

NHDES Wetland Permit Application for the Site-Specific Testing of Wedgewire Screens

Schiller Station

Portsmouth, NH

Prepared For

Granite Shore Power, LLC
431 River Road
Bow, NH 03304

Prepared By

Normandeau Associates, Inc.
25 Nashua Road
Bedford, NH 03110-5500
603.472.5191

September 2018

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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

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

<i>Administrative Use Only</i>	<i>Administrative Use Only</i>	<i>Administrative Use Only</i>	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 Question](#).

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 that wetland impacts occur within.

ADDRESS: **400 Gosling Road** | TOWN/CITY: **Portsmouth**
 TAX MAP: **214** | BLOCK: | LOT: **1** | UNIT: |
 USGS TOPO MAP WATERBODY NAME: **Piscataqua River** NA | STREAM WATERSHED SIZE: **5,000+ acres** NA
 LOCATION COORDINATES (If known): **43.098202, -70.782917** 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.

Schiller Station was issued a NPDES permit requiring the station to install and operate a full scale wedgewire screen (WWS) intake system at its cooling water intake structure. This request is for the installation and removal of two WWSs to be used in a Pilot Study that will inform design specifications for the full scale WWS. This impact is temporary in nature, with the Pilot Study lasting approximately one year.

5. SHORELINE FRONTAGE:

NA This does not have shoreline frontage. SHORELINE FRONTAGE: **Tax parcel frontage= 4,235 ft**
 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.

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 Web Page](#).

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 **18** - **2458**.

b. [Designated River](#) the project is in ¼ miles of: _____; and
 date a copy of the application was sent to the [Local River Management Advisory Committee](#): Month: ___ Day: ___ Year: ____
 N/A

8. APPLICANT INFORMATION (Desired permit holder)LAST NAME, FIRST NAME, M.I.: **Palmer, Allan**TRUST / COMPANY NAME: **Granite Shore Power, LLC**MAILING ADDRESS: **431 River Road**TOWN/CITY: **Bow**STATE: **NH**ZIP CODE: **03304**EMAIL or FAX: **Allan.Palmer@graniteshorepower.com**PHONE: **603-230-7951**ELECTRONIC COMMUNICATION: By initialing here: AP, I hereby authorize NHDES to communicate all matters relative to this application electronically.**9. PROPERTY OWNER INFORMATION (If different than applicant)**

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.

10. AUTHORIZED AGENT INFORMATIONLAST NAME, FIRST NAME, M.I.: **Allen, Sarah**COMPANY NAME: **Normandeau Associates, Inc.**MAILING ADDRESS: **25 Nashua Road**TOWN/CITY: **Bedford**STATE: **NH**ZIP CODE: **03110**EMAIL or FAX: **sallen@normandeau.com**PHONE: **603-637-1158**ELECTRONIC COMMUNICATION: By initialing here SA, I hereby authorize NHDES to communicate all matters relative to this application electronically.**11. PROPERTY OWNER SIGNATURE:**

See the Instructions & Required Attachments document for clarification of the below statements

By signing the application, I am certifying that:

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.
2. I have reviewed and submitted information & attachments outlined in the Instructions and Required Attachment document.
3. All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900.
4. I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type.
5. I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative.
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.
7. I have submitted a Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) 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 NHPA 106 compliance.
8. I authorize NHDES and the municipal conservation commission to inspect the site of the proposed project.
9. I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate.
10. I understand that the willful submission of falsified or misrepresented information to the New Hampshire Department of Environmental Services is a criminal act, which may result in legal action.
11. I am aware that the work I am proposing may require additional state, local or federal permits which I am responsible for obtaining.
12. The mailing addresses I have provided are up to date and appropriate for receipt of NHDES correspondence. NHDES will not forward returned mail.



Property Owner Signature

ALLAN PALMER

Print name legibly

9/26/2018


Date

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
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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.

			
Town/City Clerk Signature	Print name legibly	Town/City	Date

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.

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 complete.

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	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Perennial Stream / River	/	196 /
Lake / Pond	/	/
Bank - Intermittent stream	/	/
Bank - Perennial stream / River	/	/
Bank - Lake / Pond	/	/
Tidal water	/	/
Salt marsh	<input type="checkbox"/> ATF	<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
TOTAL	/	196 /

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) 196 sq. ft. X \$0.20 = \$ 39.2

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 = \$ 39.2

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

Copy of Check for Application Fee



NORMANDEAU ASSOCIATES, INC.

25 Nashua Road, Bedford, NH 03110-5527

(603) 472-5191 (603) 472-7052 fax

CITIZENS BANK
MASSACHUSETTS
5-7017/2110

105764
CHECK DATE

August 23, 2018

PAY Two Hundred and 00/100 Dollars

AMOUNT

TO Treasurer, State of New Hampshire
ATT: NHDES
P.O. Box 95
Concord, NH 03302-0095

200.00

Pamela S. Hall MP
TWO SIGNATURES REQUIRED OVER \$500.00



⑈ 105764 ⑈ ⑆ 211070175 ⑆ 1104114302 ⑈

NORMANDEAU ASSOCIATES, INC. 25 Nashua Road, Bedford, NH 03110-5527

EMILY BUSINESS FORMS 800.392.6018 VISION

105764

Check Date: 8/23/2018

Invoice Number	Date	Voucher	Amount	Discounts	Previous Pay	Net Amount
permit	8/22/2018	2446392	200.00			200.00
Treasurer, State of New Hampshire			TOTAL	200.00		200.00
Citizens MA Checking	33	70697				

Schiller Station NHDES Wetlands Permit
WWS Pilot Study

Project Description

Schiller Station in Portsmouth, New Hampshire was issued a final National Pollutant Discharge Elimination System (“NPDES”) Permit (No. NH0001473) by the United States Environmental Protection Agency Region 1 on April 6, 2018. The final NPDES Permit requires the Station to install and operate a full scale wedgewire screen (“WWS”) intake system at its cooling water intake structures with a pressurized air burst system to clear debris from the screens, to minimize entrainment of aquatic organisms. The permit requires, among other things, that the installed, full-scale Schiller WWS system must have a slot width or mesh size not greater than 0.8 mm, unless a site-specific study (“Pilot Study”) can demonstrate that a larger slot size is equally or more effective for reducing entrainment mortality as a 0.8 mm WWS slot or mesh size. In addition, to minimize impingement mortality, the through-screen velocity at the installed WWS must be maintained at no greater than 0.5 fps.

GPS is proposing a Pilot Study to test two WWS slot widths of 0.8 mm and 3.0 mm to help identify the correct slot width for the site-specific conditions. Two primary characteristics will be monitored: 1) the rate of screen fouling, clogging, or blockage for each screen tested, and 2) the entrainment reduction under the site-specific conditions (including river velocity, direction, and depth) for each screen tested. The data gathered from this test will help determine the WWS slot width for final installation, accounting for the availability of the screen (i.e., the anticipated time when the screen would not be clogged) and the effectiveness at entrainment reduction.

This wetlands permit application is for the installation and removal of the temporary test WWS and associated equipment used in the Pilot Study. In-river testing will take place over the course of approximately one year and will feature two sample pumps continuously drawing flow through independent lines, each headed by a wedgewire test screen installed on the river bottom in front of Screen House #1. During the entrainment monitoring phase, the pump discharge streams will be filtered through an aquatic life collection tank and discharged back into the river within the screen house bays. During the screen fouling phase, the pump discharge streams will be discharged back to the river within the screenhouse bays. Additionally, a control sample stream will be taken from the Unit 5 intake line, downstream of the traveling screen, which will be filtered through a separate aquatic life collection tank and discharged to the river concurrently with the other two streams.

River bed impacts

The Pilot Study will utilize two small-scale cylindrical wedge wire screens to model full-scale screens. The test screens have identical dimensions except for the perforation size and pattern. Each screen assembly has an overall height of 3.37 ft with a screen diameter of 1.05 ft and an overall screen length of 2.65 ft (see Project Plans). The screens will each be mounted on a square concrete foundation, which will serve to anchor the screens while minimizing settling. The foundations will each have a footprint of 9 square feet. The screens will each be connected to a suction line that will run within the Unit 3 intake tunnel, which extends 32 feet from the shore, to a pump located within Screen House #1.

The Pilot Study cylindrical wedgewire screens are anticipated to be located approximately 163 feet into the river from the face of Screen House #1, at the expected design location of the full-size installation. This expected location is based on the acoustic doppler current profiler (“ADCP”) current data collected by Normandeau Associates, Inc. (Normandeau), and was selected to capitalize on strong ambient current flows that are directionally consistent. The final locations for both the test screens and the full-size installation will be dependent upon the specific river bottom conditions in the area, and may vary slightly from the design location. Based on the site-specific river bottom conditions, the screen locations may be brought in further towards the shore or extended out up to 25 feet further away from shore, as needed.

Therefore, it is expected that the final Pilot Study screen locations could have a maximum span of 156 feet ($163 + 25 - 32$) between the screens and the intake tunnel. The change in depth over that span is approximately 30 feet, resulting in a hose length of 159 feet along the river bottom between the screens and the intake tunnel. Using the maximum suction hose length and the hose diameter of 6 inches, the suction hoses are each estimated to have a footprint of approximately 80 square feet on the river bed. It should be noted that use of the full hose diameter to determine the contact area is conservative, since the curvature of the hose will result in a smaller area physically contacting the river bottom. Although the final screen placements will be subject to river bottom conditions and dependent on the discretion of the dive team performing the installation, the two screens will have a minimum of 20 feet of space between them, and the suction lines will run from the screens to a common location (the offshore intake).

The suction hoses will be anchored in place during installation to prevent the high river currents from shifting the hoses and the test screens. The hoses will be anchored by cables tethered to 1-inch wide by 26-inch long screw-type penetrators spaced approximately at 20-foot intervals. The penetrators would be driven underneath the hose, such that they do not add to the affected river bed area. For hose runs of 159 feet, 9 anchors would be required for each line.

Since direction of flow changes with the ebb currents, an ADCP will be placed upstream and downstream of the screens. These two ADCP moorings will impact a total of 18 square feet. The ADCP placement is offset from the long and short centerline axes of the wedgewire screens so that the wake (turbulence) from the ADCP will not impact flow to either screen. Based on the geometry of the ADCP as well as the mean velocity of the river in the location of the ADCP, the wake is determined to be approximately 30’ in length, and therefore 30’ is the minimum distance the ADCP should be located relative to the longitudinal and cross-section axes of either screen.

Therefore, the maximum expected surface footprint of the test equipment on the river bed is 196 square feet for both test screens and suction hoses. Additionally, the maximum penetrating footprint of the screw penetrators on the river bed is 0.1 square feet at a depth of 26 inches into the river bed.

Information gathered by GSP to date indicates that the river bottom in the general vicinity of the planned Pilot Study screen locations consists of a coarse, gravelly substrate. Therefore, it is not expected that rip rap around the screens will be required to prevent scouring. Although not anticipated, if scouring around the test screen foundations does prove to be an issue during testing, bags of rip rap may be placed around the screen foundations as a mitigation measure. The rip rap would be entirely contained within the bags and would be retrieved from the river bottom following the conclusion of the study.

Need, Minimization & Avoidance

Wetlands Permit Application – Attachment A: Minor and Major – 20 Questions



**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



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 impact is for entrainment monitoring and analysis in support of a final National Pollutant Discharge Elimination System (“NPDES”) Permit (No. NH0001473) issued for Schiller Station Permit (No. NH0001473) by the United States Environmental Protection Agency Region 1 on April 6, 2018. The final NPDES Permit requires the Station to install and operate a full scale wedgewire screen (“WWS”) intake system at its cooling water intake structures with a pressurized air burst system to clear debris from the screens, to minimize entrainment of aquatic organisms. The permit requires, among other things, that the installed, full-scale Schiller WWS system must have a slot width or mesh size not greater than 0.8 mm, unless a site-specific study (“Pilot Study”) can demonstrate that a larger slot size is equally or more effective for reducing entrainment mortality as a 0.8 mm WWS slot or mesh size. This wetlands permit application is for the installation and removal of the temporary test WWS and associated equipment used in the Pilot Study.

