

NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL  
SERVICES (NHDES)

WATER DIVISION / WETLANDS BUREAU  
WETLANDS PERMIT APPLICATION

for the

Geotechnical Investigation for  
Subaqueous Water Main Replacement  
Durham & Newington, New Hampshire

City of Portsmouth  
Department of Public Works  
680 Peverly Hill Road  
Portsmouth, NH

October 2019







230 Commerce Way, Suite 302  
Portsmouth, NH 03801  
Phone: 603.430.3728 | Fax: 603.430.4083  
[www.wright-pierce.com](http://www.wright-pierce.com)

October 8, 2019  
W-P Project No. 14202B

Stefanie Giallongo  
Wetlands Bureau, Land Resources Management  
Water Division, NHDES  
29 Hazen Drive; PO Box 95  
Concord, NH 03302-0095

Subject: NHDES Wetlands Permit Application  
Geotechnical Investigation for Subaqueous Water Main Replacement  
City of Portsmouth, NH

Dear Ms. Giallongo,

On behalf of the City of Portsmouth, please find enclosed a Wetlands Permit Application and attachments for proposed geotechnical exploration within tidal wetlands necessary for the design of a replacement subaqueous water main crossing of the Little Bay.

This project involves work in both the Town of Durham and the Town of Newington. The attached permit application addresses the proposed impacts in both municipalities. Copies of the application have been filed with the Town Clerk of each Town.

It has been a pleasure to coordinate with you on this project to date. Please feel free to contact me if you have any questions or need any additional information during your review.

Sincerely,  
WRIGHT-PIERCE

A handwritten signature in blue ink, appearing to read "Britt Eckstrom".

Britt Eckstrom, PE  
Project Engineer  
[Britt.eckstrom@wright-pierce.com](mailto:Britt.eckstrom@wright-pierce.com)

*Enclosures*

cc: Brian Goetz, Zach Cronin – City of Portsmouth, NH DPW







**CITY OF PORTSMOUTH  
NEW HAMPSHIRE  
ACCOUNTS PAYABLE**

**CITIZENS BANK  
NEW HAMPSHIRE**

54-153  
114

CHECK DATE  
10/04/19

CHECK NO.  
185686

AMOUNT

\$\*\*\*\*\*200.00\*

**Pay** THE SUM OF \*\*\*\*\*200\* DOLLARS AND \*NO\* CENTS

TO THE  
ORDER  
OF

TREA STATE OF NH NHDES  
DRINKING WATER & GROUNDWATER BUREAU  
PO BOX 95  
CONCORD NH 03302-0095

*Judith Belonger*  
AUTHORIZED SIGNATURE

Void after 180 Days

⑈ 185686 ⑈

⑆011401533⑆ 3303010600⑈



**City of Portsmouth, NH  
Geotechnical Investigation for Subaqueous Water Main Replacement  
Durham & Newington, New Hampshire**

**NHDES Wetlands Permit Application**

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# WETLANDS PERMIT APPLICATION

Water Division/ Wetlands Bureau

Land Resources Management

Check the status of your application: [www.des.nh.gov/onestop](http://www.des.nh.gov/onestop)



RSA/Rule: [RSA 482-A](#)/ [Env-Wt 100-900](#)

Administrative Use Only	Administrative Use Only	Administrative Use Only	File No.:
			Check No.:
			Amount:
			Initials:

**1. REVIEW TIME:** Indicate your Review Time below. To determine review time, refer to [Guidance Document A](#) for instructions.

☒ Standard Review (Minimum, Minor or Major Impact)

☐ Expedited Review (Minimum Impact only)

**2. MITIGATION REQUIREMENT:**

If mitigation is required, a Mitigation-Pre Application meeting must occur prior to submitting this Wetlands Permit Application. To determine if mitigation is required, please refer to the [Determine if Mitigation is Required Frequently Asked Questions](#).

Mitigation Pre-Application Meeting Date: Month: \_\_\_ Day: \_\_\_ Year: \_\_\_\_

☒ N/A - Mitigation is not required

**3. PROJECT LOCATION:**

Separate wetland permit applications must be submitted for each municipality within which wetland impacts occur.

ADDRESS: **180 Piscataqua Road/ Fox Point**

TOWN/CITY: **Durham / Newington**

TAX MAP: **Durham 12 / New. 1**

BLOCK: **Durham 5 / New. -**

LOT: **Durham 2 / New. 1**

UNIT:

USGS TOPO MAP WATERBODY NAME: **Piscataqua River**

☐ NA

STREAM WATERSHED SIZE: **416.11 sq mi**

☐ NA

LOCATION COORDINATES (If known): **43.120691, -70.859128 / 43.125888, -70.867756**

☒ Latitude/Longitude ☐ UTM ☐ State Plane

**4. PROJECT DESCRIPTION:**

Provide a brief description of the project outlining the scope of work. Attach additional sheets as needed to provide a detailed explanation of your project. DO NOT reply "See Attached" in the space provided below.

**The City of Portsmouth proposes to complete a geotechnical exploration at the location of their existing water main crossing of the the Little Bay between Durham and Newington. The City of Portsmouth is currently exploring repair and replacement options to improve the reliability of this critical transmission main. The geotechnical exploration is necessary to evaluate the soil around the existing transmission main.**

**5. SHORELINE FRONTAGE:**

☐ N/A This does not have shoreline frontage.

SHORELINE FRONTAGE: **80 LF within easement**

Shoreline Frontage is calculated by determining the average of the distances of the actual natural navigable shoreline frontage and a straight line drawn between the property lines, both of which are measured at the normal high water line ([Env-Wt 101.89](#)).

**6. RELATED NHDES LAND RESOURCES MANAGEMENT PERMIT APPLICATIONS ASSOCIATED WITH THIS PROJECT:**

Please indicate if any of the following permit applications are required and, if required, the status of the application.

To determine if other Land Resources Management Permits are required, refer to the [Land Resources Management Webpage](#).

Permit Type	Permit Required	File Number	Permit Application Status
Alteration of Terrain Permit Per RSA 485-A:17	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	_____	<input type="checkbox"/> APPROVED <input type="checkbox"/> PENDING <input type="checkbox"/> DENIED
Individual Sewerage Disposal per RSA 485-A:2	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	_____	<input type="checkbox"/> APPROVED <input type="checkbox"/> PENDING <input type="checkbox"/> DENIED
Subdivision Approval Per RSA 485-A	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	_____	<input type="checkbox"/> APPROVED <input type="checkbox"/> PENDING <input type="checkbox"/> DENIED
Shoreland Permit Per RSA 483-B	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	_____	<input type="checkbox"/> APPROVED <input type="checkbox"/> PENDING <input type="checkbox"/> DENIED

**7. NATURAL HERITAGE BUREAU & DESIGNATED RIVERS:**

See the [Instructions & Required Attachments](#) document for instructions to complete a & b below.

a. Natural Heritage Bureau File ID: NHB **19** - **0978**


b. ☐ This project is within a [Designated River](#) corridor. The project is within ¼ mile of: \_\_\_\_\_; and  
date a copy of the application was sent to the [Local River Management Advisory Committee](#): Month: \_\_\_ Day: \_\_\_ Year: \_\_\_\_

☒ N/A – This project is not within a Designated River corridor.

[lrn@des.nh.gov](mailto:lrn@des.nh.gov) or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

[www.des.nh.gov](http://www.des.nh.gov)

<b>8. APPLICANT INFORMATION (Desired permit holder)</b>			
LAST NAME, FIRST NAME, M.I.: <b>Goetz, Brian</b>			
TRUST / COMPANY NAME: <b>City of Portsmouth</b>		MAILING ADDRESS: <b>680 Peverly Hill Rd</b>	
TOWN/CITY: <b>Portsmouth</b>		STATE: <b>NH</b>	ZIP CODE: <b>03801</b>
EMAIL or FAX: <b>bfgoetz@cityofportsmouth.com</b>		PHONE: <b>603-766-1420</b>	
ELECTRONIC COMMUNICATION: By initialing here: <b>BFG</b> , I hereby authorize NHDES to communicate all matters relative to this application electronically.			
<b>9. PROPERTY OWNER INFORMATION (If different than applicant)</b>			
LAST NAME, FIRST NAME, M.I.:			
TRUST / COMPANY NAME:		MAILING ADDRESS:	
TOWN/CITY:		STATE:	ZIP CODE:
EMAIL or FAX:		PHONE:	
ELECTRONIC COMMUNICATION: By initialing here _____, I hereby authorize NHDES to communicate all matters relative to this application electronically.			
<b>10. AUTHORIZED AGENT INFORMATION</b>			
LAST NAME, FIRST NAME, M.I.: <b>Eckstrom, Britt</b>		COMPANY NAME: <b>Wright-Pierce</b>	
MAILING ADDRESS: <b>230 Commerce Way Suite #302</b>			
TOWN/CITY: <b>Portsmouth</b>		STATE: <b>NH</b>	ZIP CODE: <b>03801</b>
EMAIL or FAX: <b>britt.eckstrom@wright-pierce.com</b>		PHONE: <b>603-570-7126</b>	
ELECTRONIC COMMUNICATION: By initialing here <b>BE</b> , I hereby authorize NHDES to communicate all matters relative to this application electronically.			
<b>11. PROPERTY OWNER SIGNATURE:</b>			
See the <a href="#">Instructions &amp; Required Attachments</a> document for clarification of the below statements			
By signing the application, I am certifying that:			
<ol style="list-style-type: none"> <li>1. I authorize the applicant and/or agent indicated on this form to act in my behalf in the processing of this application, and to furnish upon request, supplemental information in support of this permit application.</li> <li>2. I have reviewed and submitted information &amp; attachments outlined in the <a href="#">Instructions and Required Attachment</a> document.</li> <li>3. All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900.</li> <li>4. I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type.</li> <li>5. I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative.</li> <li>6. Any structure that I am proposing to repair/replace was either previously permitted by the Wetlands Bureau or would be considered grandfathered per Env-Wt 101.47.</li> <li>7. I have submitted a Request for Project Review (RPR) Form (<a href="http://www.nh.gov/nhdhr/review">www.nh.gov/nhdhr/review</a>) to the NH State Historic Preservation Officer (SHPO) at the NH Division of Historical Resources to identify the presence of historical/ archeological resources while coordinating with the lead federal agency for National Historic Preservation Act (NHPA) 106 compliance.</li> <li>8. I authorize NHDES and the municipal conservation commission to inspect the site of the proposed project.</li> <li>9. I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate.</li> <li>10. I understand that the willful submission of falsified or misrepresented information to the NHDES is a criminal act, which may result in legal action.</li> <li>11. I am aware that the work I am proposing may require additional state, local or federal permits which I am responsible for obtaining.</li> <li>12. The mailing addresses I have provided are up to date and appropriate for receipt of NHDES correspondence. NHDES will not forward returned</li> </ol>			
 Property Owner Signature		Brian Goetz Print name legibly	10/4/2019 Date

[irm@des.nh.gov](mailto:irm@des.nh.gov) or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

[www.des.nh.gov](http://www.des.nh.gov)

## MUNICIPAL SIGNATURES

## 12. CONSERVATION COMMISSION SIGNATURE

The signature below certifies that the municipal conservation commission has reviewed this application, and:

1. Waives its right to intervene per RSA 482-A:11;
2. Believes that the application and submitted plans accurately represent the proposed project; and
3. Has no objection to permitting the proposed work.


