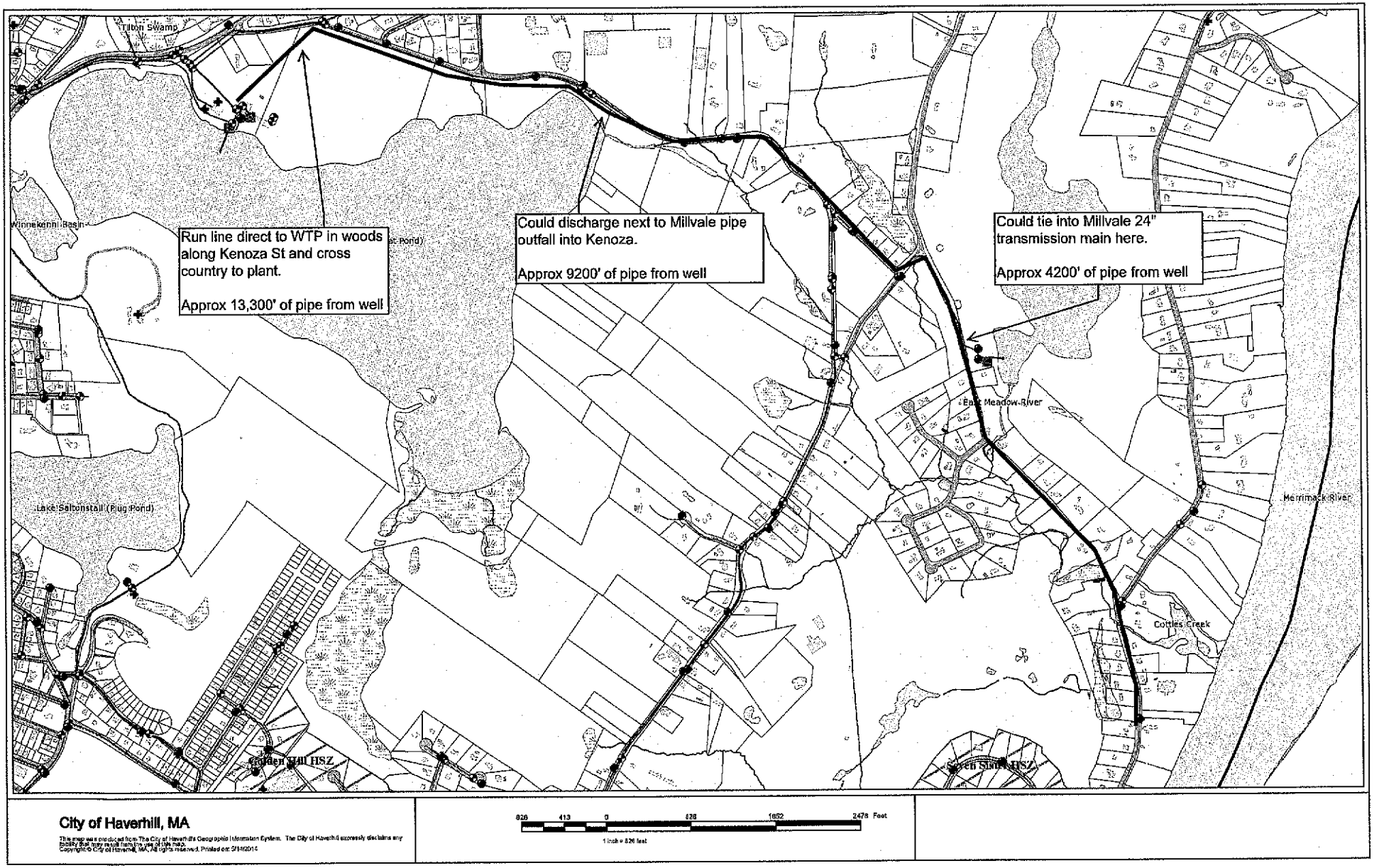
CITY OF HAVERHILL, MASSACHUSETTS
RADIAL COLLECTOR WELL CONCEPT
HILL PROPERTY – 309 EAST BROADWAY
HAVERHILL, MASSACHUSETTS

CONCEPTUAL SITE PLAN & RADIAL COLLECTOR WELL CAISSON SECTION VIEW

FIGURE
1

LAST SAVED BY: WILLIAM.EDGAR 10/11/2017 3:39 PM

G:\DWGS\MA\HAVERHILL\13582-MERRIMACKRIVERWELL\civ\13582A_ENF-FIGURE1.DWG | 13582A_SitePlan | 1:4.56 | ----- | 10/11/2017 3:39:57 PM | WILLIAM.EDGAR



City of Haverhill, MA

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826 413 0 826 1652 2478 Feet

1 inch = 826 feet