This Pilot Study is part of a larger project that will substantially reduce entrainment of the station intakes. Depending on the Pilot Study outcome, screens with a smaller footprint might be permitted for the permanent wedgewire screen installation, resulting in a smaller wetland impact in the final design.

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

The alternative proposed is for the installation and removal of the WWS used in the Pilot Study. WWSs with slot widths of 0.8 mm and 3.0 mm will be tested in comparison with the Schiller Station Unit 5 intake as a control to develop efficacy measurements of entrainment reduction performance of the tested WWS. The Pilot Study will last one year. Additionally, it will have a small wetland footprint impact (approximately 196 square feet for the two intakes), and no shoreline disturbance. Results of this study will ensure that the minimum amount of entrainment mortality results from the permanent WWS to be installed at a later date.

3. The type and classification of the wetlands involved.

The Pilot Study will be located in the Piscataqua River, an estuarine, subtidal, unconsolidated bottom river (E1UBL) according to the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979) and National Wetlands Inventory.

4. The relationship of the proposed wetlands to be impacted relative to nearby wetlands and surface waters.

The impacted estuarine and marine deepwater river is in close proximity to the Atlantic Ocean and has several tributaries running along its length. These tributaries are often adjacent to freshwater emergent, forested, and/or shrub wetlands. Other than the Piscataqua River, no state or federal wetlands are present in the Project area.

5. The rarity of the wetland, surface water, sand dunes, or tidal buffer zone area.

There are 51 E1UBL wetlands listed in the National Wetlands Inventory for the state of New Hampshire. The Piscataqua River is the largest of this list at over 5,000 acres, representing approximately 65 percent of this wetland classification in New Hampshire by area.

6. The surface area of the wetlands that will be impacted.

A total of 196 square feet of temporary wetland impacts (Piscataqua River) are proposed for this Project, which includes 0 linear feet of bank. The bank will be avoided by use of an existing pipe leading to onshore pump houses. The bank of the Piscataqua bordering Schiller Station is composed primarily of riprap.

Information gathered by GSP to date indicates that the river bottom in the general vicinity of the planned test screen locations consists of a coarse, gravely substrate. Therefore, it is not expected that rip rap around the screens will be required to prevent scouring. Although not anticipated, if scouring around the test screen foundations does prove to be an issue during testing, bags of rip rap may be placed around the screen foundations as a mitigation measure. The rip rap would be entirely contained within the bags and would be retrieved from the river bottom following the conclusion of the test.

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.

In consultation with the New Hampshire Natural Heritage Bureau, two records (e.g., rare wildlife, plant, and/or natural community) are listed as present within the Project vicinity: Atlantic and shortnose sturgeon. The pilot study phase of this project is not expected to affect these species or their habitats. Installation of the test screens and hose attachments will occur outside of the breeding period for both species, so no reproductive impacts are anticipated. Additionally, results of the study will reduce future mortality of larval sturgeon by informing which wedgewire screen specifications should be used for the permanent installation. No vernal pools are present within the Project area.

DES consultation with National Marine Fisheries Service (Mike Johnson, personal communication with Collis Adams on July 31, 2018) indicates there are no issues of concern with the Pilot Study, including no adverse effects to sturgeon.

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

The Project is not anticipated to have any impact on public commerce, navigation, or recreation. The Project infrastructure will be on the river bottom. Temporary disruptions to local boating traffic during installation and removal of the test screens could occur, but due to the width of the river at this location, only minimal disruptions, if any, are anticipated. The Project is located approximately 50 feet outside of the Federal Navigation Channel, therefore no effects to commercial traffic will occur. There is no expected change in land use as a result of the Project.

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.

There will be no change in aesthetics as a result of this Project. No portion of the Project will be visible above water as the onshore equipment will be housed in existing structures.

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.

The Project is not anticipated to interfere or obstruct public rights of passage or access. Structures within the Piscataqua River will be on the river bottom, out of the path for boats and other aqueous vehicles using the area.

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.

There will be no impact on abutting owners. Wetland impacts will occur in navigable waters and be both temporary and minimal.

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

The Project will support the NPDES permit requirements of Schiller Station, one of New Hampshire's largest renewable energy generating stations. The plant provides energy for approximately 50,000 New Hampshire residences yearly, and this Pilot Study project would provide the public benefit of allowing the plant to continue providing reliable energy to surrounding communities. Additionally, the results of the WWS Pilot Study will be used to determine the screen size for the permanent intake that is least impactful to aquatic organisms.

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.

The proposed Project will have minimal impact to the Piscataqua River. It is expected that the screen locations could have a maximum span of 156 feet between the screens and the existing intake tunnel. The change in depth over that span is approximately 30 feet, resulting in a hose length of 159 feet along the river bottom between the screens and the intake tunnel. Using the maximum suction hose length and the hose diameter of 6 inches, the suction hoses are each estimated to have a footprint of approximately 80 square feet on the river bed.

The suction hoses will be anchored in place during installation to prevent the high river currents from shifting the hoses and the test screens. The hoses will be anchored by cables tethered to 1-inch wide by 26-inch long screw-type penetrators spaced approximately at 20-foot intervals. The penetrators would be driven underneath the hose, such that they do not add to the affected river bed area. For hose runs of 159 feet, 9 anchors would be required for each line. Two ADCP moorings will be used, one at each test screen location, impacting an additional 18 square feet.

Therefore, the maximum expected surface footprint of the test equipment on the river bed is 196 square feet for both test screens and suction hoses. Please see Project Narrative for additional detail.

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

Only temporary disturbance to the river bottom is anticipated, no flooding or erosion is expected from project activities. Placement of the concrete block foundations for the test screens and the hoses and screw anchors will cause negligible, temporary sedimentation. Due to the size of the receiving waters, it is not anticipated this will have a negative impact on surrounding flora and fauna.

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.

Although the Project is located within surface waters, it will not cause the reflection or redirection of current or wave energy.

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.

Granite Shore Power is proposing temporary impacts to a small portion (196 sf) of the wetland, the Piscataqua River. Abutting landowners benefit from the resulting permit compliance and resulting power generation. No similar actions from abutting properties is anticipated.

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

The impacted area of the wetland is small relative to the overall size of the wetland, thus impacted to the functions and values of the total wetland will be negligible.

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.

No listed sites from the National Register of Natural Landmarks occur within Rockingham County, NH or York County, ME. All proposed impacts are temporary in nature, and will occur below surface water of the Piscataqua River. Therefore, no impacts to the values of sites in the latest published edition of the National Register of Natural Landmarks, or sites eligible for such publication, are anticipated.

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.

No national rivers, wilderness areas, lakeshores, or such areas are within the Project vicinity, thus there will be no impacts to such areas.

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

The Project will not redirect water from one watershed to another.

Additional comments

NHB Results

NHB File ID: NHB18-2458

Two vertebrate species are documented as occurring in the Project vicinity: Atlantic Sturgeon (*Acipenser oxyrinchus*), a federally threatened species; and Shortnose Sturgeon (*Acipenser brevirostrum*), a federally endangered species.

Due to the confidential nature of these reports, the full review will only be provided in the NHDES submittal copy and not in town copies of the application. Please contact the NH Natural Heritage Bureau for more information regarding these results.

NH PGP Requirements

Appendix B – Required Information and Corps Secondary Impact Checklist and Supporting Documentation

NHDES Impaired Waters Map – Rockingham County and Impairment Report Card

NH GRANIT Shellfish Map

NHDES Prime Wetlands Map – Portsmouth, NH

NHF&G WAP 2015: Highest Ranked Wildlife Habitat Map

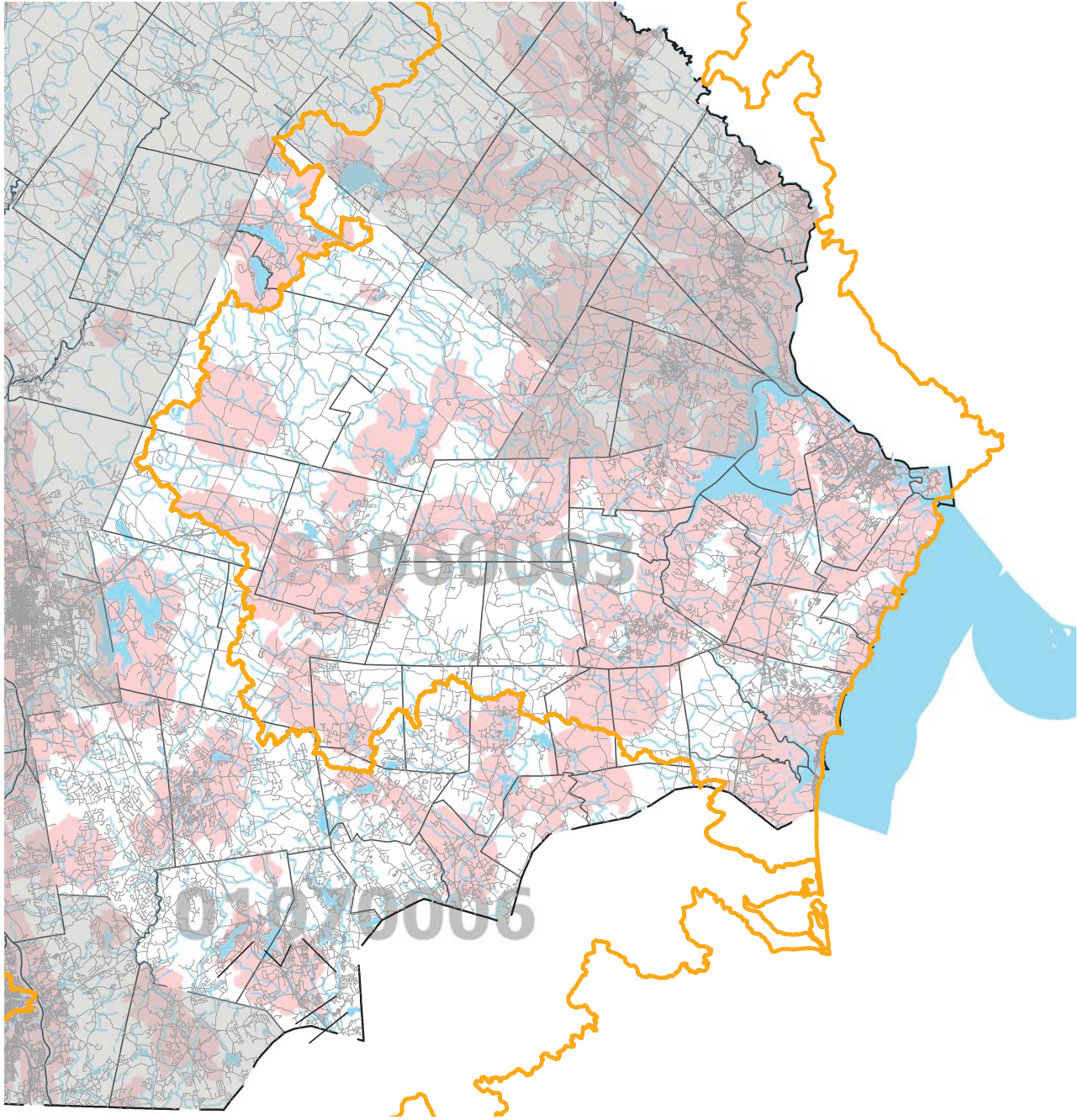
FEMA National Flood Hazard Layer FIRMette

DHR File Review

USFWS IPaC Resource List

NOAA Section 7 Mapper Results

Rockingham County: Impaired Waters Vicinity* for which No Additional Loading Criteria Applies



*Vicinity based upon a 1 mile buffer of Assessment Units impaired in the 2006 SWQA for one or more of the following;

- Invertebrates,
- Cadmium,
- Chlorophyll *a*,
- Copper,
- Cyanobacteria,
- Dissolved Oxygen (% Sat or mg/L),
- Enterococcus,
- *E. coli*,
- Algal Growth,
- Fecal Coliform,
- Lead,
- Total Phosphorus,
- Sedimentation & Siltation,
- Zinc.