	Print name legibly	Date
---	--------------------	------

## DIRECTIONS FOR CONSERVATION COMMISSION

1. Expedited review ONLY requires that the conservation commission's signature is obtained in the space above.
2. Expedited review requires the Conservation Commission signature be obtained prior to the submittal of the original application to the Town/City Clerk for signature.
3. The Conservation Commission may refuse to sign. If the Conservation Commission does not sign this statement for any reason, the application is not eligible for expedited review and the application will be reviewed in the standard review time frame.

## 13. TOWN / CITY CLERK SIGNATURE

As required by Chapter 482-A:3 (amended 2014), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

	Rachel M. Deane Print name legibly	Durham Town/City	10/8/2014 Date
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## DIRECTIONS FOR TOWN/CITY CLERK:

Per RSA 482-A:3, I

1. For applications where "Expedited Review" is checked on page 1, if the Conservation Commission signature is not present, NHDES will accept the permit application, but it will NOT receive the expedited review time.
2. IMMEDIATELY sign the original application form and four copies in the signature space provided above;
3. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
4. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board; and
5. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

## DIRECTIONS FOR APPLICANT:

1. Submit the single, original permit application form bearing the signature of the Town/ City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery.

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Print name legibly

Date

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Town/City

Date

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**14. IMPACT AREA:**

For each jurisdictional area that will be/has been impacted, provide square feet and, if applicable, linear feet of impact.

Permanent: impacts that will remain after the project is complete.

Temporary: impacts not intended to remain (and will be restored to pre-construction conditions) after the project is completed.

Intermittent Streams: linear footage distance of disturbance is measured along the thread of the channel.

Perennial Streams/ Rivers: the total linear footage distance is calculated by summing the lengths of disturbance to the channel and each bank.

JURISDICTIONAL AREA	PERMANENT Sq. Ft. / Lin. Ft.	TEMPORARY Sq. Ft. / Lin. Ft.
Forested wetland	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Scrub-shrub wetland	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Emergent wetland	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Wet meadow	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Intermittent stream channel	/ <input type="checkbox"/> ATF	/ <input type="checkbox"/> ATF
Perennial Stream / River channel	/ <input type="checkbox"/> ATF	/ <input type="checkbox"/> ATF
Lake / Pond	/ <input type="checkbox"/> ATF	/ <input type="checkbox"/> ATF
Bank - Intermittent stream	/ <input type="checkbox"/> ATF	/ <input type="checkbox"/> ATF
Bank - Perennial stream / River	/ <input type="checkbox"/> ATF	/ <input type="checkbox"/> ATF
Bank - Lake / Pond	/ <input type="checkbox"/> ATF	/ <input type="checkbox"/> ATF
Tidal water	/ <input type="checkbox"/> ATF	200 / <input type="checkbox"/> ATF
Salt marsh	<input type="checkbox"/> ATF	190 <input type="checkbox"/> ATF
Sand dune	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Prime wetland	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Prime wetland buffer	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Undeveloped Tidal Buffer Zone (TBZ)	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Previously-developed upland in TBZ	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Docking - Lake / Pond	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Docking - River	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Docking - Tidal Water	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Vernal Pool	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
<b>TOTAL</b>	/	390 /

**15. APPLICATION FEE:** See the [Instructions & Required Attachments](#) document for further instruction

☒ Minimum Impact Fee: Flat fee of \$ 200

☐ Minor or Major Impact Fee: Calculate using the below table below

Permanent and Temporary (non-docking) \_\_\_\_\_ sq. ft. X \$0.20 = \$ \_\_\_\_\_

Temporary (seasonal) docking structure: \_\_\_\_\_ sq. ft. X \$1.00 = \$ \_\_\_\_\_

Permanent docking structure: \_\_\_\_\_ sq. ft. X \$2.00 = \$ \_\_\_\_\_

**Projects proposing shoreline structures (including docks) add \$200 = \$ \_\_\_\_\_**

Total = \$ \_\_\_\_\_

The Application Fee is the above calculated Total or \$200, whichever is greater = \$ \_\_\_\_\_

[irm@des.nh.gov](mailto:irm@des.nh.gov) or (603) 271-2147

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**ATTACHMENT 1**  
**Need Minimization & Avoidance**





## WETLANDS PERMIT APPLICATION – ATTACHMENT A MINOR AND MAJOR - 20 QUESTIONS

Land Resources Management

Wetlands Bureau

Check the Status of your application: [www.des.nh.gov/onestop](http://www.des.nh.gov/onestop)



**RSA/ Rule:** RSA 482-A, Env-Wt 100-900

**Env-Wt 302.04 Requirements for Application Evaluation** - For any major or minor project, the applicant shall demonstrate by plan and example that the following factors have been considered in the project's design in assessing the impact of the proposed project to areas and environments under the department's jurisdiction. Respond with statements demonstrating:

1. The need for the proposed impact.

The proposed temporary impacts are needed to assess the subsurface conditions, including soil type and depth to bedrock within the project area. Assessing the surface conditions is critical to evaluating alternatives for a new main at the crossing. It is anticipated a new transmission main between the existing two parallel cast iron mains will be installed. The two existing transmission mains were installed in the 1950s and showed significant corrosion during a 2016 dive inspection. These aging transmission mains are critical infrastructure for the City's regional water system which includes Portsmouth, Newington, Greenland, New Castle and portions of Madbury, Dover, Durham and Rye, that rely on drinking water from the Madbury Water Treatment Plant.

2. That the alternative proposed by the applicant is the one with the least impact to wetlands or surface waters on site.

Borings B-1 through B-4 and B-13 through B-16, will be completed with a tracked drill rig. In order to minimize impacts, mats will be placed on all areas that the drill rig will track over. Upon completion of the borings, the mats will be removed. Boring B-5 through B-12, will be conducted from a barge in order to minimize impact to the bottom of the channel. All proposed wetlands impacts will be temporary.

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3. The type and classification of the wetlands involved.																		
<p><b>All of the proposed impacts are in tidal wetlands.</b></p> <p>On the Durham side, the area below the HOTL was classified as Estuarine, Intertidal, Emergent, Persistent, Irregularly Flooded (E2EM1P). This area was also identified as saltmarsh. The area below this was classified as Estuarine, Intertidal, Unconsolidated Shore, Mud, Regularly Flooded (E2US3N). The classification of the subtidal area below the mud flat is Estuarine, Subtidal, Unconsolidated Bottom, Subtidal (E1UBL).</p> <p>On the Newington side, the area below the HOTL was classified as Estuarine, Intertidal, Unconsolidated Shore, Mud, Regularly Flooded (E2US3N).</p>																		
4. The relationship of the proposed wetlands to be impacted relative to nearby wetlands and surface waters.																		
<p><b>The area proposed to be impacted for the geotechnical exploration is a small portion of the wetlands and surface waters that make up Little Bay.</b></p>																		
5. The rarity of the wetland, surface water, sand dunes, or tidal buffer zone area.																		
<p><b>The wetlands that will be temporarily impacted by the borings are typical of the wetlands found throughout Little Bay.</b></p>																		
6. The surface area of the wetlands that will be impacted.																		
<p><b>The following summarizes the proposed boring locations and temporary impacts:</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"><b>B-1, B-2, B-3</b></td> <td style="width: 20%;"><b>Durham</b></td> <td style="width: 60%;"><b>None – Borings will be completed above the HOTL</b></td> </tr> <tr> <td><b>B-4</b></td> <td><b>Durham</b></td> <td><b>190 sq. ft. salt marsh for mat installation and boring</b></td> </tr> <tr> <td><b>B-5, B-6, B-7, B-8</b></td> <td><b>Durham</b></td> <td><b>20 sq. ft. to tidal wetland for barge spuds and boring</b></td> </tr> <tr> <td><b>B-9, B-10, B-11, B-12</b></td> <td><b>Newington</b></td> <td><b>20 sq. ft. to tidal wetland for barge spuds and boring</b></td> </tr> <tr> <td><b>B-13</b></td> <td><b>Newington</b></td> <td><b>160 sq. ft. to tidal wetland for mat installation and boring</b></td> </tr> <tr> <td><b>B-14, B-15, B-16</b></td> <td><b>Newington</b></td> <td><b>None – Borings will be completed above the HOTL</b></td> </tr> </table>	<b>B-1, B-2, B-3</b>	<b>Durham</b>	<b>None – Borings will be completed above the HOTL</b>	<b>B-4</b>	<b>Durham</b>	<b>190 sq. ft. salt marsh for mat installation and boring</b>	<b>B-5, B-6, B-7, B-8</b>	<b>Durham</b>	<b>20 sq. ft. to tidal wetland for barge spuds and boring</b>	<b>B-9, B-10, B-11, B-12</b>	<b>Newington</b>	<b>20 sq. ft. to tidal wetland for barge spuds and boring</b>	<b>B-13</b>	<b>Newington</b>	<b>160 sq. ft. to tidal wetland for mat installation and boring</b>	<b>B-14, B-15, B-16</b>	<b>Newington</b>	<b>None – Borings will be completed above the HOTL</b>
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7. The impact on plants, fish and wildlife including, but not limited to:
- a. Rare, special concern species;
  - b. State and federally listed threatened and endangered species;
  - c. Species at the extremities of their ranges;
  - d. Migratory fish and wildlife;
  - e. Exemplary natural communities identified by the DRED-NHB; and
  - f. Vernal pools.

**The following state and federally listed threaten and endangered species were identified in the New Hampshire Natural Heritage Bureau (NHB) Datacheck review: Atlantic Sturgeon (state and federally threatened), the Common Tern (state threatened), and Shortnose Sturgeon (state and federally endangered).**

**The following exemplary natural communities were identified in the NHB Datacheck review: sparsley vegetated intertidal system and subtidal system.**

**The temporary impacts to wetlands for the borings are anticipated to have minimal impact to the species and natural communities identified in the NHB report. The borings on land are expected to take two days and the boring from barge are expected to take three days. The mats for the tracked drill rig will be placed on areas on areas maintained as lawn and used to access the water on the Durham side. On the Newington side, the mats for the drill rig will be placed on areas that include forested area and rocky beach. None of the areas impacted by tracked drill rig are preferred habitat for tern nesting.**

**Given the short duration and minimal area of temporary impacts of the borings by barge, impacts to the Atlantic and Shortnose Sturgeon are not anticipated.**

**The methods of accessing the proposed boring locations have been selected to minimize impacts to the intertidal and subtidal areas.**

8. The impact of the proposed project on public commerce, navigation and recreation.

**The proposed soil borings are not anticipated to impact public commerce, navigation, or recreation.**

9. The extent to which a project interferes with the aesthetic interests of the general public. For example, where an applicant proposes the construction of a retaining wall on the bank of a lake, the applicant shall be required to indicate the type of material to be used and the effect of the construction of the wall on the view of other users of the lake.

**The proposed soil borings will not interfere with the aesthetic interest of the general public as the impacts are temporary. The proposed drilling rigs are expected to be on site for only five days.**

10. The extent to which a project interferes with or obstructs public rights of passage or access. For example, where the applicant proposes to construct a dock in a narrow channel, the applicant shall be required to document the extent to which the dock would block or interfere with the passage through this area.

**Any impact of the public rights of passage or access will be minimal and temporary.**

11. The impact upon abutting owners pursuant to RSA 482-A:11, II. For example, if an applicant is proposing to rip-rap a stream, the applicant shall be required to document the effect of such work on upstream and downstream abutting properties.

**The impacts of the soil borings will be temporary and will not affect abutters.**

12. The benefit of a project to the health, safety, and well being of the general public.

**The soil borings will be beneficial to the general public as they will allow valuable information to be gathered on the existing conditions of the proposed project location. The overall intent of the project is to allow for safe design of a new transmission main to maintain a reliable source of water to the residents of the City's regional water system which includes Portsmouth, Newington, Greenland, New Castle and portions of Madbury, Dover, Durham and Rye, that rely on drinking water from the Madbury Treatment Plant.**

13. The impact of a proposed project on quantity or quality of surface and ground water. For example, where an applicant proposes to fill wetlands the applicant shall be required to document the impact of the proposed fill on the amount of drainage entering the site versus the amount of drainage exiting the site and the difference in the quality of water entering and exiting the site.

**Any impact on surface or groundwater will be minimal and temporary.**

14. The potential of a proposed project to cause or increase flooding, erosion, or sedimentation.

**There is no potential of increased flooding or erosion. Drill spoils will be placed back in the bore hole on the land side borings.**

15. The extent to which a project that is located in surface waters reflects or redirects current or wave energy which might cause damage or hazards.

**There will be no impact on the current or wave energy due to the proposed soil borings.**



16. The cumulative impact that would result if all parties owning or abutting a portion of the affected wetland or wetland complex were also permitted alterations to the wetland proportional to the extent of their property rights. For example, an applicant who owns only a portion of a wetland shall document the applicant's percentage of ownership of that wetland and the percentage of that ownership that would be impacted.

**Since the impacts from the soil borings on the wetlands will be temporary, there would not be any cumulative impact from additional parties permitted to complete similar work.**

17. The impact of the proposed project on the values and functions of the total wetland or wetland complex.

**Since the impacts from the soil borings will be temporary, permanent impacts to the values and functions of the wetlands are not anticipated.**

18. The impact upon the value of the sites included in the latest published edition of the National Register of Natural Landmarks, or sites eligible for such publication.

**The are no sites within the project area listed on the National Register of Natural Landmarks or known to be eligible for listing.**

19. The impact upon the value of areas named in acts of congress or presidential proclamations as national rivers, national wilderness areas, national lakeshores, and such areas as may be established under federal, state, or municipal laws for similar and related purposes such as estuarine and marine sanctuaries.

**The are no areas within the project area known to be protected by congress or presidential proclamation or other protections.**

20. The degree to which a project redirects water from one watershed to another.

**The proposed borings will not redirect water from one watershed to another.**

Additional comments

[lm@des.nh.gov](mailto:lm@des.nh.gov) or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

[www.des.nh.gov](http://www.des.nh.gov)

**ATTACHMENT 2**  
**Additional Narrative & Information**



## 2. PROJECT DESCRIPTION (CONTINUED)

The City of Portsmouth owns and maintains a cross-country drinking water transmission main that brings treated drinking water from the Madbury Water Treatment Plant to Portsmouth. The 24-inch concrete main carries approximately 60% of the water serving the City's regional water system that includes Portsmouth, Newington, Greenland, New Castle and portions of Madbury, Dover, Durham and Rye. The main crosses the Little Bay, approximately 4,000 ft to the southwest of the Scammell Bridge (US Route 4). At the crossing, the main transitions to two 20-inch cast iron pipes from the Durham shore to Fox Point shore in Newington. The two parallel transmission mains, installed in the 1950s, are approximately 3,200 feet in length across the bay. A dive inspection completed in 2016 observed that portions of the two cast iron pipes have become exposed to salt water and have experienced significant corrosion, with pits greater than 50% of the pipe wall thickness in some instances.

The City of Portsmouth is currently exploring repair and replacement options to improve the reliability of these critical transmission mains. In order to assess the soils near the existing pipe line, geotechnical borings are needed. A total of 16 borings are proposed. Borings 1-4 and 13-16 will be conducted using a tracked drill rig. The drill rig will track over temporary mats to reach the proposed boring locations. The mats will be used to prevent disturbance in sensitive areas of the property on the Durham side as well as a small section of salt marsh. Mats will also be used to prevent disturbance to the rocky beach on the Newington side. The boring depth will be 15 ft.

Borings 5-12 will be conducted using a barge drill rig. A temporary impact of 5 sq. ft. to tidal wetlands has been estimated for each boring from the barge to account for the temporary impacts associated with completing the boring and use of spuds to anchor the barge while the boring is completed. The boring depth will be 10 to 15 ft.

The following table summarizes the proposed boring locations and temporary impacts.

Boring	Location	Proposed Temporary Wetlands Impact
B-1, B-2, B-3	Durham	None – Borings will be completed above the HOTL
B-4	Durham	190 sq. ft. salt marsh for mat installation and boring
B-5, B-6, B-7, B-8	Durham	20 sq. ft. to tidal wetland for barge spuds and boring
B-9, B-10, B-11, B-12	Newington	20 sq. ft. to tidal wetland for barge spuds and boring
B-13	Newington	160 sq. ft. to tidal wetland for mat installation and boring
B-14, B-15, B-16	Newington	None – Borings will be completed above the HOTL

Note: The temporary impacts of borings proposed above the HOTL have not been quantified since they do not require a permit pursuant to Env-Wt 303.05(n) (1-12).



**ATTACHMENT 3**  
**Wetlands and Natural Resources Delineation**







Via email to [britt.eckstrom@wright-pierce.com](mailto:britt.eckstrom@wright-pierce.com)

September 19, 2019

Ms. Britt Eckstrom, P.E.  
Wright-Pierce  
230 Commerce Way, Suite 302  
Portsmouth, NH 03801

RE: Subaqueous Water Transmission Main  
Durham and Newington, NH  
WP #14202A

Dear Ms. Eckstrom,

The following remarks summarize our preliminary observations made during the delineation of jurisdictional wetlands and other resources at the above-referenced location. A site inspection was conducted on May 29, 2019 to identify and delineate wetlands and other jurisdictional areas within the area-of-interest (AOI) according to the New Hampshire Department of Environmental Services (NHDES) – Code of Administrative Rules Section Env-Wt 100 – 900. The AOI and associated resources are depicted on the undated existing conditions drawing prepared by your office, which is appended to the back of this report.

Jurisdictional wetlands and other resources were identified and jurisdictional boundaries within the AOI were delineated and marked in the field with solid color pink survey flags. Each flag bears a letter and number to assist in subsequent field location by instrument survey. The flag sequences used are as follows: A1-A8, B1-B15, C1-C30 and D1-D8. A brief description of each wetland/resource area, as identified by the flag series used in the field, is provided below.

## **Durham, NH**

### **Flag Series A and B**

Flag series 'A' identifies the boundary between saltmarsh and mud flat. Flag series 'B' identifies the highest observable tide line (HOTL<sup>1</sup>). The area between the 'A' and 'B' lines represents saltmarsh. Topography along the HOTL is generally distinct. Commonly observed salt marsh vegetation includes glasswort (*Salicornia* sp.), Black grass (*Juncus gerardii*), and salt marsh hay

(*Spartina* sp.). The classification<sup>2</sup> of the area between the 'A' and 'B' lines is Estuarine, Intertidal, Emergent, Persistent, Irregularly Flooded (E2EM1P). The classification of the mud flat area below<sup>3</sup> the 'A' line is Estuarine, Intertidal, Unconsolidated Shore, Mud, Regularly Flooded (E2US3N). The classification of the subtidal<sup>4</sup> area below the mud flat is Estuarine, Subtidal, Unconsolidated Bottom, Subtidal. (E1UBL).

Private property landward of the HOTL was not investigated or delineated but preliminary observations of vegetation communities made while accessing the AOI suggest that freshwater wetlands may also exist nearby.

## **Newington, NH**

### **Flag Series C and D**

Flag series 'C' identifies the highest observable tide line (HOTL). The area below and immediately adjacent to the HOTL identifies a combination of sandy and/or rocky beach, depending upon the exact location. The area identified by flags C1± - C16± is experiencing minor undercutting. The area identified by flags C16± - C27± is experiencing severe bank erosion with subsequent sedimentation of the rocky beach at the toe-of-slope below. It is unclear if both of these observations are a function of wave action or sea level rise or both. Large numbers of horseshoe crabs (*Limulus polyphemus*) were observed mating in the waters adjacent to flags C20± - C26± during site investigations.

With the exception of the area enclosed by the 'D' flags, the dominant classification of the area below the 'C' line is Estuarine, Intertidal, Unconsolidated Shore, Mud, Regularly Flooded (E2US3N). There are however significant areas that classify as Estuarine, Intertidal, Unconsolidated Shore, Cobble-gravel, Regularly Flooded (E2US1N) or Estuarine, Intertidal, Unconsolidated Shore, Sand, Regularly Flooded (E2US1N) within the dominant classification. These areas generally exist along flags C17± - C30±.

Flag series 'D' identifies an isolated patch of saltmarsh. This area is classified as E2EM1P.

### Invasive Species

Invasive species observed within uplands adjacent to the HOTL in Durham generally included garlic mustard (*Alliaria petiolata*), Japanese barberry (*Berberis thunbergii*), common barberry (*Berberis vulgaris*), olive (*Elaeagnus umbellata*), glossy buckthorn (*Frangula alnus*) and honeysuckle (*Lonicera* sp.).

<sup>1</sup> Wherever referenced in this report, HOTL's were identified according to Env-Wt 101.49.

<sup>2</sup> Classifications are according to the National Wetland Inventory and Cowardin system.

<sup>3</sup> Lower in elevation.

<sup>4</sup> Continuously submerged by tidal salt water.



Invasive species observed within uplands adjacent to the HOTL in Newington generally included common barberry, common buckthorn (*Rhamnus cathartica*), honeysuckle, and Asian bittersweet (*Celastrus orbiculatus*), a liana.

### Special Aquatic Sites and Special Wetlands

Special aquatic sites include saltmarsh wetlands, mud flats vegetated shallows with submerged aquatic vegetation such as eelgrass (*Zostera marina*), sanctuaries and refuges, coral reefs, and riffle and pool complexes. Saltmarsh wetlands and mud flats were noted at the site as described above. We did not note any eelgrass beds during our investigations. Estuarine wetlands are considered Special Wetlands under Army Corps permitting.

We have not evaluated the site for Highest Ranked Habitat, known shellfish beds, Essential Fish Habitat or other similar fisheries or wildlife attributes using available resources but we are available to do so upon request as part of any future permit application preparation.

Vernal pools are temporary bodies of fresh water that provide essential breeding habitat for certain amphibians and invertebrates as well as important supporting habitat for numerous other species, especially reptiles such as turtles. As is to be expected given the limits of the AOI and the tidal environs which were the subject of the investigations, we did not observe any primary or secondary indicators or areas that we thought were potential vernal pools according to the NH Code of Administrative Rules – Env-Wt 101.106, Env-Wt 101.75 and Env-Wt 101.86.