	Major Divides (HUC8)
	Roads(NHDOT)
	State Boundary
	County Boundary
	Town Boundary
	2006 Assessment Unit ID Lines (1:100k NHD)
	2006 Assessment Unit ID Polygons(1:100k NHD)
	One Mile Buffer on No Additional Loading AUIDs

This map is intended solely as a screening tool to assist you in identifying areas within 1 mile upstream in the watershed of an impaired waterbody. This map is not intended to show analytical results regarding pollutant loading or any other information related to sections 305(b) or 401 of the Clean Water Act or any other State or federal laws.

The coverages presented in this program are under constant revision as new sites or facilities are added. They may not contain all of the potential or existing sites or facilities. The Department is not responsible for the use or interpretation of this information, nor for any inaccuracies.

For more information on the 2006 Surface Water Quality Assessments see:
<http://des.nh.gov/wmb/swqa/>



Map Prepared July 17, 2007.

Welcome to New Hampshire’s Watershed Report Cards built from the 2016, 305(b)/303(d)

Each Watershed Report Card covers a single 12 digit Hydrologic Unit Code (HUC12), on average a 34 square mile area. Each Watershed Report Card has three components;

1. REPORT CARD - A one page card that summarizes the overall use support for Aquatic Life, Primary Contact (i.e. Swimming), and Secondary Contact (i.e. Boating) Designated Uses on every Assessment Unit ID (AUID) within the HUC12.
2. HUC 12 MAP - A map of the watershed with abbreviated labels for each AUID within the HUC12.
3. ASSESSMENT DETAILS - Anywhere from one to forty pages with the detailed assessment information for each and every AUID in the Report Card and Map.

How are the Surface Water Quality Assessment determinations made?

All readily available data with reliable Quality Assurance/Quality Control is used in the biennial surface water quality assessments. For a full understanding of how the Surface Water Quality Standards (Env-Wq 1700) are translated into surface water quality assessments we urge the reader to review the 2016 Consolidated Assessment and Listing Methodology (CALM) at <https://www.des.nh.gov/organization/divisions/water/wmb/swqa/2016/documents/r-wd-17-08.pdf>

Where can I find more advanced mapping resources?

GIS files are available by assessment cycle at <ftp://pubftp.nh.gov/DES/wmb/WaterQuality/SWQA/>

I’d like to see the more raw water quality data?

The web mapping tool allows you to download the data used in the assessment of the primary contact and aquatic life designated uses by clicking on the “Data Access Waterbody Data (Aquatic Life and Swimming Uses)” link for any assessment unit. (http://www2.des.state.nh.us/WaterShed_SWQA/SWQA_Map.aspx)

How are assessments coded in the report card?

Assessment outcomes are displayed on a color scale as well as an alpha numeric scale that provides additional distinctions for the designated use and parameter level assessments as outlined in the table below.

	Severe	Poor	Likely Bad	No Data	Likely Good	Marginal	Good
	Not Supporting, Severe	Not Supporting, Marginal	Insufficient Information – Potentially Not Supporting	No Data	Insufficient Information – Potentially Full Supporting	Full Support, Marginal	Full Support, Good
CATEGORY	Description						
*Category 2	Meets standards					2-M or 2-OBS	2-G
Category 3	Insufficient Information		3-PNS	3-ND	3-PAS		
Category 4	Does not Meet Standards;						
4A	TMDL^ Completed	4A-P	4A-M or 4A-T				
4B	Other enforceable measure will correct the issue.	4B-P	4B-M or 4B-T				
4C	Non-pollutant (i.e. exotic weeds)	4C-P	4C-M				
Category 5	TMDL^ Needed	5-P	5-M or 5-T				

* “Category 1” only exists at the Assessment Unit Level.

^ TMDL stands for Total Maximum Daily Load studies (<http://des.nh.gov/organization/divisions/water/wmb/tmdl/index.htm>)

WATERSHED 305(b) ASSESSMENT SUMMARY REPORT:

HUC 12 010600031001

HUC 12 NAME PORTSMOUTH HARBOR

Assessment Cycle 2016

Good	Full Support Good
Marginal	Full Support Marginal
Likely Good	Insufficient Information - Potentially Full Support
No Data	No Data
Likely Bad	Insufficient Information - Potentially Not Support
Poor	Not Support Marginal

(Locator map on next page only applies to this HUC12)



ASSESSMENT UNIT ID	MAP LABEL	ASSESSMENT UNIT NAME	AQUATIC LIFE	SWIMMING	BOATING	FISH CONSUMP.
NHEST600031001-01-01		UPPER PISCATAQUA RIVER-NH-NORTH	3-E	3-PAS	3-ND	3-M
NHEST600031001-01-02		DOVER WTF SZ-NH	3-E	3-E	3-E	3-M
NHEST600031001-01-03		UPPER PISCATAQUA RIVER-NH-SOUTH	3-E	3-ND	3-ND	3-M
NHEST600031001-02-01		LOWER PISCATAQUA RIVER - NORTH	3-E	3-PAS	3-ND	3-M
NHEST600031001-02-02		LOWER PISCATAQUA RIVER - SOUTH	3-E	3-E	3-M	3-M
NHEST600031001-03		UPPER SAGAMORE CREEK	3-E	3-E	3-E	3-M
NHEST600031001-04		LOWER SAGAMORE CREEK	3-E	3-M	3-M	3-M
NHEST600031001-05		BACK CHANNEL	3-E	3-ND	3-ND	3-M
NHEST600031001-08		MENTWORTH-BY-THE-SEA	3-E	3-ND	3-ND	3-M
NHEST600031001-09		SOUTH MILL POND	3-ND	3-E	3-E	3-M
NHEST600031001-10		NORTH MILL POND	3-ND	3-E	3-E	3-M
NHEST600031001-11		UPPER PORTSMOUTH HARBOR-NH	3-E	3-E	3-E	3-M
NHIMP600031001-01		UNNAMED BROOK - SAGAMORE CREEK DAM	3-ND	3-ND	3-ND	3-M
NHIMP600031001-02		FIRE POND	3-ND	3-ND	3-ND	3-M
NHLAK600031001-01		UNNAMED POND	3-ND	3-ND	3-ND	3-M
NHLAK600031001-02		UNNAMED POND	3-ND	3-ND	3-ND	3-M
NHRIV600031001-01		PICKERING BROOK - FLAGSTONE BROOK	3-M	3-E	3-E	3-M
NHRIV600031001-02		UNNAMED BROOK - TO PISCATAQUA RIVER	3-ND	3-ND	3-ND	3-M
NHRIV600031001-03		SAGAMORE CREEK	3-M	3-E	3-E	3-M
NHRIV600031001-04		LOWER HODGSON BROOK	3-E	3-E	3-E	3-M
NHRIV600031001-05		UPPER HODGSON BROOK	3-E	3-E	3-E	3-M
NHRIV600031001-06		GRAFTON DITCH	3-M	3-ND	3-ND	3-M
NHRIV600031001-07		PAULS BROOK - PEASE AIR FORCE BASE	3-E	3-E	3-E	3-M
NHRIV600031001-08		RAILWAY BROOK - PEASE AIR FORCE BASE	3-M	3-ND	3-ND	3-M
NHRIV600031001-09		BORTHWICK AVE TRIBUTARY	3-E	3-E	3-E	3-M
NHRIV600031001-10		NEWFILEDS DITCH	3-M	3-E	3-E	3-M
NHRIV600031001-11		UNNAMED BROOK	3-ND	3-ND	3-ND	3-M
NHRIV600031001-12		ELWYN BROOK	3-ND	3-ND	3-ND	3-M

2016, 305(b)/303(d) - All Reviewed Parameters by Assessment Unit

Size 0.4970 SQUARE MILES
Beach N

Assessment Unit ID NHST600031001-02-02
Assessment Unit Name LOWER PISCATAQUA RIVER - SOUTH

Primary Town PORTSMOUTH
Assessment Unit Category: 5-P

Designated Use Description	*Desig. Use Category	Desig. Use Threat	Parameter Name	Parameter Threatened (Y/N)	Last Sample	Last Exceed	Parameter Category*	TMDL Priority	Source Name (Impairments only)
Aquatic Life	5-P		.ALPHA.-ENDOSULFAN (ENDOSULFAN 1)	N	2003	N/A	3-ND		
			.BETA.-ENDOSULFAN (ENDOSULFAN 2)	N	2003	N/A	3-ND		
			2-METHYLNAPHTHALENE	N	2003	2000	3-ND		
			ACENAPHTHENE	N	2003	2003	3-ND		
			ACENAPHTHYLENE	N	2003	2003	3-ND		
			ALUMINUM	N	2003	2003	3-ND		
			AMMONIA (UN-IONIZED)	N	2013	2009	3-PAS		
			ANTHRACENE	N	2003	2003	3-ND		
			ANTIMONY	N	2003	N/A	3-ND		
			ARSENIC	N	2003	2003	3-ND		
			BENZO(A)PYRENE (PAHS)	N	2003	2003	3-ND		
			BENZO(A)ANTHRACENE	N	2003	2003	3-ND		
			BENZO(B)FLUORANTHENE	N	2003	N/A	3-ND		
			BENZO(G,H,I)PERYLENE	N	2003	N/A	3-ND		
			BENZO(K)FLUORANTHENE	N	2003	N/A	3-ND		
			BIPHENYL	N	2003	N/A	3-ND		
			BOD, Biochemical oxygen demand	N			3-PAS		Municipal Point Source Discharges
			CADMIUM	N	2003	2003	3-ND		
			CHRYSENE (C1-C4)	N	2003	2003	3-ND		
			COPPER	N	2003	2003	3-ND		
			Chlorophyll-a		2013	NA	3-PAS		
			DDD	N	2003	2000	3-ND		
			DDE	N	2003	2000	3-ND		
			DDT	N	2003	2000	3-ND		
			DIBENZ(A,H)ANTHRACENE	N	2003	2001	3-ND		
			DIELDRIN	N	2003	N/A	3-ND		
			DISSOLVED OXYGEN SATURATION		2013	NA	2-G		

Severe Insufficient Information - Potentially Full Supporting	Likely Bad Insufficient Information - Potentially Full Supporting	No Data No Data	Likely Good Insufficient Information - Potentially Full Supporting	Marginal Full Support Marginal	Good Full Support Good
---	---	---------------------------	--	--	----------------------------------

*DES Categories; 2-G = Supports Parameter well above criteria, 2-M = Supports Parameter marginally above criteria, 2-OBS = Exceeds WQ criteria but natural therefore not a WQ exceedance, 3-ND = Insufficient Information/No data, 3-PAS= Insufficient Information/Potentially Attaining Standard, 3-PNS= Insufficient Information/Potentially Not Attaining Standard, (4A=Impaired/TMDL Completed, 4B=Impaired/Other Measure will rectify Impairment, 4C=Impaired/Non-Pollutant, 5=Impaired/TMDL needed) M=Marginal Impairment, P=Severe Impairment, T=Threatened (<http://des.nh.gov/organization/divisions/water/wmb/swqa/index.htm>)

2016, 305(b)/303(d) - All Reviewed Parameters by Assessment Unit

Size 0.4970 SQUARE MILES
Beach N

Assessment Unit ID NHEST600031001-02-02
Assessment Unit Name LOWER PISCATAQUA RIVER - SOUTH