### State Jurisdiction

Wetlands and surface waters at this location are subject to the state Shoreland Water Quality Protection Act (RSA 483-B). The HOTL identified by the 'B' and 'C' series flags also represents the reference line for administering RSA 483-B, which includes jurisdiction of all upland and freshwater wetlands within 250 feet (landward) of the HOTL. All banks, beaches, mud flats and saltmarsh wetlands – the area between the 'A' and 'B' lines in Durham and the area enclosed by the 'D' series flags in Newington – are jurisdictional under NH RSA 482:A and the NH Code of Administrative Rules – Chapter Env-Wt 100-900. Uplands adjacent to the HOTL are subject to the 100-foot Tidal Buffer Zone (TBZ). The TBZ is also measured from the HOTL.

Bank is defined by Env-Wt 101.07 as the transitional slope immediately adjacent to the edge of a surface water body, the upper limit of which is *usually* defined by a break in slope, or for a wetland, where a line indicates a change from wetland to upland. Experience has demonstrated that the definition of bank can be subject to interpretation where practical application in the field is involved. The upper limit of the bank may be the upper limit of the erosion along flags C16± - C27± in Newington.

### Prime Wetlands

The NHDES applies applicable rules and law to all municipally designated prime wetlands (and in certain municipalities all land within 100-feet of municipally designated prime wetlands).

Prime wetlands are those wetlands with higher functions and values and receive additional protection under the law. The town of Durham does not have municipally designated prime wetlands recognized by NHDES. The town of Newington has municipally designated prime wetlands recognized by NHDES. Wetlands within the AOI in Newington are not considered prime. Please be advised however that applications proposing impacts to tidally influenced wetlands and other resources receive considerable scrutiny at NHDES.

### Local Zoning

Article XIII of the Durham Zoning Ordinance creates the Wetland Conservation Overlay District (WOCD) which takes jurisdiction over all wetlands except isolated non-tidal wetlands less than 3,000 square feet (SF) and which are not vernal pools or man-made wetlands such as ditches and swales, sedimentation/detention basins, agricultural/irrigation ponds or fire ponds/cisterns so long as they are currently functioning, maintained and have not been abandoned. Wetland buffers, which are also part of the WOCD, are required but vary by resource type and zone and range from 75-150 feet. Utility construction is allowed in the WOCD as a Conditional Use after a Conditional Use Permit is granted by the Durham Planning Board.

Article IX – Wetland Overlay District (WOD) – of the Newington Zoning Ordinance prohibits any use that alters the surface configuration of the land by the addition of fill or by dredging. The zoning creates a 75-foot limited-cut buffer<sup>5</sup> to tidal wetlands and a 100-foot structure setback to wetlands greater than 3,000 square feet which are contiguous with surface waters. Buffers for other wetlands are required depending upon wetland type, size and contiguity with surface waters.

Permitted uses in wetlands include agriculture, forestry, wildlife enhancement or management, passive recreation, conservation areas and nature trails, driveways – by Conditional Use Permit (CUP) – and footbridges or similar with provisions. CUP's may be granted by the Newington Planning Board (NPB) for the construction of roads and other access ways, utility pipelines, and transmission lines provided: the proposed use is essential to the productive use of land outside the WOD; design and construction methods will minimize detrimental impact and restoration is proposed; no alternative route with lesser impact is feasible; and economic advantage is not the sole basis for the proposed construction. Applicants shall agree to submit a performance security to the Board of Selectmen prior to approval. The NPB may require applicants to prepare and submit an environmental impact assessment. The costs for the assessment and any other investigative studies deemed necessary by the NPB shall be borne by the applicant.

<sup>5</sup> The zoning does not appear to specifically include vegetative buffers or structure setbacks in the WOD. It is therefore unclear if a CUP is needed to work in the buffer to wetlands. It is also unclear how the zoning is being applied in practice by land use boards in Newington.



The above represents a brief summary of the applicable local zoning and state jurisdiction. We recommend that you consult this office, the Durham or Newington Planning Departments or the NHDES for further guidance before proceeding with any design, permitting or construction at this location.

#### Certification Note

The following certification note should be inserted into any drawings that reflect the delineated wetland-upland boundary:

Jurisdictional resources including Highest Observable Tide Line were delineated on May 29, 2019 by Marc Jacobs, Certified Wetland Scientist number 090, according to the standards of the US Army Corps of Engineers - Wetlands Delineation Manual; the 2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region; and the Code of Administrative Rules, NH Department of Environmental Services - Wetlands Bureau – Env Wt 100-900. Soils were evaluated utilizing the Field Indicators for Identifying Hydric Soils in New England, Version 4, April 2019 and the Field Indicators of Hydric Soils in the United States, Version 8, 2016. The indicator status of vegetation as hydrophytic was determined according to the U.S. Army Corps of Engineers - Northcentral and Northeast 2016 Regional Wetland Plant List. Copies of site plans which have been reviewed by the wetland scientist are individually stamped, signed and dated. This note has been customized for this project.

Please contact the undersigned with any questions regarding the above-referenced information.

Cordially,

Marc Jacobs, GWS, PWS, CSS, CPESC

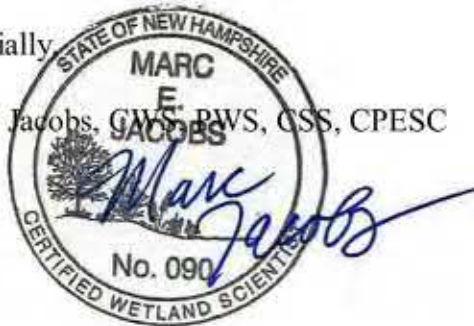




Image 1 – Looking northerly at the saltmarsh in Durham. (©Jacobs 2019)



Image 2 – Looking southerly along the 'C' line from flag C1± in Newington. (©Jacobs 2019)





Image 3 – Looking northerly from flag C20± at bank erosion along the 'C' line in Newington. (©Jacobs 2019)



Image 4 – Looking easterly along the 'C' line from flag C20± in Newington. (©Jacobs 2019)





Image 5 – Looking northerly at the saltmarsh identified by the 'D' flags series in Newington. (©Jacobs 2019)





**ATTACHMENT 4**  
**NH Natural Heritage Bureau**  
**Correspondence/IPAC**



# CONFIDENTIAL – NH Dept. of Environmental Services review

## Memo



NH NATURAL HERITAGE BUREAU  
NHB DATACHECK RESULTS LETTER

**To:** Victoria Landl, Wright-Pierce  
11 Bowdoin Mill Island  
Suite 140  
Topsham, ME 04086

**From:** Amy Lamb, NH Natural Heritage Bureau

**Date:** 4/8/2019 (valid for one year from this date)

**Re:** Review by NH Natural Heritage Bureau

NHB File ID: NHB19-0978

Town: Newington, Durham

Location: Utility Easement/Pipeline right of way.

Description: Repair/Replacement of two existing sub-aqueous water mains crossing Little Bay in the Piscataqua River. The current approach is to install a temporary, weighted, polyethylene pipe across the bottom of the riverbed and within the foot print of the existing infrastructure to allow the existing water mains to be taken out of service for inspection.

cc: Kim Tuttle

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

**Comments:** Please send NHB additional information about how the work will be completed, as well as how impacts to the sparsely vegetated intertidal system and subtidal system will be avoided. Please contact the NH Fish & Game Department to address wildlife concerns.

Natural Community	State <sup>1</sup>	Federal	Notes
Sparsely vegetated intertidal system	--	--	Threats to these communities are primarily alterations to the hydrology of the wetland (such as alterations that might affect the sheet flow of tidal waters across the intertidal flat) and increased input of nutrients and pollutants in storm runoff.
Subtidal system	--	--	Threats to these communities are primarily alterations to the hydrology of the wetland (such as alterations that might affect the sheet flow of tidal waters across the intertidal flat) and increased input of nutrients and pollutants in storm runoff.

Vertebrate species	State <sup>1</sup>	Federal	Notes
Atlantic Sturgeon ( <i>Acipenser oxyrinchus</i> )	T	T	Contact the NH Fish & Game Dept and the US Fish & Wildlife Service (see below).
Common Tern ( <i>Sterna hirundo</i> )	T	--	Contact the NH Fish & Game Dept (see below).
Shortnose Sturgeon ( <i>Acipenser brevirostrum</i> )	E	E	Contact the NH Fish & Game Dept and the US Fish & Wildlife Service (see below).

<sup>1</sup>Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (\*) indicates that the most recent report for that occurrence was more than 20 years ago.

Contact for all animal reviews: Kim Tuttle, NH F&G, (603) 271-6544.

## CONFIDENTIAL – NH Dept. of Environmental Services review

### Memo



NH NATURAL HERITAGE BUREAU  
NHB DATACHECK RESULTS LETTER

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.









## New Hampshire Natural Heritage Bureau - System Record

**Sparsely vegetated intertidal system****Legal Status**

Federal: Not listed  
State: Not listed

**Conservation Status**

Global: Not ranked (need more information)  
State: Rare or uncommon

**Description at this Location**

Conservation Rank: Not ranked  
Comments on Rank:

Detailed Description: Extensive *intertidal flats* that are exposed daily at low tide, bordered in places by *intertidal rocky shore* and *coastal shoreline strand/swale* communities.

General Area: 2010: Borders **salt marsh system** landward and **subtidal system** seaward.

General Comments:

Management

Comments:

**Location**

Survey Site Name: Great Bay

Managed By: Moody Point Open Space

County: Rockingham

Town(s): Newington

Size: 3589.5 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Occurs throughout Great Bay from the mouths of its tributaries, through Little Bay, to the confluence with the Piscataqua River.

**Dates documented**

First reported: 1997-06-23

Last reported: 2010-10-13

## New Hampshire Natural Heritage Bureau - System Record

**Subtidal system****Legal Status**

Federal: Not listed  
State: Not listed

**Conservation Status**

Global: Not ranked (need more information)  
State: Rare or uncommon

**Description at this Location**

Conservation Rank: Not ranked  
Comments on Rank:

Detailed Description: Channels and bay bottoms that vary in width from a few feet to almost a mile across, covered by water even at low tide. Patches of subtidal *eelgrass bed* occur at the edge of the adjacent **sparsely vegetated intertidal system**.

General Area: 2010: Borders a **sparsely vegetated intertidal system**.

General Comments:  
Management  
Comments:

**Location**

Survey Site Name: Great Bay  
Managed By: Portsmouth Country Club

County: Rockingham  
Town(s): Newington  
Size: 3207.7 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Occurs throughout the Great Bay estuary, from the upper total reaches of tributary streams to the confluence of the bay with the Piscataqua River.

**Dates documented**

First reported: 1997-06-17 Last reported: 2010-10-13

## New Hampshire Natural Heritage Bureau - Animal Record

**Atlantic Sturgeon (*Acipenser oxyrinchus*)****Legal Status**

Federal: Listed Threatened  
State: Listed Threatened

**Conservation Status**

Global: Rare or uncommon  
State: Critically imperiled due to rarity or vulnerability

**Description at this Location**

Conservation Rank: Not ranked  
Comments on Rank:

Detailed Description: 2016: 1 individual, sex unknown, detected in the lower Piscataquog River.<br />2015: 1 individual, sex unknown, detected in Portsmouth Harbor.<br />2012: 1 individual, sex unknown, detected in Little Bay.

General Area: 2016: Tidal waters in Portsmouth Harbor, Little Bay, and the Piscataquog River.

General Comments:  
Management  
Comments:

**Location**

Survey Site Name: Piscataquog River  
Managed By:

County: Rockingham  
Town(s): Newington  
Size: 7749.3 acres

Elevation:

Precision: Within 1.5 miles of the area indicated on the map (location information is vague or uncertain).

Directions: 2016: Tidal waters of Portsmouth Harbor, Little Bay, and the Piscataquog River.

**Dates documented**

First reported: 2012-06-02                      Last reported: 2016-05-27

The U.S. Fish & Wildlife Service has jurisdiction over Federally listed species. Please contact them at 70 Commercial Street, Suite 300, Concord NH 03301 or at (603) 223-2541.

## New Hampshire Natural Heritage Bureau - Animal Record

### Common Tern (*Sterna hirundo*)

#### Legal Status

Federal: Not listed  
State: Listed Threatened

#### Conservation Status

Global: Demonstrably widespread, abundant, and secure  
State: Not ranked (need more information)

#### Description at this Location

Conservation Rank: Not ranked  
Comments on Rank:

Detailed Description: 2011: Area 4555: 31 adults, 11 fledglings. 2003: Area 4555: 12 pairs, 12 fledglings. 2002: Area 4555: 12 pairs, 12 fledglings. 2001: Area 4555: 12 pairs, 8 fledglings. 2000: Area 4555: 15 pairs, 12 fledglings. 1999: Area 4555: 2 pairs, 2 fledglings. 1998: Area 4555: 0 pairs. 1997: Area 4555: 2 pairs, 2 fledglings. 1996: Area 4555: 7 pairs, 6 fledglings. 1995: Area 4555: 9 pairs, 0 fledglings. 1994: Area 4555: 14 pairs, 5 fledglings. 1993: Area 4555: 11 pairs, 14 fledglings. 1992: Area 4555: 7 pairs, 13 fledglings. 1991: Area 4555: 8 pairs, 1 fledgling. 1990: Area 4555: 7 nests; 2 fledglings. 1989: Area 4555: 4 pairs, 4-6 fledglings. 1986: Area 4555: 4-5 pairs, 0 fledglings. 1985: Area 4555: 5 pairs, 1 fledgling. 1981: Area 4555: 2 pairs, 0 fledglings. 1980: Area 4555: 2 pairs..

General Area: An island <0.8 ha. in area which supports small patches of sparse grasses, substantial shrub growth, and several small trees.

General Comments: 1992: Town residents launch and moor private boats in the small cove east of Fox Point and south of Hen Island. The presence of terns is well-known by those who utilize this site, and they are careful not to land on or venture too close to the island during the breeding season.

Management Comments: 1992: Contact with the town of Newington and the local residents is the most effective technique for eliminating human disturbance at this site. Traps were set for rats in the spring. 1991: All nests were lost to rats this season. Traps were set in the fall.

#### Location

Survey Site Name: Hen Island  
Managed By: Fox Point

County: Rockingham  
Town(s): Newington  
Size: .4 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Area 4555: [Hen Island lies approximately 70 meters east of Fox Point on Little Bay in Newington.]

#### Dates documented

First reported: 1980-05-15      Last reported: 2011-07-13

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

## New Hampshire Natural Heritage Bureau - Animal Record

**Shortnose Sturgeon (*Acipenser brevirostrum*)****Legal Status**

Federal: Listed Endangered  
State: Listed Endangered

**Conservation Status**

Global: Rare or uncommon  
State: Critically imperiled due to rarity or vulnerability

**Description at this Location**

Conservation Rank: Not ranked  
Comments on Rank:

Detailed Description: 2016: 2 individuals, 1 female and 1 sex unknown, detected in Portsmouth Harbor and the lower Piscataquog River.<br />2015: 3 females and 2 other individuals, sex unknown detected in Portsmouth Harbor.<br />2014: 1 female detected moving from Portsmouth Harbor up the Piscataquog River to the mouth of the Cocheco River.<br />2012: 1 female detected in Little Bay.<br />2011: 1 female detected in Little Bay.<br />2010: 1 female detected in Little Bay.

General Area: 2016: Tidal waters in Portsmouth Harbor, Little Bay, and the Piscataquog River.

General Comments:  
Management  
Comments:

**Location**

Survey Site Name: Piscataquog River  
Managed By:

County: Rockingham  
Town(s): Newington  
Size: 7749.3 acres

Elevation:

Precision: Within 1.5 miles of the area indicated on the map (location information is vague or uncertain).

Directions: 2016: Tidal waters of Portsmouth Harbor, Little Bay, and the Piscataquog River.

**Dates documented**

First reported: 2010-11-03      Last reported: 2016-10-20

The U.S. Fish & Wildlife Service has jurisdiction over Federally listed species. Please contact them at 70 Commercial Street, Suite 300, Concord NH 03301 or at (603) 223-2541.



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
New England Ecological Services Field Office  
70 Commercial Street, Suite 300  
Concord, NH 03301-5094  
Phone: (603) 223-2541 Fax: (603) 223-0104  
<http://www.fws.gov/newengland>

In Reply Refer To:

August 23, 2019

Consultation Code: 05E1NE00-2019-SLI-2678

Event Code: 05E1NE00-2019-E-06959

Project Name: Newington/Durham Soil Borings

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

### To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
-

## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**New England Ecological Services Field Office**  
70 Commercial Street, Suite 300  
Concord, NH 03301-5094  
(603) 223-2541

---



## Project Summary

Consultation Code: 05E1NE00-2019-SLI-2678

Event Code: 05E1NE00-2019-E-06959

Project Name: Newington/Durham Soil Borings

Project Type: \*\* OTHER \*\*

**Project Description:** This project is proposed to occur between the Newington to Durham shorelines as indicated. The extents of the borings extend 150 feet beyond the mean high tide mark on the Durham shoreline and 250 feet beyond the mean high tide mark on the Newington shoreline. Seven borings are proposed on land with the remaining 9 borings being proposed within the tidal zone/bay, some of which requiring a barge. The timing of this project has not been finalized.

**Project Location:**

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/43.123684464370896N70.86337003817391W>



Counties: Rockingham, NH | Strafford, NH

---

## Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Threatened

## Flowering Plants

NAME	STATUS
Small Whorled Pogonia <i>Isotria medeoloides</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/1890">https://ecos.fws.gov/ecp/species/1890</a>	Threatened

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

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**ATTACHMENT 5**  
**U.S. Army Corps of Engineers NH PGP**  
**Requirements**





**US Army Corps  
of Engineers**®  
New England District

**New Hampshire General Permits (GPs)  
Appendix B - Corps Secondary Impacts Checklist  
(for inland wetland/waterway fill projects in New Hampshire)**

1. Attach any explanations to this checklist. Lack of information could delay a Corps permit determination.
2. All references to “work” include all work associated with the project construction and operation. Work includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.
3. See GC 5, regarding single and complete projects.
4. Contact the Corps at (978) 318-8832 with any questions.

<b>1. Impaired Waters</b>	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See <a href="http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm">http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm</a> to determine if there is an impaired water in the vicinity of your work area.*	<b>X</b>	
<b>2. Wetlands</b>	Yes	No
2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?	<b>X</b>	
2.2 Are there proposed impacts to SAS, special wetlands. Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) DataCheck Tool for information about resources located on the property at <a href="https://www2.des.state.nh.us/nhb_datacheck/">https://www2.des.state.nh.us/nhb_datacheck/</a> . The book <a href="#">Natural Community Systems of New Hampshire</a> also contains specific information about the natural communities found in NH.	<b>X</b>	
2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage?	<b>n/a</b>	
2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent to streams where vegetation is strongly influenced by the presence of water. They are often thin lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream banks. They are also called vegetated buffer zones.)		<b>X</b>
2.5 The overall project site is more than 40 acres?		<b>X</b>
2.6 What is the area of the previously filled wetlands?	<b>N/A</b>	
2.7 What is the area of the proposed fill in wetlands?	<b>0</b>	
2.8 What is the % of previously and proposed fill in wetlands to the overall project site?	<b>N/A</b>	
<b>3. Wildlife</b>	Yes	No
3.1 Has the NHB & USFWS determined that there are known occurrences of rare species, exemplary natural communities, Federal and State threatened and endangered species and habitat, in the vicinity of the proposed project? (All projects require an NHB ID number & a USFWS IPAC determination.) NHB DataCheck Tool: <a href="https://www2.des.state.nh.us/nhb_datacheck/">https://www2.des.state.nh.us/nhb_datacheck/</a> USFWS IPAC website: <a href="https://ecos.fws.gov/ipac/location/index">https://ecos.fws.gov/ipac/location/index</a>	<b>X</b>	

3.2 Would work occur in any area identified as either “Highest Ranked Habitat in N.H.” or “Highest Ranked Habitat in Ecological Region”? (These areas are colored magenta and green, respectively, on NH Fish and Game’s map, “2010 Highest Ranked Wildlife Habitat by Ecological Condition.”) Map information can be found at: <ul style="list-style-type: none"> <li>• PDF: <a href="http://www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/highest_ranking_habitat.htm">www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/highest_ranking_habitat.htm</a>.</li> <li>• Data Mapper: <a href="http://www.granit.unh.edu">www.granit.unh.edu</a>.</li> <li>• GIS: <a href="http://www.granit.unh.edu/data/downloadfreedata/category/databycategory.html">www.granit.unh.edu/data/downloadfreedata/category/databycategory.html</a>.</li> </ul>	<b>X</b>	
3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)?		<b>X</b>
3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development?		<b>X</b>
3.5 Are stream crossings designed in accordance with the GC 21?	<b>N/A</b>	
<b>4. Flooding/Floodplain Values</b>	<b>Yes</b>	<b>No</b>
4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?	<b>X</b>	
4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage?	<b>N/A</b>	
<b>5. Historic/Archaeological Resources</b>		
For a minimum, minor or major impact project - a copy of the Request for Project Review (RPR) Form ( <a href="http://www.nh.gov/nhdhr/review">www.nh.gov/nhdhr/review</a> ) with your DES file number shall be sent to the NH Division of Historical Resources as required on Page 11 GC 8(d) of the GP document**	<b>X</b>	

\*Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.

\*\* If your project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law.

`

Please mail the completed form and required material to:

New Hampshire Division of Historical Resources  
State Historic Preservation Office  
Attention: Review & Compliance  
19 Pillsbury Street, Concord, NH 03301-3570

**RECEIVED**  
SEP 10 2019

DHR Use Only	
R&C #	11091
Log In Date	9/10/19
Response Date	9/26/19
Sent Date	9/27/19

## Request for Project Review by the New Hampshire Division of Historical Resources

- ☒ This is a new submittal  
☐ This is additional information relating to DHR Review & Compliance (R&C) #:

### GENERAL PROJECT INFORMATION

Project Title Water Main Crossing

Project Location Piscataqua River

City/Town Newington, Durham Tax Map 1 (N), 12 (D) Lot # 1-1 (N), 5-2 (D), 8-2 (D)

NH State Plane - Feet Geographic Coordinates: Easting 1198714 Northing 228227 ✓  
(See RPR Instructions and R&C FAQs for guidance.)