Primary Town PORTSMOUTH

Assessment Unit Category: 3-P

Designated Use Description	*Desig. Use Category	Desig. Use Threat	Parameter Name	Parameter Threatened (Y/N)	Last Sample	Last Exceed	Parameter Category*	TMDL Priority	Source Name (Impairments only)
Aquatic Life	3-P		ENDOSULFAN SULFATE	N	2003	N/A	3-ND		
			ENDRIN	N	2003	N/A	3-ND		
			Estuaries Bioassessments	N	2013	MED.	5-P	LOW	Source Unknown
			FLUORANTHENE	N	2003	2003	3-ND		
			FLUORENE	N	2003	2003	3-ND		
			HEXACHLOROBENZENE	N	2003	N/A	3-ND		
			INDENO[1,2,3-CD]PYRENE	N	2003	N/A	3-ND		
			IRON	N	2003	N/A	3-ND		
			LEAD	N	2003	2003	3-ND		
			LINDANE	N	2003	N/A	3-ND		
			Light Attenuation Coefficient		2013	NA	3-PAS		
			MERCURY	N	2003	2003	3-ND		
			NAPHTHALENE	N	2003	2000	3-ND		
			NICKEL	N	2003	2003	3-ND		
			Nitrogen (Total)	N	2013	MED.	3-PNS		
			OXYGEN, DISSOLVED	N	2015	2009	2-G		
			PH	N	2015	1998	2-G		
			PHENANTHRENE	N	2003	2003	3-ND		
			POLYCHLORINATED BIPHENYLS	N	2003	2003	3-ND		
			PYRENE	N	2003	2003	3-ND		
			SILVER	N	2003	2003	3-ND		
			TOXAPHENE	N	2003	N/A	3-ND		
			TRANS-NONACHLOR	N	2003	N/A	3-ND		
			ZINC	N	2003	2003	3-ND		
			ESCHERICHIA COLI	N	2003	N/A	3-ND		
Drinking Water After Adequate Treatment	2-G			N	2010	2010	3-ND		
			FECAL COLIFORM	N	2012	2012	3-PNS		

Severe	Likely Bad	Likely Good	Marginal	Good
Insufficient Information - Potentially Full Supporting	Insufficient Information - Potentially Full Supporting	Insufficient Information - Potentially Full Supporting	Full Support, Marginal	Full Support, Good

*DPS Categories: 2-G = Supports Parameter well above criteria, 2-M = Supports Parameter marginally above criteria, 2-OBS = Exceeds WQ criteria but natural therefore not a WQ exceedence, 3-ND = Insufficient Information/No data, 3-PAS= Insufficient Information/Potentially Attaining Standard, 3-PNS= Insufficient Information/Potentially Not Attaining Standard, (4A=Impaired/TMDL Completed, 4B=Impaired/Other Measure will rectify Impairment, 4C=Impaired/Non-Pollutant, 5=Impaired/TMDL needed) M=Marginal Impairment, P=Severe Impairment, T=Threatened (<http://des.nh.gov/organization/divisions/water/wmb/swqa/index.htm>)

Page 14 of 53
November 30, 2017

2016, 305(b)/303(d) - All Reviewed Parameters by Assessment Unit

Size 0.4970 SQUARE MILES
Beach N

Assessment Unit ID NHES1600031001-02-02
Assessment Unit Name LOWER PISCATAQUA RIVER - SOUTH

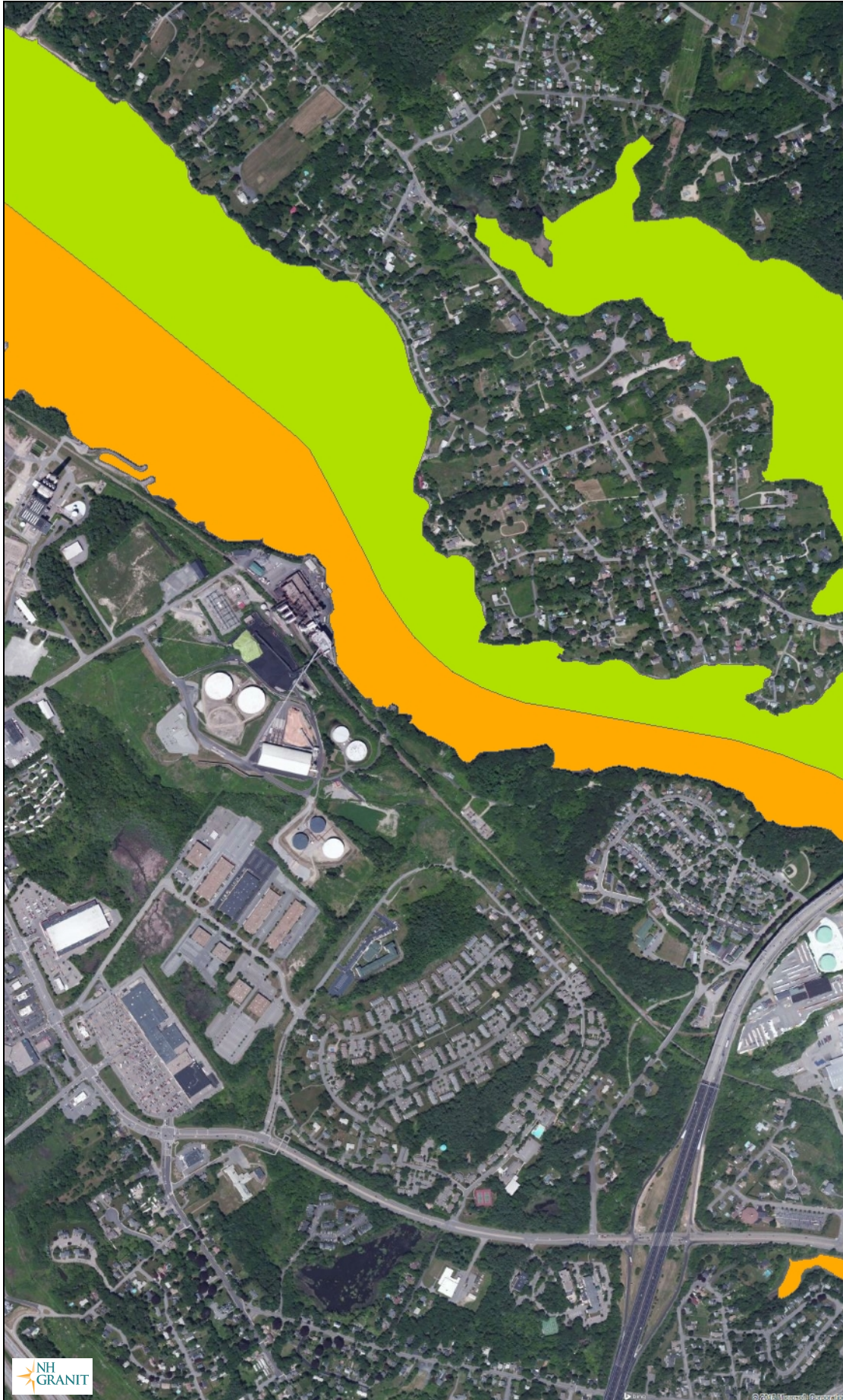
Primary Town PORTSMOUTH
Assessment Unit Category* 5-P

Designated Use Description	*Desig. Use Category	Desig. Use Threat	Parameter Name	Parameter Threatened (Y/N)	Last Sample	Last Exceed	Parameter Category*	TMDL Priority	Source Name (Impairments only)
Fish Consumption	5-M		Mercury	N			5-M	LOW	Atmospheric Deposition - Toxics Source Unknown
Primary Contact Recreation	4A-P		Polychlorinated biphenyls CHLOROPHYLL-A	N	2013	N/A	5-M 3-PAS	LOW	Source Unknown
Secondary Contact Recreation	4A-N		Enterococcus	N	2010	2010	4A-P		Combined Sewer Overflows Source Unknown
Shellfishing	5-M		Dioxin (including 2,3,7,8-TCDF) Fecal Coliform Mercury	N	2010	N/A	4A-M 5-M 3-ND 5-M	LOW	Source Unknown Source Unknown Atmospheric Deposition - Toxics Source Unknown
Wildlife	3-ND		Polychlorinated biphenyls	N			5-M	LOW	Source Unknown

Severe	Likely Bad	No Data	Likely Good	Marginal	Good
(No Support, Marginal)	Insufficient Information - Potentially Full Supporting	No Data	Insufficient Information - Potentially Full Supporting	Full Support, Marginal	Full Support, Good

*DPS Categories: 2-G = Supports Parameter well above criteria, 2-M = Supports Parameter marginally above criteria, 2-OBS = Exceeds WQ criteria but natural therefore not a WQ exceedence, 3-ND = Insufficient Information/No data, 3-PAS= Insufficient Information/Potentially Attaining Standard, 3-PNS= Insufficient Information/Potentially Not Attaining Standard, (4A=Impaired/TMDL Completed, 4B=Impaired/Other Measure will rectify Impairment, 4C=Impaired/Non-Pollutant, 5=Impaired/TMDL needed) M=Marginal Impairment, P=Severe Impairment, T=Threatened (<http://des.nh.gov/organization/divisions/water/wmb/swqa/index.htm>)

Map by NH GRANIT



Legend

Current Shellfish Beds

- Blue Mussel
- Oyster
- Razor Clam
- Softshell Clam
- Surf Clam

Oyster Restoration Sites

- Surf Clams
- Softshell Clams 1985
- Softshell Clams 2006
- Softshell Clams 2008
- Oysters 1982
- Oysters 1985
- Oysters 1997
- Oysters 2001
- Oysters 2003
- Oysters 2004-2006
- Oysters 2005
- Oysters 2006
- Oysters 2008
- Oysters 2012

Shellfish Aquaculture

- American Oyster
- American Oyster, Hard Clam
- American Oyster, Soft Shell Clam
- American Oyster, Soft Shell Clam, I Clam
- American Oyster, Soft Shell Clam, I Clam, European Oyster
- American Oyster, Soft Shell Clam, I Clam, Razor Clam

- Blue Mussel
- Green Urchin
- Steelhead Trout, Blue Mussel

Shellfish Water Classification

- Approved
- Conditionally Approved
- Maine
- Prohibited
- Prohibited/Safety Zone
- Prohibited/Unclassified
- Restricted

Map Scale

1: 12,988

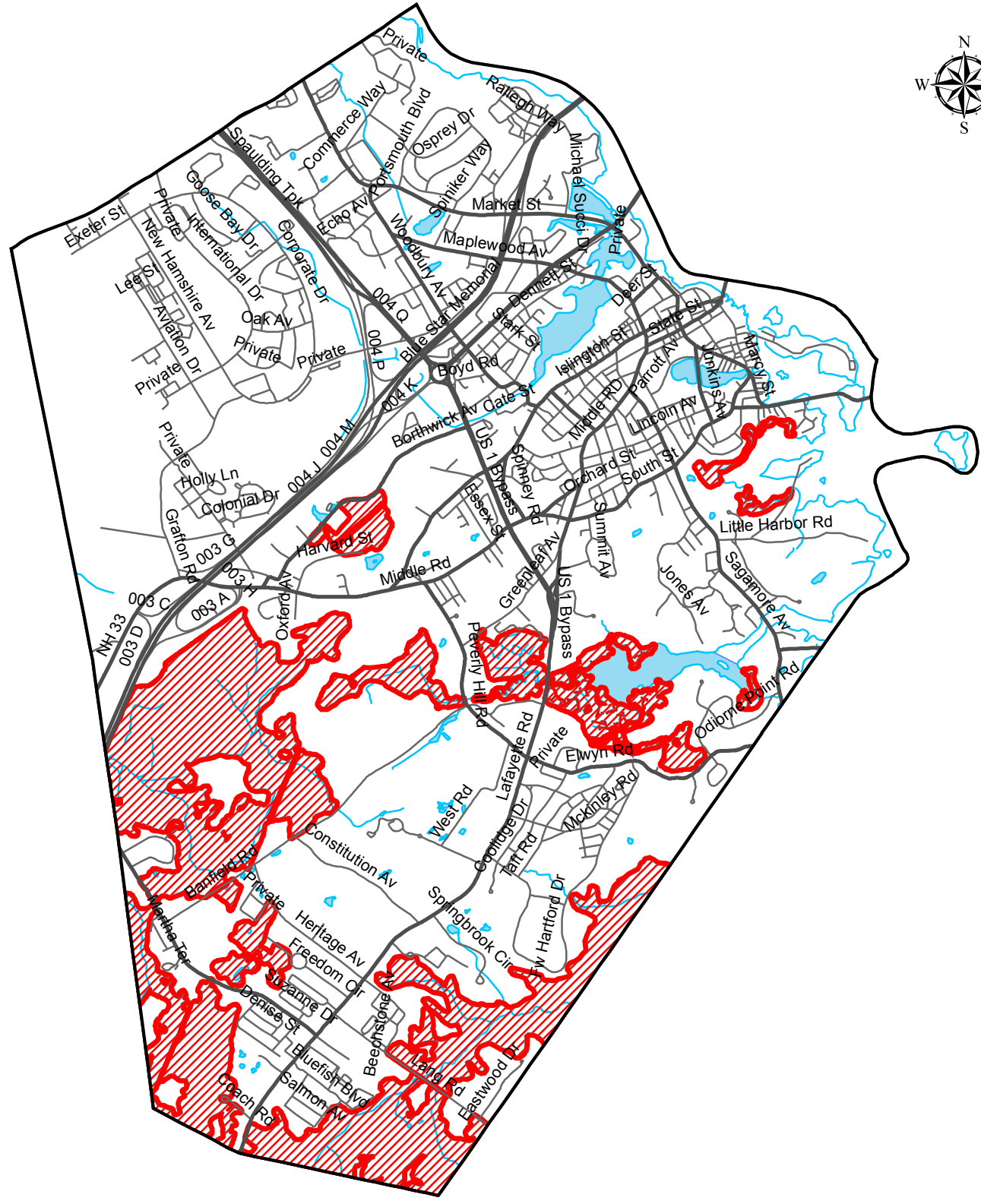


© NH GRANIT, www.granit.unh.edu

Map Generated: 8/31/2018

Notes





- Legend**
- Roads**
 — Town
 — State
- Hydrography**
 Surface Water
- Prime Wetland 100 Foot Buffer**
 NO
 YES
 100 Foot Buffer

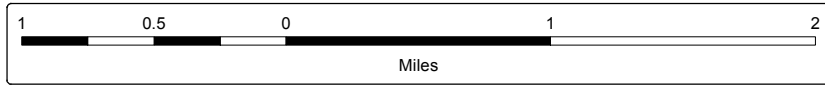
New Hampshire State Plane Coordinate System
 North American Datum 1983 (feet)

Prime Wetlands in Portsmouth, NH

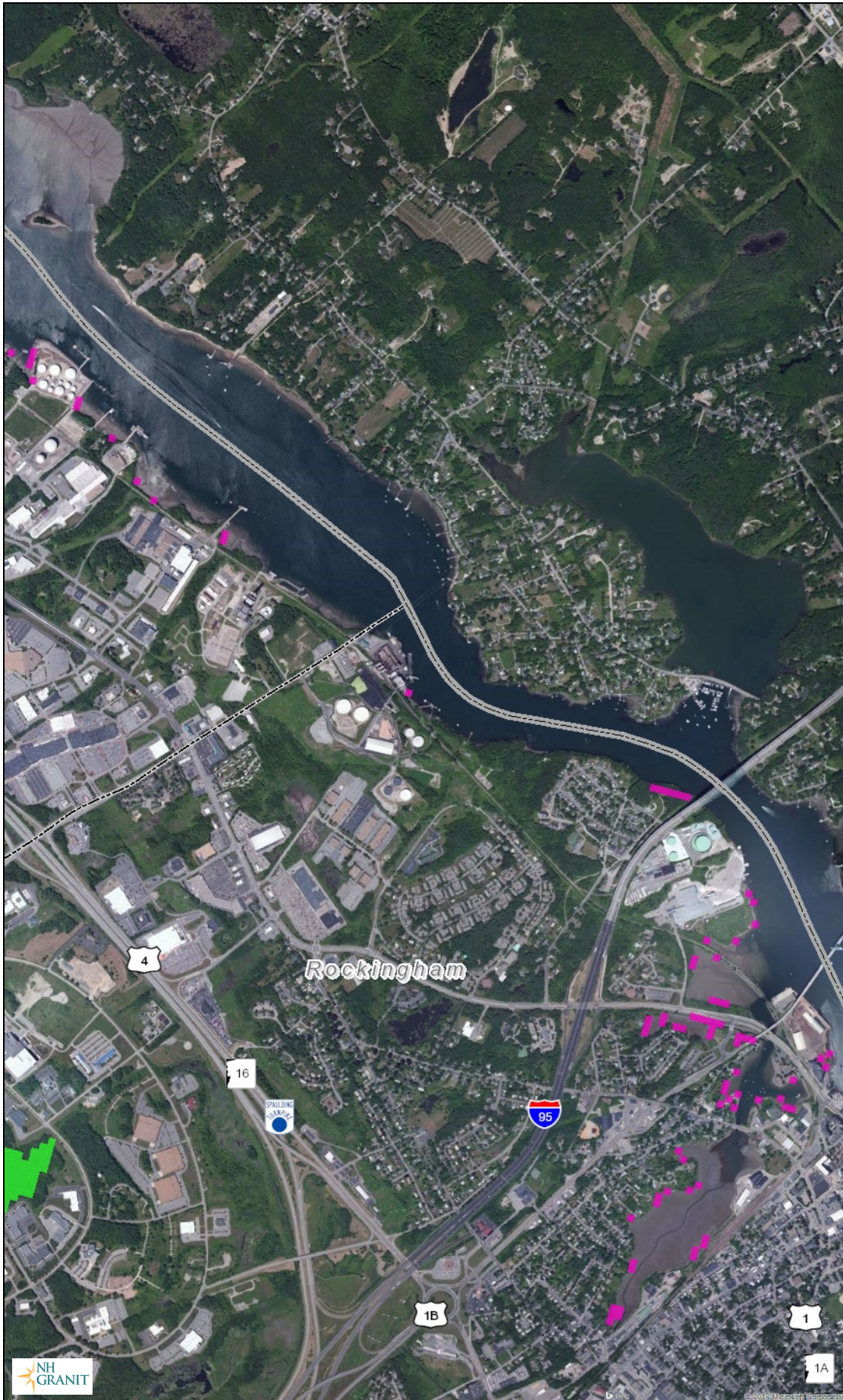
The coverages presented are under constant revision as new sites or facilities are added, and may not contain all potential or existing sites or facilities. These maps were prepared using data supplied by the municipality and the information was digitized to the best of our ability. For prime wetland and prime wetland buffer locations for a specific site, please contact the municipal office where the project is proposed. NHDES is not responsible for the use or interpretation of this information by third parties.

New Hampshire Department of Environmental Services
 Wetlands Bureau
 29 Hazen Drive
 P.O. Box 95
 Concord, NH 03302-0095

DATE PRODUCED
 October, 2012



Map by NH GRANIT



Legend

- State
- County
- City/Town
- WAP 2015: Highest Ranked Wildlife Habitat
 - Not Top Ranked
 - Highest Ranked Habitat in NH
 - Highest Ranked Habitat in Region
 - Supporting Landscape

Map Scale

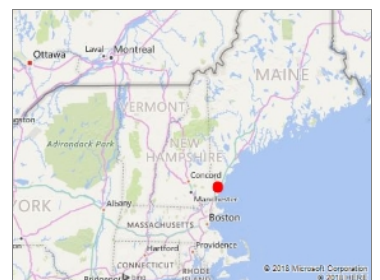
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Map Generated: 8/2/2018



Notes



National Flood Hazard Layer FIRMette



43°53.37'N



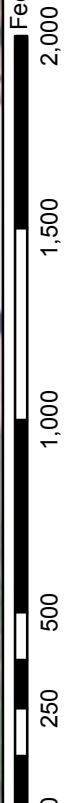
70°47'18.43"W

70°46'40.97"W

USGS The National Map: Orthoimagery. Data refreshed October 2017.

43°53.10'N

Feet 1:6,000



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE)
Zone A, V, A99
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS

- Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS

- Digital Data Available
- No Digital Data Available
- Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/2/2018 at 3:02:13 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

DHR file review

A DHR request for project review (RPR) was conducted via phone with Tanya Krajcik on August 22, 2018. Two properties with historic significance are located within one-half mile of the Project area. The first, Newington Branch Portsmouth and Dover Railroad (ZMT-NBTD) is not eligible for listing in the National Register. The second, Atlantic Heights Development, is listed in the National Register of Historic Places, and has a reference number of 06000869. The Project will not impact these properties.

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Rockingham County, New Hampshire



Local office

New England Ecological Services Field Office

☎ (603) 223-2541

📅 (603) 223-0104

70 Commercial Street, Suite 300
Concord, NH 03301-5094

<http://www.fws.gov/newengland>

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. [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.

The following species are potentially affected by activities in this location:

Mammals

NAME

STATUS

Northern Long-eared Bat *Myotis septentrionalis*
No critical habitat has been designated for this species.
<https://ecos.fws.gov/ecp/species/9045>

Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle *Haliaeetus leucocephalus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

Breeds Oct 15 to Aug 31

Black-billed Cuckoo *Coccyzus erythrophthalmus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9399>

Breeds May 15 to Oct 10

Bobolink *Dolichonyx oryzivorus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 20 to Jul 31

Buff-breasted Sandpiper *Calidris subruficollis*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9488>

Breeds elsewhere

Eastern Whip-poor-will *Antrostomus vociferus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 1 to Aug 20

Least Tern *Sterna antillarum*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Breeds Apr 20 to Sep 10

Lesser Yellowlegs *Tringa flavipes*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9679>

Prairie Warbler *Dendroica discolor*

Breeds May 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Rusty Blackbird *Euphagus carolinus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Short-billed Dowitcher *Limnodromus griseus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9480>

Snowy Owl *Bubo scandiacus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Whimbrel *Numenius phaeopus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9483>

Wood Thrush *Hylocichla mustelina*

Breeds May 10 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

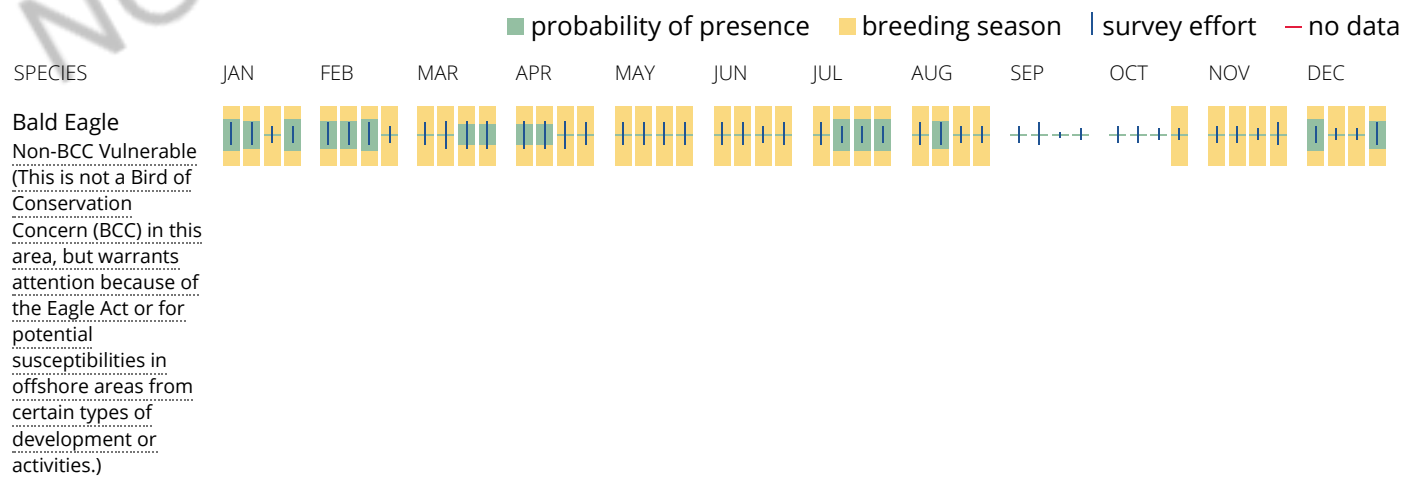
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