Lead Federal Agency and Contact (if applicable) Army Corps of Engineers  
(Agency providing funds, licenses, or permits)

Permit Type and Permit or Job Reference # Wetlands

State Agency and Contact (if applicable) NHDES Wetlands Bureau

Permit Type and Permit or Job Reference #

### APPLICANT INFORMATION

Applicant Name City of Portsmouth (Brian Goetz)

Mailing Address 680 Peverly Hill Road Phone Number 603-427-1530

City Portsmouth State NH Zip 03801 Email bfgoetz@cityofportsmouth.com

### CONTACT PERSON TO RECEIVE RESPONSE

Name/Company Britt Eckstrom (Wright-Pierce)

Mailing Address 230 Commerce Way Suite 302 Phone Number 603-570-7126

City Portsmouth State NH Zip 03801 Email Britt.Eckstrom@wright-pierce.com

*This form is updated periodically. Please download the current form at [www.nh.gov/nhdhr/review](http://www.nh.gov/nhdhr/review). Please refer to the Request for Project Review Instructions for direction on completing this form. Submit one copy of this project review form for each project for which review is requested. Include a self-addressed stamped envelope to expedite review response. Project submissions will not be accepted via facsimile or e-mail. This form is required. Review request form must be complete for review to begin. Incomplete forms will be sent back to the applicant without comment. Please be aware that this form may only initiate consultation. For some projects, additional information will be needed to complete the Section 106 review. All items and supporting documentation submitted with a review request, including photographs and publications, will be retained by the DHR as part of its review records. Items to be kept confidential should be clearly identified. For questions regarding the DHR review process and the DHR's role in it, please visit our website at: [www.nh.gov/nhdhr/review](http://www.nh.gov/nhdhr/review) or contact the R&C Specialist at [marika.labash@dncr.nh.gov](mailto:marika.labash@dncr.nh.gov) or 603.271.3558.*



**PROJECTS CANNOT BE PROCESSED WITHOUT THIS INFORMATION**

11091

Project Boundaries and Description

- ☒ Attach the Project Mapping using *EMMIT* or relevant portion of a 7.5' USGS Map. (See RPR Instructions and R&C FAQs for guidance.)
- ☒ Attach a detailed narrative description of the proposed project.
- ☒ Attach a site plan. The site plan should include the project boundaries and areas of proposed excavation.
- ☒ Attach photos of the project area (overview of project location and area adjacent to project location, and specific areas of proposed impacts and disturbances.) (Informative photo captions are requested.)
- ☒ A DHR records search must be conducted to identify properties within or adjacent to the project area. Provide records search results via EMMIT or in Table 1. (Blank table forms are available on the DHR website.)  
EMMIT or in-house records search conducted on 07/24/2019.

Architecture

Are there any buildings, structures (bridges, walls, culverts, etc.) objects, districts or landscapes within the project area? ☒ Yes ☐ No

If no, skip to Archaeology section. If yes, submit all of the following information:

Approximate age(s): 130

- ☒ Photographs of *each* resource or streetscape located within the project area, with captions, along with a mapped photo key. (Digital photographs are accepted. All photographs must be clear, crisp and focused.)
- ☐ If the project involves rehabilitation, demolition, additions, or alterations to existing buildings or structures, provide additional photographs showing detailed project work locations. (i.e. Detail photo of windows if window replacement is proposed.)

Archaeology

Does the proposed undertaking involve ground-disturbing activity? ☒ Yes ☐ No

If yes, submit all of the following information:

- ☒ Description of current and previous land use and disturbances.
- ☒ Available information concerning known or suspected archaeological resources within the project area (such as cellar holes, wells, foundations, dams, etc.)

**Please note that for many projects an architectural and/or archaeological survey or other additional information may be needed to complete the Section 106 process.**

**DHR Comment/Finding Recommendation This Space for Division of Historical Resources Use Only**

- ☐ Insufficient information to initiate review. ☐ Additional information is needed in order to complete review.
- ☐ No Potential to cause Effects ☐ No Historic Properties Affected ☒ No Adverse Effect ☐ Adverse Effect

Comments:

*If plans change or resources are discovered in the course of this project, you must contact the Division of Historical Resources as required by federal law and regulation.*

Authorized Signature:

*Nestor Melt, DSHPO*

Date:

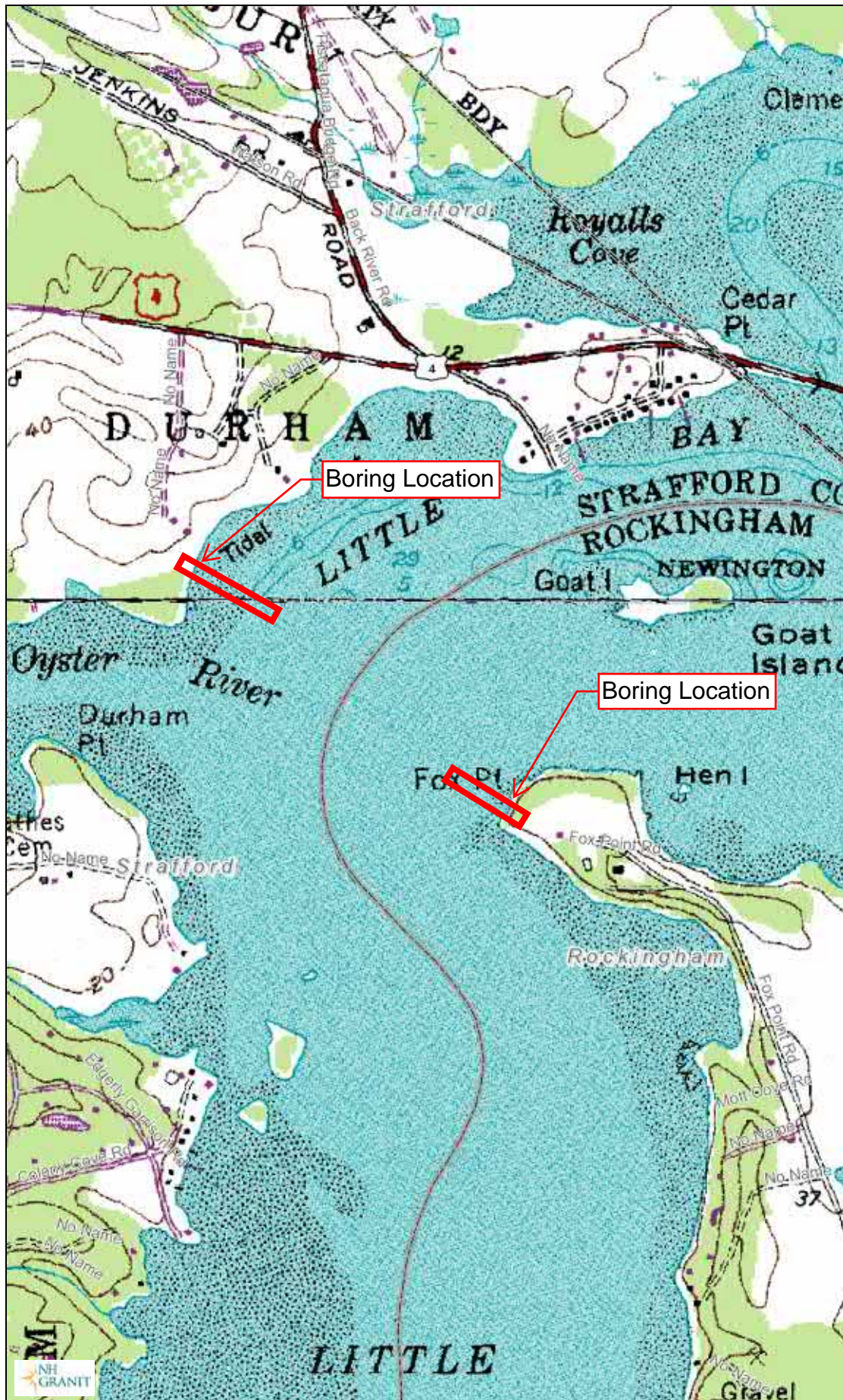
*9/26/19*

**ATTACHMENT 6**  
**USGS Topographic Map**





# Map by NH GRANIT



## Legend

- State
- County
- City/Town

Map Scale

1: 12,988

© NH GRANIT, [www.granit.unh.edu](http://www.granit.unh.edu)

Map Generated: 7/23/2019



## Notes





**ATTACHMENT 7**  
**Site Photographs**





City of Portsmouth, NH  
Little Bay Water Main Crossing

**Photos**



Photo 1: View Across Bay from Durham Shoreline



Photo 2: View of Durham Shoreline



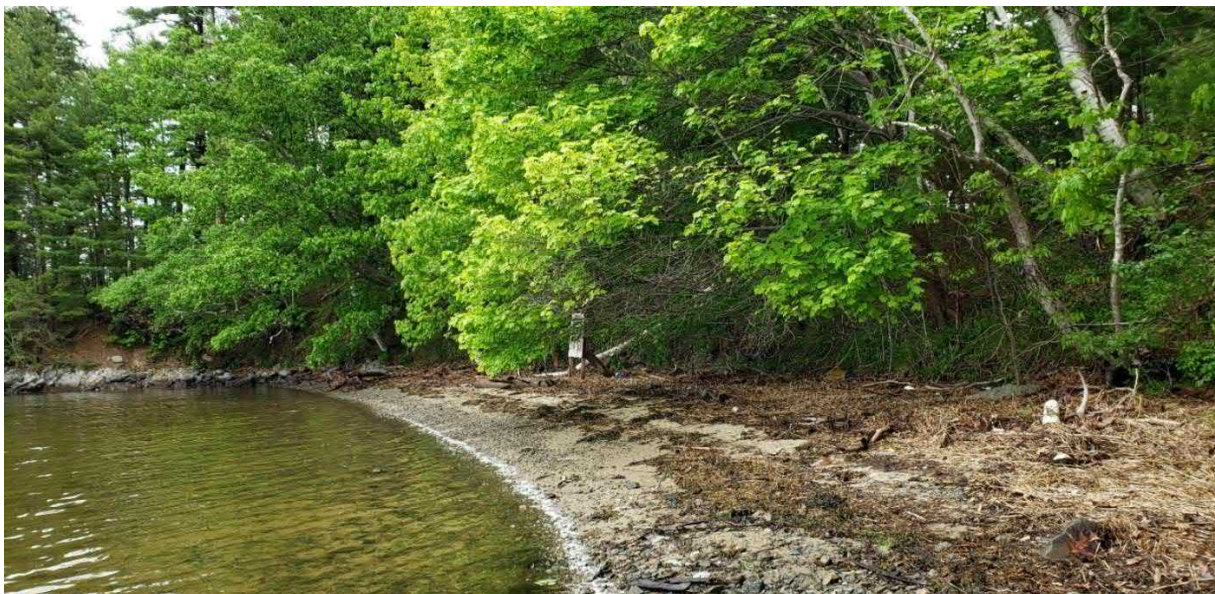
City of Portsmouth, NH  
Little Bay Water Main Crossing