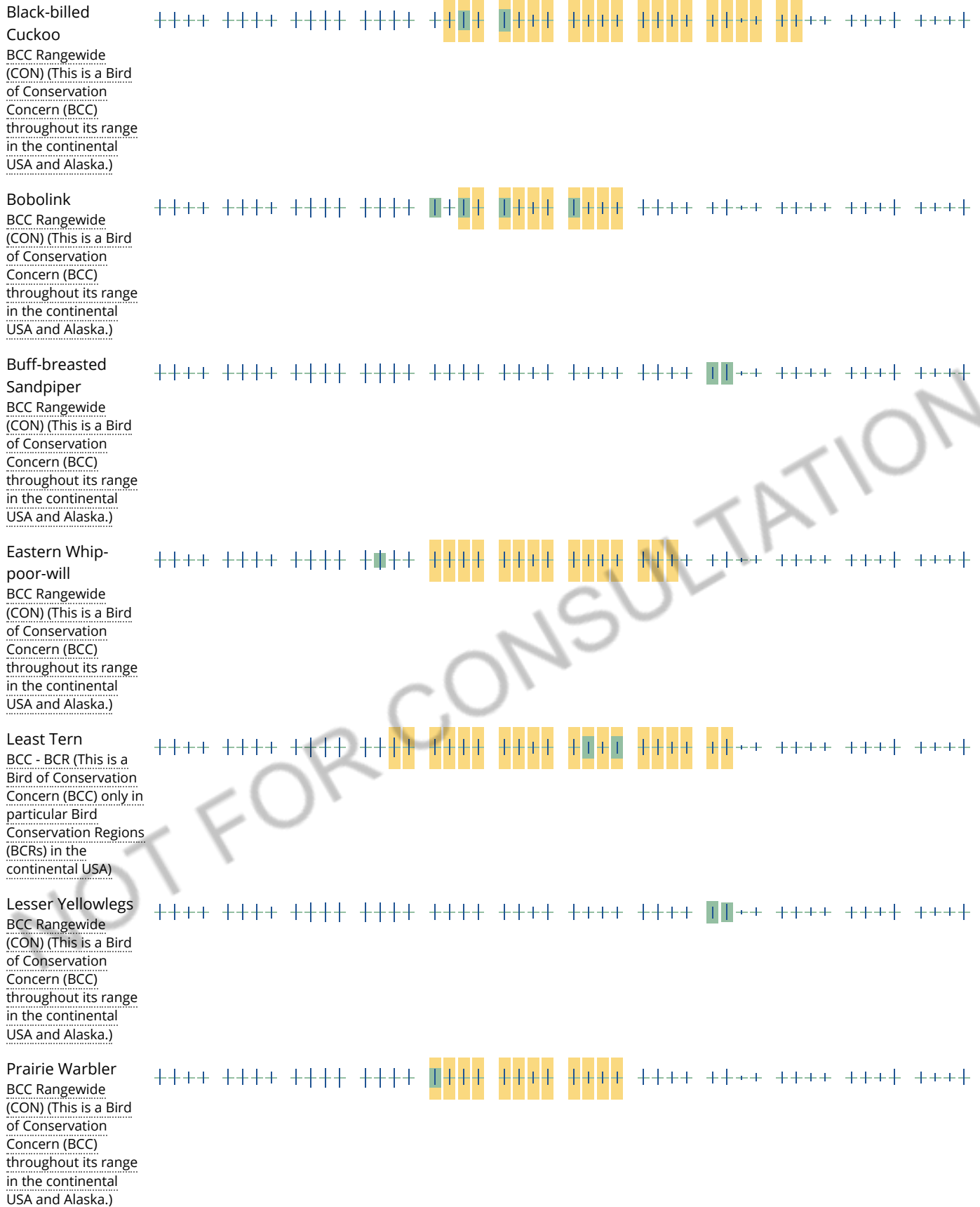
No Data (-)

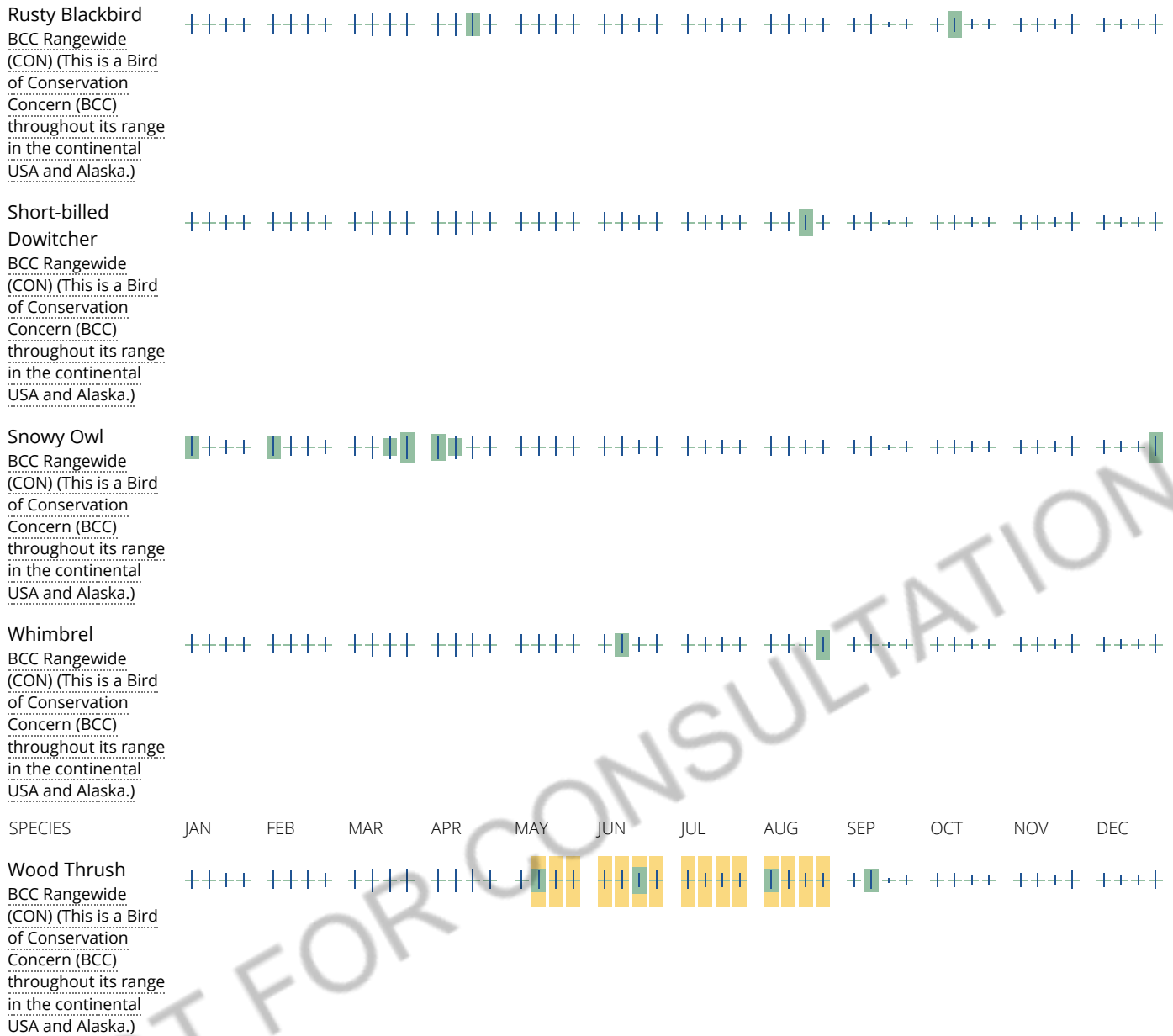
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.







Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project

intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

ESTUARINE AND MARINE DEEPWATER

[E1UBL](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

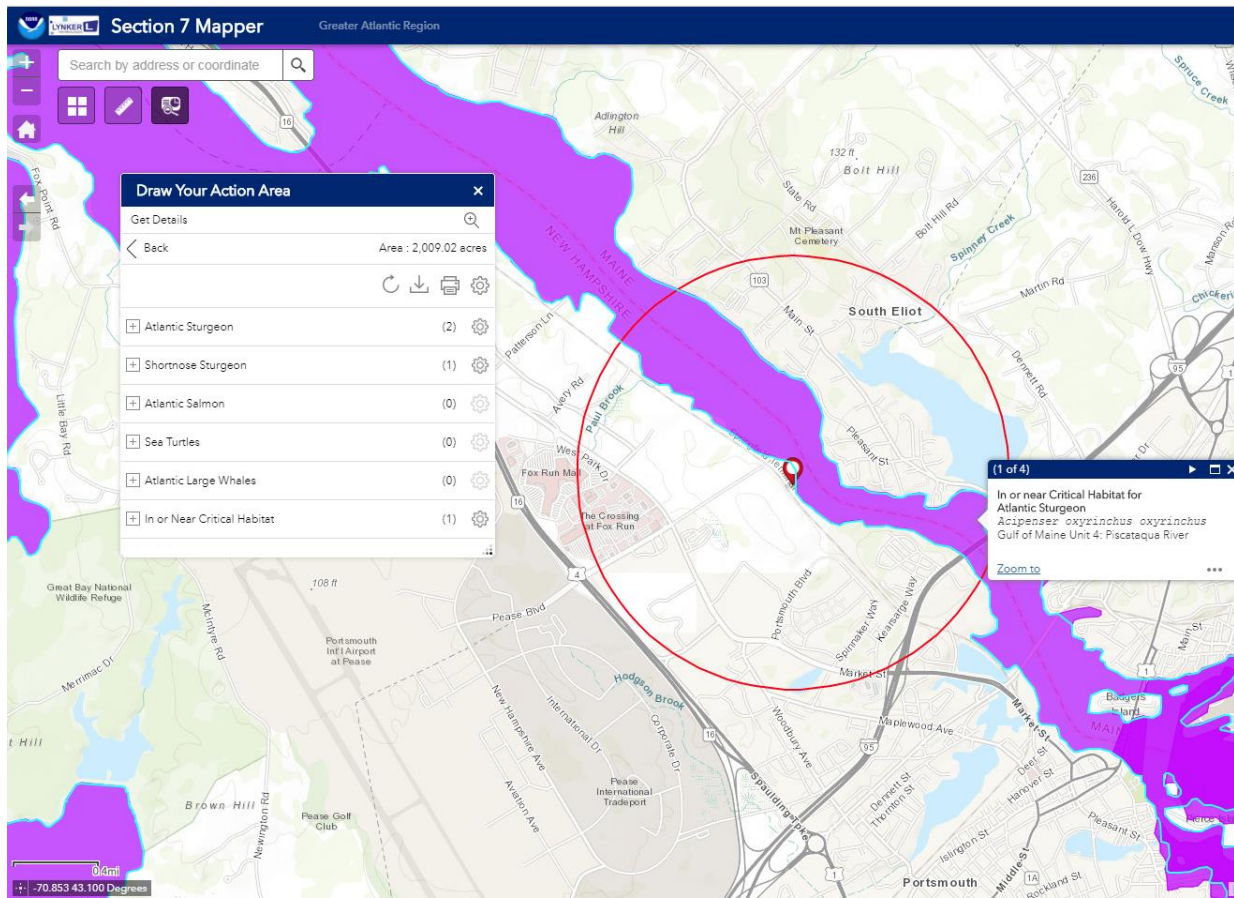
Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

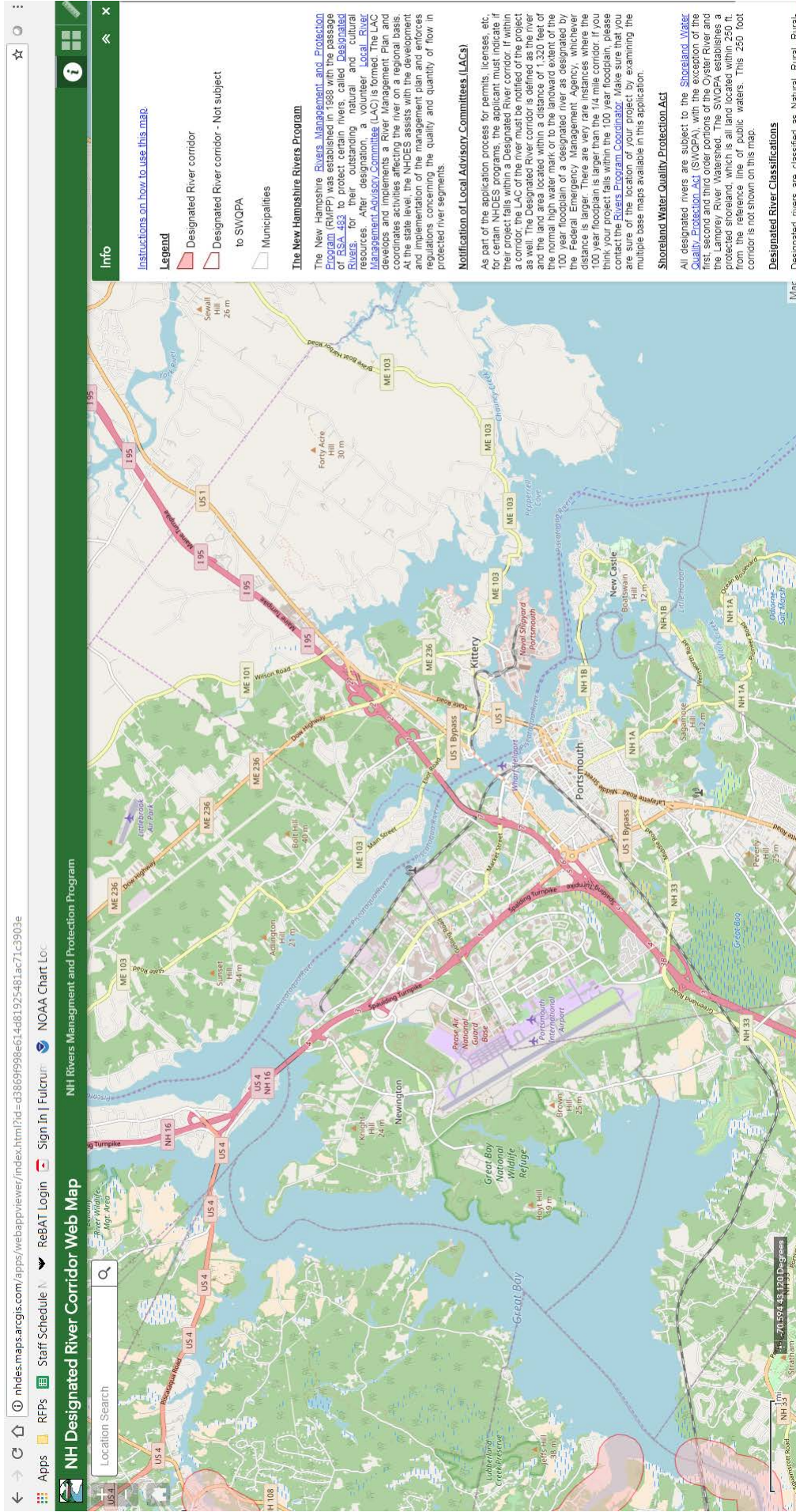
NOAA Section 7 Mapper Results

A review of NOAA protected resources through the online Section 7 Mapper identified two listed species, Shortnose sturgeon (*Acipenser brevirostrum*) and Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*), and one critical habitat near the Project area. Critical habitat listed within one mile of the Project area was identified for Atlantic sturgeon. Atlantic sturgeons are a federally-threatened species. Adult and sub-adult life stages are identified within one mile of the Project area, associated with migrating and foraging behaviors. Shortnose sturgeons are a federally-endangered species. Adult life stages are identified within one mile of the Project area, associated with migrating and foraging behaviors.

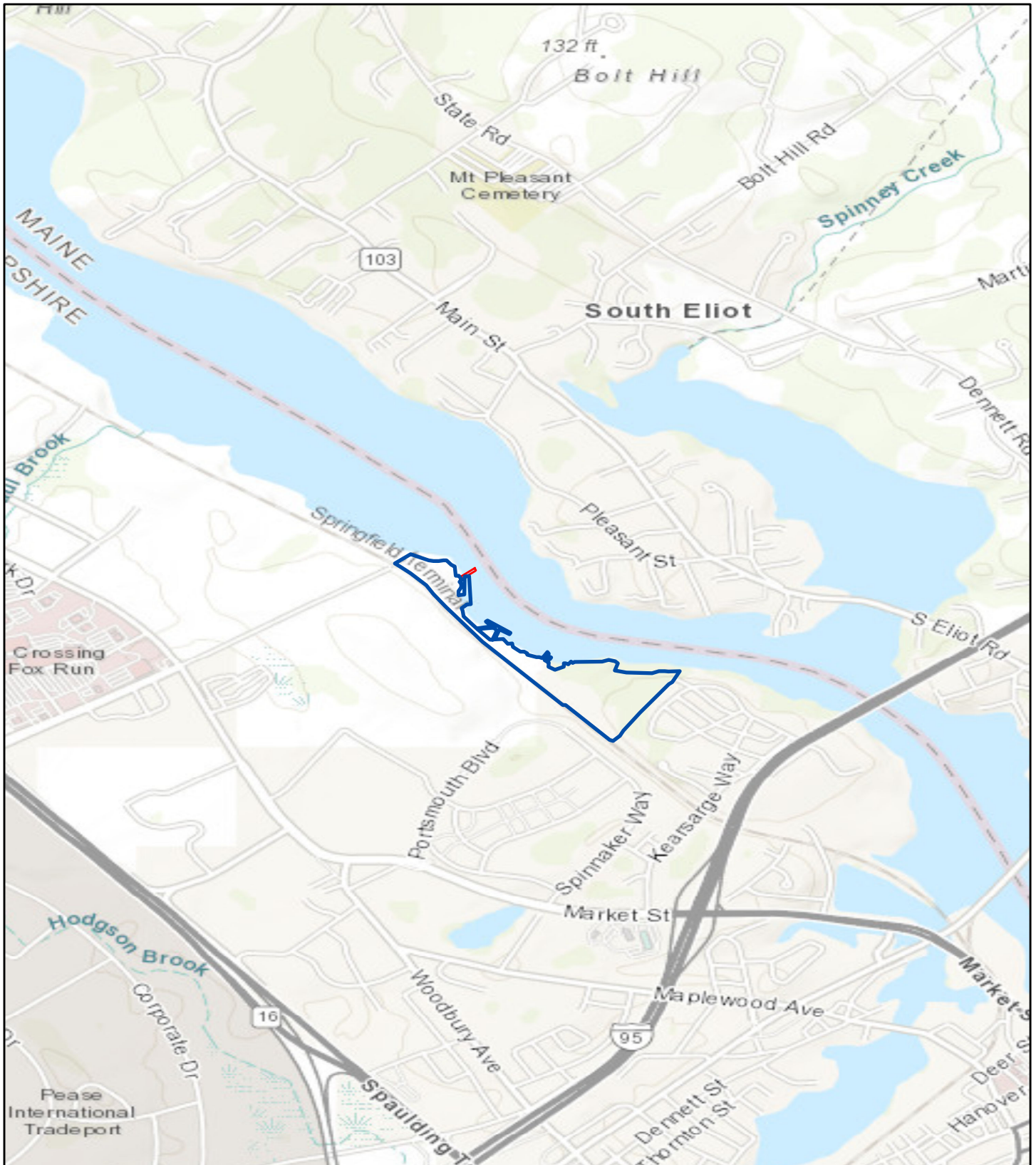


Designated River Check



No Designated Rivers occur within 1/4 mile of the Project area.

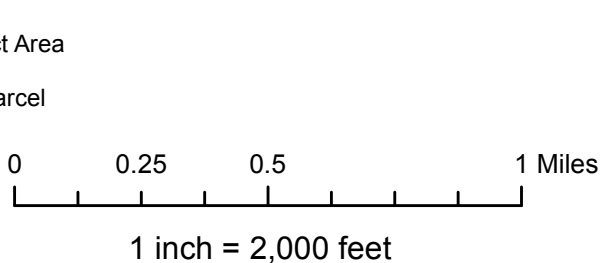


USGS Map



User Name: jobrien
 Project: 22240.072 T7
 Date: 8/8/2018

-  Project Area
-  Tax Parcel



 **NORMANDEAU ASSOCIATES**
 Environmental Consultants

25 Nashua Road
 Bedford, NH
 03110

Photographs

Schiller Station Photo Log - All photos were taken on August 15, 2018 during low tide (0935 EST).



Figure 1. Photo location map, Schiller Station.



Photo 1. View of shoreline and test screen locations, facing east



Photo 2. View of shoreline and test screen locations, facing southeast



Photo 3. View of intakes 4, 5, and 6, facing southeast (intake hoses for test screens will enter at unit 4)



Photo 4. View of units 6, 5, and 4, facing northwest (east of intakes, intake hoses for test screens will enter at unit 4)

Tax Map

Partial Legend

See this cover sheet for the complete legend.

Z-5A Lot or lot/unit number

Z-56 ac Parcel area in acres (ac) or square feet (sf)

Address number

ZP-17 Parcel number from a neighboring map

Parcel line dimension

Street name

SIMS AVE

Parcel/lot boundary

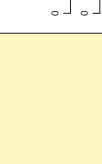
Parcel/ROW boundary

Water boundary

Structure (1984 data)

Parcel covered by this map

Parcel from a neighboring map
(see other map for current status)



This map is for assessment purposes only. It is not intended for legal description or conveyance. Parcels are mapped as of April 1. Building footprints are 2006 data and may not be current. Streets appearing on this map may be paper (urban) streets. Lot numbers like precedents over address numbers. Lot numbers appearing on this map may not represent possessed or legal addresses.

Nearby Tax Maps

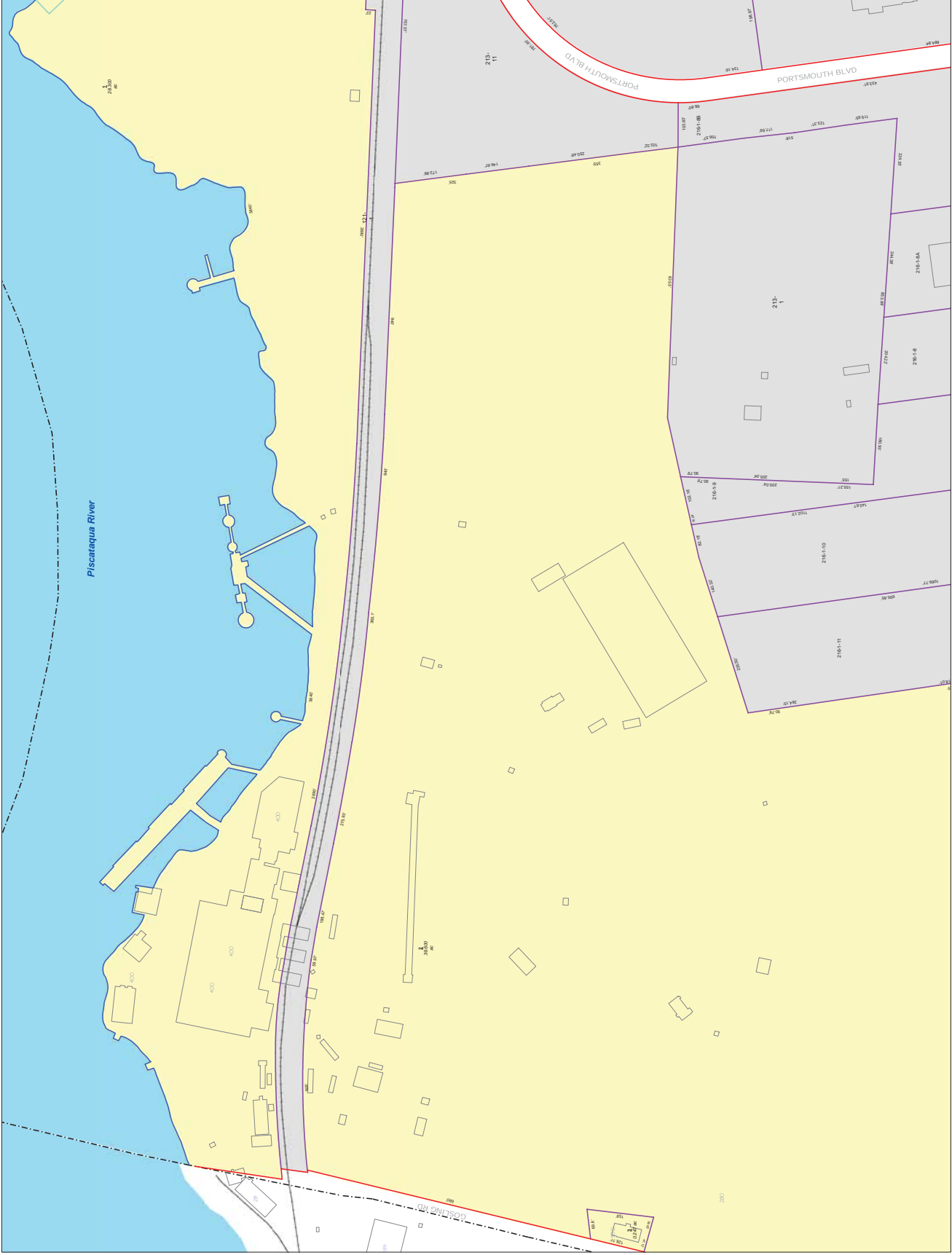


Map Location



Portsmouth, New Hampshire
2017

Tax Map 214



Abutter Notification

Adjacent properties are more than one-quarter mile from the proposed project limits or across a public road. Therefore, no abutter notification is required for this project per *Env-Wt 101.03*.