Photo 3: View of Durham Shoreline Facing Northeast



Photo 4: View of Durham Shoreline Facing Southwest





City of Portsmouth, NH  
Little Bay Water Main Crossing

Photo 5: View of Newington Existing Pipe Crossing Location



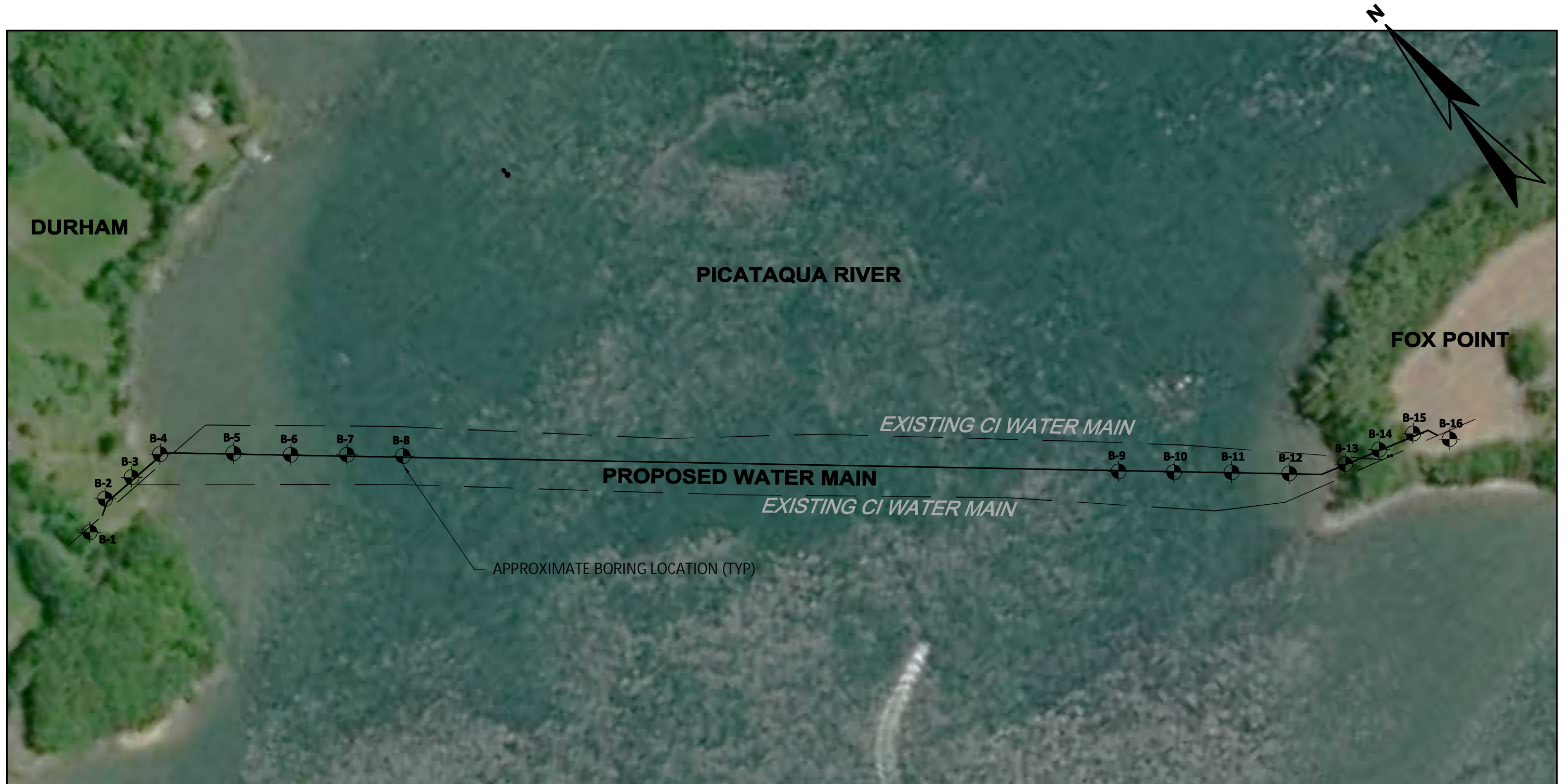
Photo 6: View of Newington Shoreline from Survey Vessel



**ATTACHMENT 8**  
**Proposed Boring Plan**



J:\ENG\NH\PORTSMOUTH\14202-SUBAQUEOUSWATERTRANSMAIN\DRAWINGS\CIV\WORKING\14202\_FIGURE1\_BORINGLAYOUTPLAN.DWG



**PROPOSED BORING LOCATION PLAN  
CITY OF PORTSMOUTH  
DURHAM-NEWINGTON, NH**

PROJ NO: 14202A | DATE: AUGUST 2019

**WRIGHT-PIERCE**   
Engineering a Better Environment

**FIGURE:**

**1**

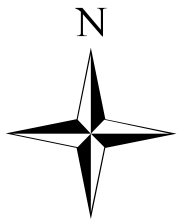




**ATTACHMENT 9**  
**Tax Maps**



# Map 12



PROPERTY MAP  
**DURHAM**  
NEW HAMPSHIRE

**See Map 12A**

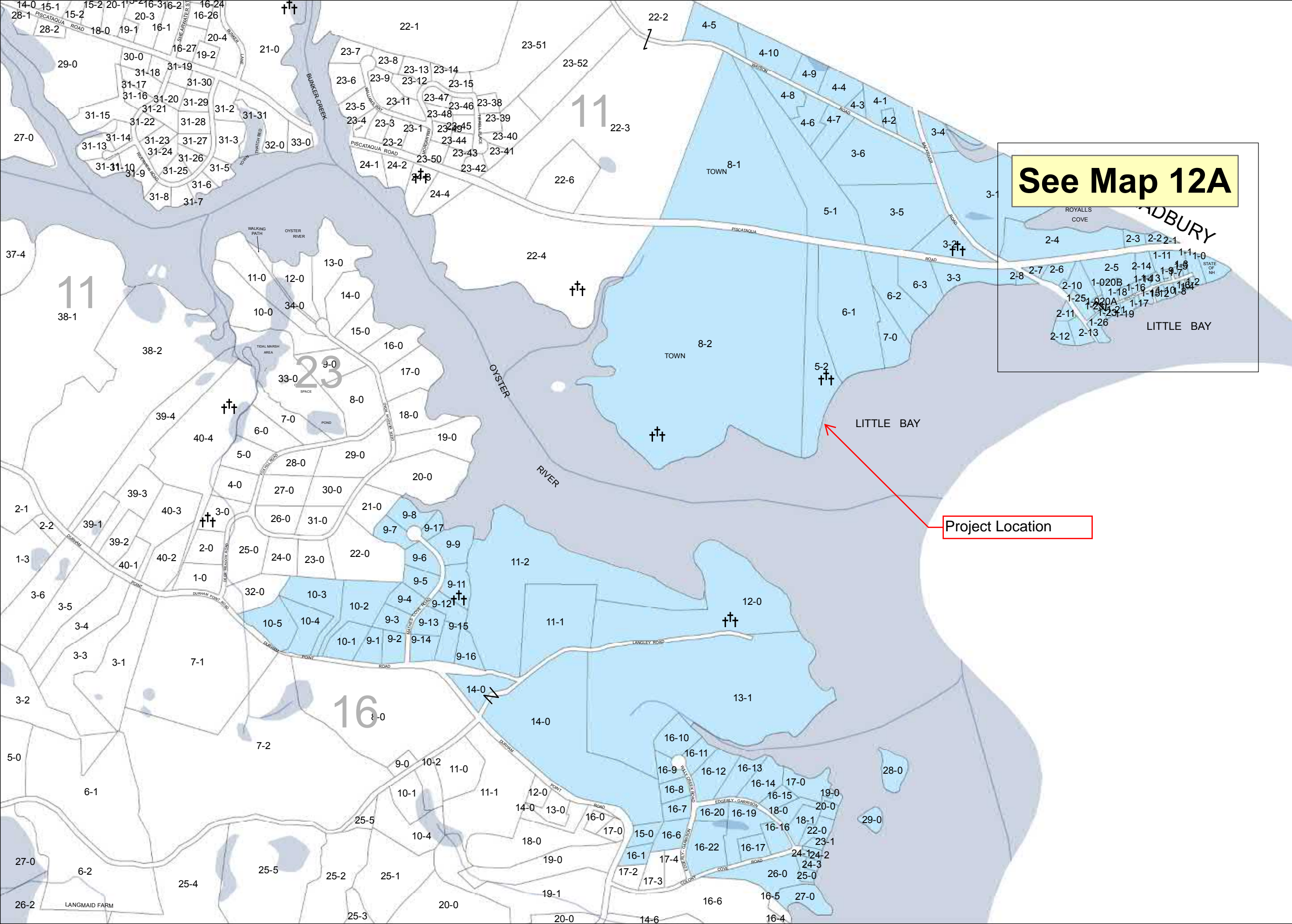
Project Location

- Legend**
- Adjacent Map Sheets
  - Current Map Sheet
  - Cemetery

1 inch = 910 feet

This map was updated by  
Strafford Regional Planning  
and the Town of Durham  
January 2019.

THIS MAP IS FOR  
ASSESSMENT PURPOSES.  
IT IS NOT INTENDED  
FOR LEGAL DESCRIPTION  
OR CONVEYANCE.





Project Location

GREAT BAY

1-1-1  
TOWN OF NEWINGTON  
2.06

HEN ISLAND

FOX POINT

1-1  
TOWN OF NEWINGTON  
110.00 AC.

FOX POINT ROAD

S 10.270

GREAT BAY

LEGEND	LOT NO. 12-12	DIMENSIONS 123.45'
TOWN LINE	---	---
ROW - PUBLIC	---	---
ROW - PRIVATE	---	---
ROW - PAPER	---	---
LOTLINE	---	---
EASEMENT	---	---
BROOKS/STREAMS	---	---
LAKES/RIVERS	---	---
FORMER LOT LINE	---	---
PDA / BNDY.	---	---
BUILDINGS/DRIVES	---	---
WETLANDS / WATER BODIES	---	---
PRIME WETLAND	---	---



**MERIDIAN LAND SERVICES, INC.**  
31 OLD NASHUA ROAD, AMHERST, N.H. 03110  
TEL: 603-873-1441 FAX: 603-873-1884  
ENGINEERS - LAND SURVEYORS - SCIENTISTS - LAND PLANNERS

THIS DOCUMENT HAS BEEN PREPARED  
TO SHOW APPROXIMATE LOT LOCATION  
ONLY. INFORMATION SHOWN IS NOT  
TO BE USED FOR DEED DESCRIPTIONS.