Project Plans



TEST SCREENS (NOT TO SCALE)
SEE NOTE 2

9" DIAMETER
SUCTION HOSE

PISCATAQUA RIVER

SCHILLER STATION DOCK

WAREHOUSE

SCREEN HOUSE #1
(UNIT 4)

SAMPLING TANKS

PUMP SKIDS

SCREEN HOUSE #2
(UNITS 5 & 6)

CONTROL SAMPLING TANK

Note 3

Note 3

NOTES:

1. THIS DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE. NOT FOR CONSTRUCTION.
2. THE PRELIMINARY SCREEN LOCATIONS ARE BASED ON ACP CURRENT DATA AND WERE SELECTED TO CAPITALIZE ON FAVORABLE CURRENT CONDITIONS. THE SCREENS WILL BE PLACED IN LOCATIONS OF THE TEST SCREENS WILL BE DEPENDANT ON LOCAL RIVER BOTTOM CONDITIONS AND MAY BE BROUGHT IN TO 25 FT AWAY FROM THE SHORE, AS NEEDED.
3. DISCHARGE PIPE ROUTING IS SUGGESTED. FIELD-ROUTE AS NECESSARY TO REACH RIP-RAP AREA.

NO.	INITIAL ISSUE	DESCRIPTION	DATE	BY	APP. DATE
1		GRANITE SHORE POWER, LLC SCHILLER STATION			

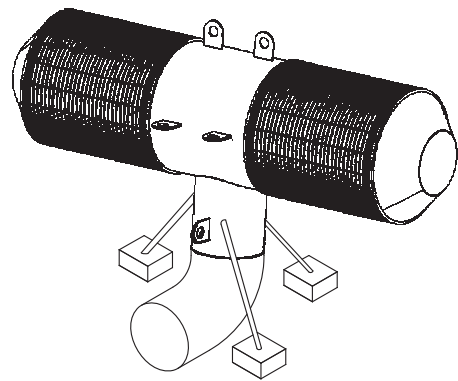
SITE PLAN
WEDGEWIPE SCREEN ASSEMBLIES
(0.8mm SLOT SIZE)

PROJECT NO.:	GSPL-00001-M-003	REV:	0
SCALE:	NONE	SHEET:	1 OF 1

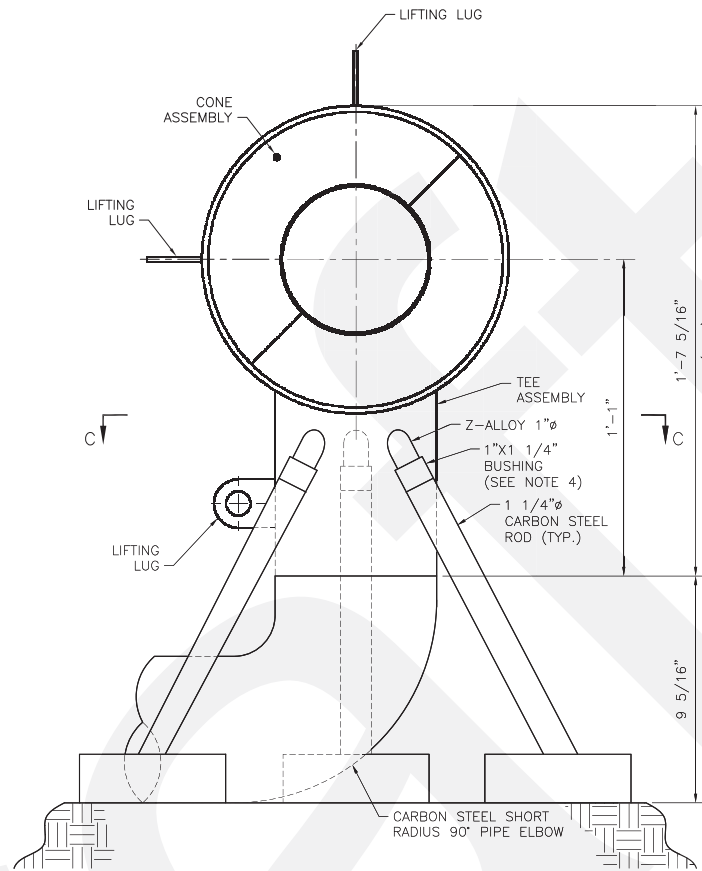
PRELIMINARY

1 2 3 4 5 6 7 8

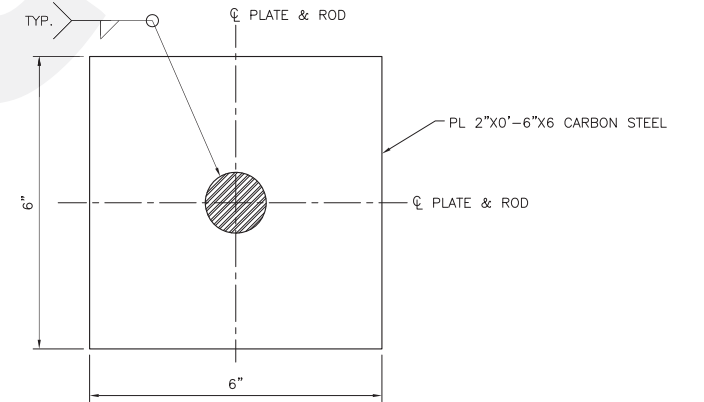
D C B A



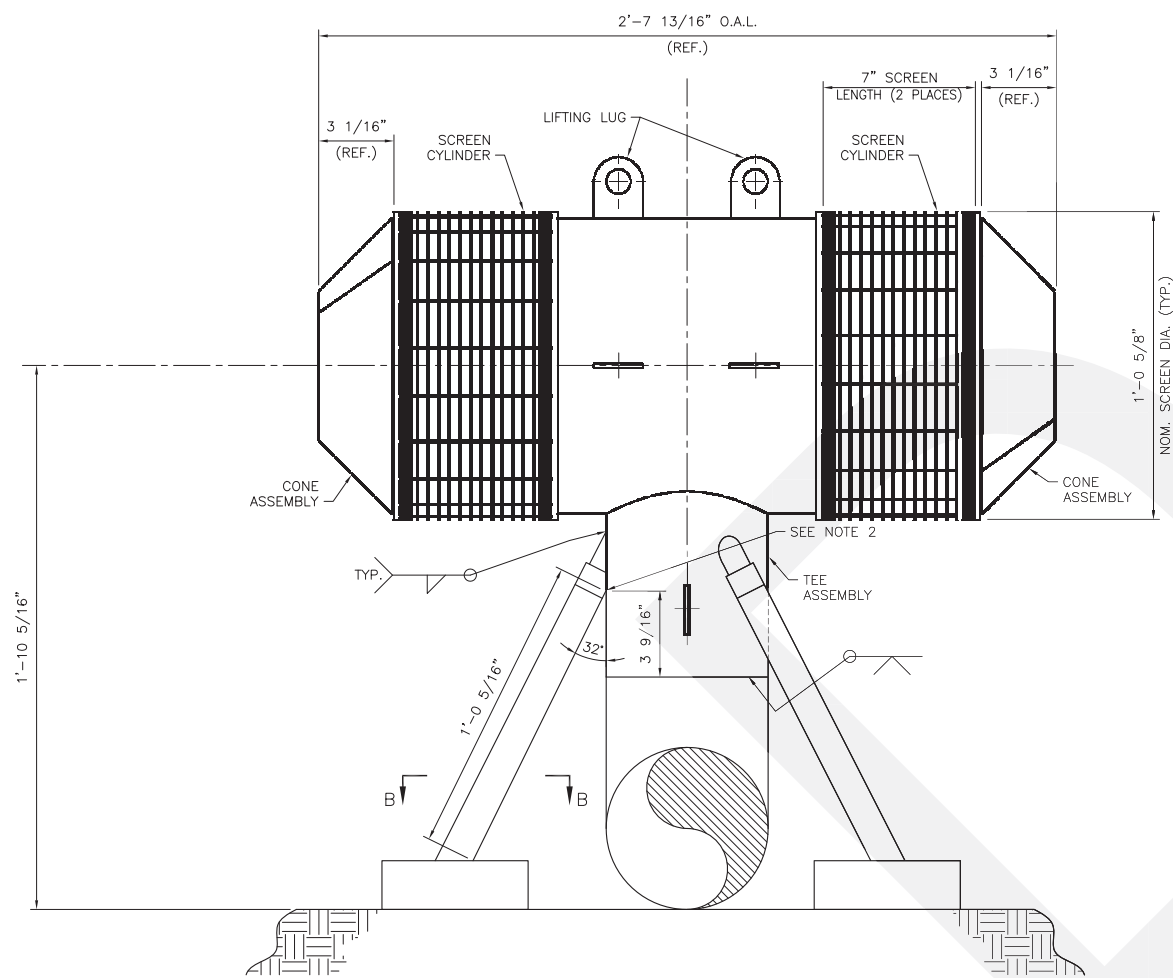
INSTALLATION ORIENTATION



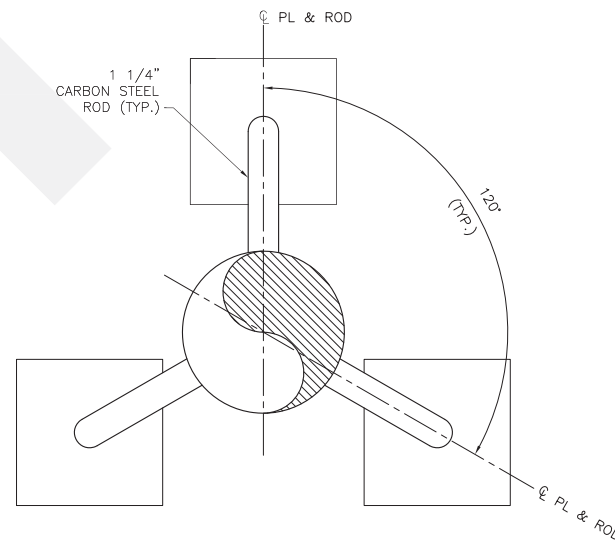
SECTION A-A



SECTION B-B



INTAKE SCREEN ASSEMBLY
(CARBON STEEL SHORT RADIUS 90° PIPE ELBOW)



SECTION C-C
LEG MOUNTING ORIENTATION
(SEE NOTE 3)

NOTES:

1. ALL WELDS SHALL COMPLY WITH AWS D1.6-2007.
2. RODS SHALL BE CUT AT AN ANGLE TO WELD TO THE PIPE ASSEMBLY.
3. THE 3 TRIPOD LEGS SHALL BE WELDED AROUND THE PIPE AND SEPARATED BY 120°.
4. 1"x1 1/4" BUSHINGS SHALL BE INSULATED OR NON-METALLIC.

0	INITIAL ISSUE					
REV	DESCRIPTION	DRN	CHK	REV	APP	DATE
 KENNESAW, GA 30144 GRANITE SHORE POWER LLC SCHILLER STATION 0.8MM WEDGEWIRE SCREEN AND TRIPOD SUPPORT						
SIZE	DWG NO.					REV
D	GSPL-00001-SK-001					0
SCALE	NONE	SHEET				1 of 1