**NEWINGTON, N.H.**

TAX MAP SCALE  
24"x36" PLOT - 1"=100'  
11"x17" PLOT - 1"=220 +/-'  
AUGUST 2015  
DATE OF LATEST REVISION

GRAPHIC SCALE  
0 50 100 200'  
MLS JOB NO. 4171.00

57	2
4	5

1





**ATTACHMENT 10**  
**Project Easements/Property**



**PROPERTY & EASEMENTS**

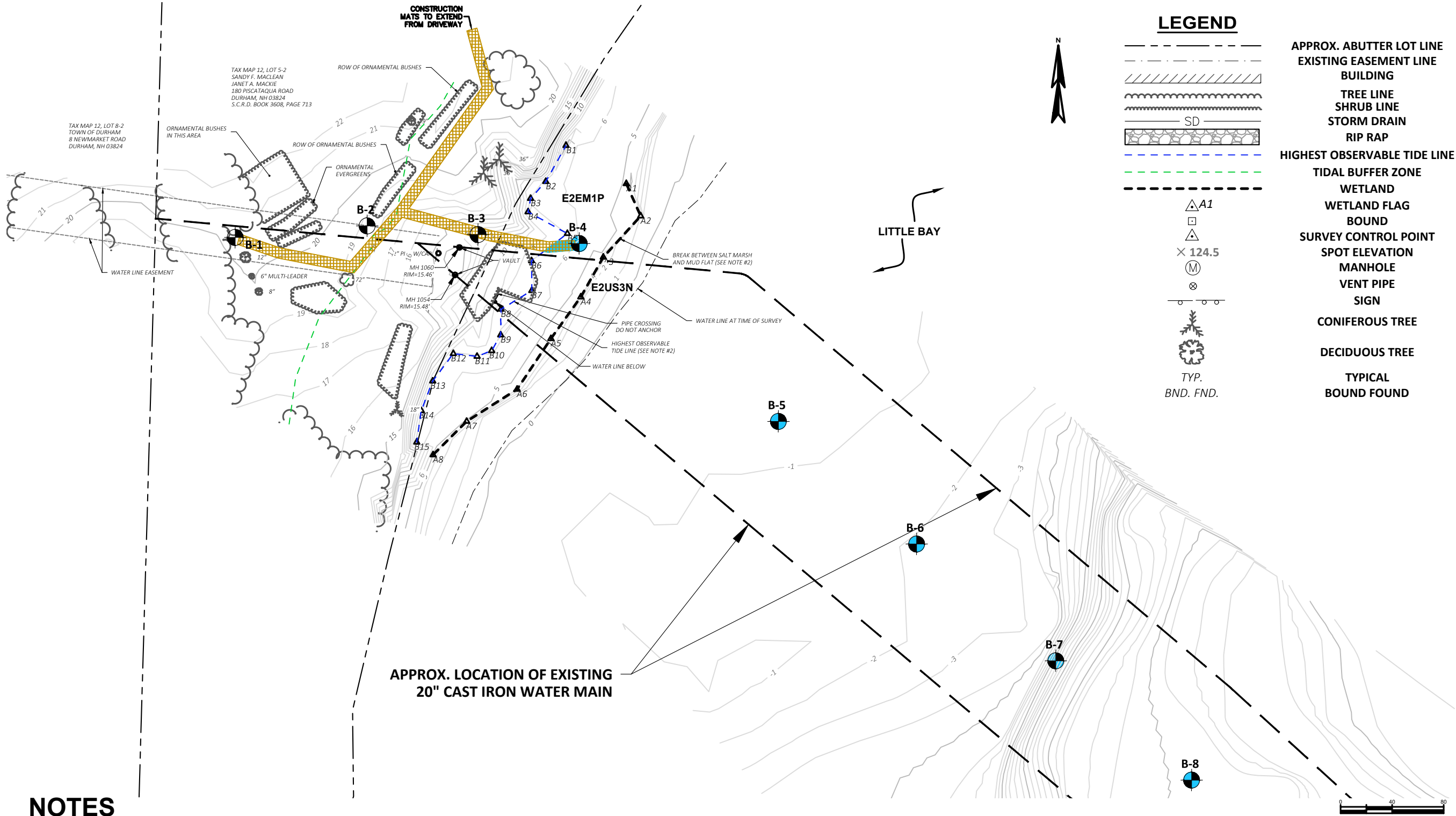
All proposed borings are located within the water line easement boundaries established for the water main when installed. The easement crosses property owned by a private landowner on the Durham side and over land owned by the Town of Newington on the Newington side. Abutter notification is not required since the project is for utility maintenance and repair. However, the City of Portsmouth is coordinating with the private landowner on the Durham side and the Town of Newington.



**ATTACHMENT 11**  
**Wetland Impact Plan**



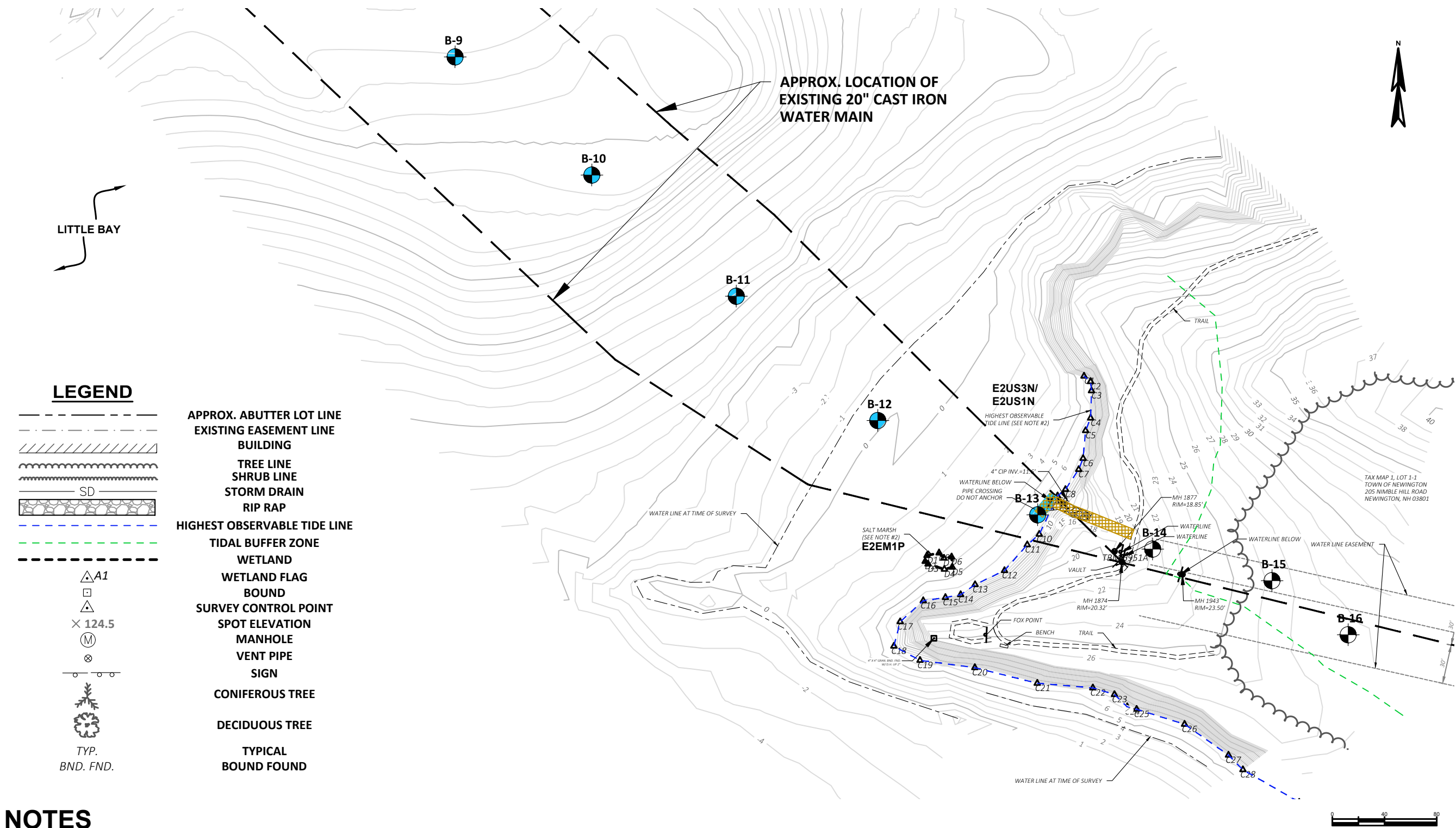
J:\ENG\NH\PORTSMOUTH\14202-SUBAQUEOUSWATERMAIN\DRAWINGS\14202A-CS-WETLANDIMPACTFIG.DWG



CITY OF PORTSMOUTH, NH SUBAQUEOUS WATER MAIN LITTLE BAY, DURHAM-NEWINGTON NEW HAMPSHIRE		NO.	REVISIONS	DRAWN BY	APP'D
		1			
		2			
		3			
PROJ NO: 14202a		DATE: OCTOBER 2019		FIGURE: 2	
WRIGHT-PIERCE Engineering a Better Environment		WETLAND IMPACT FIGURE			



J:\ENG\NH\PORTSMOUTH\14202-SUBAQUEOUSWATERMAIN\DRAWINGS\CIV\FIGURES\14202A-CS-WETLANDIMPACTFIG.DWG



## NOTES

1. FIELD SURVEY PERFORMED BY DOUCET SURVEY, INC., DURING MAY & JUNE 2019 USING A TRIMBLE S7 TOTAL STATION AND A TRIMBLE R10 SURVEY GRADE GPS WITH A TRIMBLE TSC3 DATA COLLECTOR AND A SOKKIA B21 AUTO LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS.
2. JURISDICTIONAL RESOURCES INCLUDING HIGHEST OBSERVABLE TIDE LINE WERE DELINEATED ON MAY 29, 2019 BY MARC JACOBS, CERTIFIED WETLAND SCIENTIST NUMBER 090, ACCORDING TO THE STANDARDS OF THE US ARMY CORPS OF ENGINEERS – WETLANDS DELINEATION MANUAL; THE 2012 REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION; AND THE CODE OF ADMINISTRATIVE RULES, NH DEPARTMENT OF ENVIRONMENTAL SERVICES – WETLANDS BUREAU – ENV WT 100–900. SOILS WERE EVALUATED UTILIZING THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4, APRIL 2019 AND THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8, 2016. THE INDICATOR STATUS OF VEGETATION AS HYDROPHYTIC WAS DETERMINED ACCORDING TO THE U.S. ARMY CORPS OF ENGINEERS – NORTHCENTRAL AND NORTHEAST 2016 REGIONAL WETLAND PLANT LIST. COPIES OF SITE PLANS WHICH HAVE BEEN REVIEWED BY THE WETLAND SCIENTIST ARE INDIVIDUALLY STAMPED, SIGNED AND DATED. THIS NOTE HAS BEEN CUSTOMIZED FOR THIS PROJECT.

REVISIONS		DRAWN BY	APP'D
NO.	1		
	2		
	3		
CITY OF PORTSMOUTH, NH SUBAQUEOUS WATER MAIN LITTLE BAY, DURHAM-NEWINGTON NEW HAMPSHIRE			FIGURE: 3
PROJ NO: 14202a		DATE: OCTOBER 2019	
WRIGHT-PIERCE		WETLAND IMPACT FIGURE	
Engineering a Better Environment			

