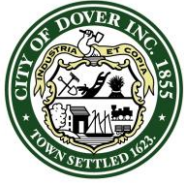


CITY OF DOVER

DOVER CONSERVATION COMMISSION – AGENDA

Meeting Type: Regular Meeting
Meeting Location: City Council Conference Room - 288 Central Avenue Dover NH
Meeting Date: Monday, March 13, 2023
Meeting Time: 5:30 pm

1. CALL TO ORDER AND ROLL CALL
2. CITIZEN'S FORUM
3. APPROVAL OF THE PRIOR MEETING MINUTES – February 13, 2023
4. OLD BUSINESS
5. NEW BUSINESS
 - A. NHDES Standard Dredge and Fill Wetlands Permit Application for Xiao Hui Ye Revocable Trust, (Agent: Cardin Environmental Consulting and Permitting), Assessor's Map L Lot 89-H, zoned R-20, located at 196 A Dover Point Road. Proposal is to maintain and expand the existing 100' pier, gangway and float of a tidal docking structure creating 712 square feet of new permanent impact to tidal wetlands within the previously developed Tidal Buffer Zone.
 - B. Request for Conservation Fund Expenditure
 - 1.) \$300 to support OLC Moth Night Event
6. REPORT FROM THE CHAIR
 - A. Review of Correspondence Received From NH Department of Environmental Services
7. OTHER BUSINESS
 - A. Update from Forest Management Subcommittee
8. ADJOURNMENT



CITY OF DOVER

DOVER CONSERVATION COMMISSION – MINUTES

Meeting Type: Regular Meeting
Meeting Location: First Floor Conference Room - 288 Central Avenue, Dover, NH
Meeting Date: Monday, February 13, 2023
Meeting Time: 5:30 pm

MEMBERS PRESENT: Bill Hunt (Chair), Steve Fellows (Vice Chair), Robert Atwood (Secretary), Amy Kramer-Perry, Kristen Murphy, Abigail Lyon, Bruce Batchelder (Alternate), Jake Geddes (Alternate)

Absent (Excused): None.

STAFF PRESENT: Jackson Kaspari – Resilience Manager

A. Kramer-Perry arrived at 5:38 pm.

1. CALL TO ORDER AND ROLL CALL

The meeting was convened at 5:30 PM.

2. CITIZENS' FORUM: No citizens were present to speak during the forum

3. APPROVAL OF THE PRIOR MEETING MINUTES – January 9, 2023

S. Fellows moved to approve the January 9, 2023 minutes with two minor corrections, A. Lyon seconded. Vote: 4 yes.

4. OLD BUSINESS: None

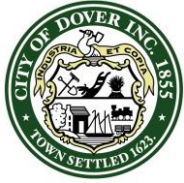
5. NEW BUSINESS:

- A.** City of Dover Conditional Use Permit for Public Service Company of New Hampshire d/b/a Eversource Energy, (Agent: VHB, Inc.), Assessor's Maps H and M, covering various lots within the existing utility transmission ROW, zoned IT and R-40, located east of Freshet Road at the Madbury town line and between west of Overlook Drive and east to Quaker Lane. Proposal is to perform maintenance work on the 307 Transmission Line involving a single utility structure replacement and optical ground wire replacement creating 2,796 square feet of wetland impact and combined 13,471 square feet of temporary impact to wetland buffers and the Conservation District.

Sherrie Trefry from VHB was present to explain the application. Sherrie walked the Commission through each specific temporary impact area and highlighted the corresponding required NHDES permits. The proposed work is part of a much larger project stretching through Massachusetts, New Hampshire and Maine. All proposed impacts are temporary in nature. Matting will be deployed to limit impacts to wetland areas and the timing is such that the vegetation will have the opportunity to rebound during this growing season. The work pads are 100' by 100'. Erosion and sediment control will be placed in the appropriate areas. VHB is in charge of monitoring the ongoing work to ensure environmental compliance.

S. Fellows asked for clarification on the access point for the work near Freshet Rd.

A. Lyon moved to endorse the application. J. Aube seconded. Vote: 7 yes.



CITY OF DOVER

DOVER CONSERVATION COMMISSION – MINUTES

Meeting Type: Regular Meeting
Meeting Location: First Floor Conference Room - 288 Central Avenue, Dover, NH
Meeting Date: Monday, February 13, 2023
Meeting Time: 5:30 pm

- B.** City of Dover Conditional Use Permit for Public Service Company of New Hampshire d/b/a Eversource Energy, (Agent: VHB, Inc.), Assessor's Maps I, M and K covering various lots within the existing utility transmission ROW, zoned CWD, R-40, and R-12 from the Dover Substation off Cocheco Street to the Madbury town line. Proposal is to replace 14 wooden utility poles with weathered steel structures along the M183 Transmission Line creating 15,399 square feet of temporary wetland impact and 30,883 square feet of temporary impact to wetland buffers and the Conservation District.

Sherrie Trefry from VHB was present to explain the application. Sherrie walked the Commission through each specific temporary impact area and highlighted the corresponding required NHDES permits. The same process will be followed as was mentioned for the last agenda item.

J. Aube moved to endorse the application. K. Murphy seconded. Vote: 7 yes.

- C.** NHDES Major Impact Wetland Permit Application for Saddle Trail Drive Home Owners Association (Agent: Ambit Engineering, Inc.) Assessor's Map N Lot 8-1, zoned R-40, located at off Saddle Trail Drive. Proposal is to construct a tidal docking structure consisting of a 4' x 24' accessway, a 4' x 165' fixed wood pier, a 3' x 50' gangway and an 8' x 75' float, totaling 96 square feet of permanent impact to the previously developed Tidal Buffer Zone and 1,410 square feet of permanent impact to tidal wetlands.

Steve Riker from Ambit Engineering, Inc. was present to explain the application. The HOA is seeking to use the set aside lot as part of the subdivision to provide tidal docking access for the members of the HOA. Demonstrated least impacting alternative by showing the extent of the salt marsh on the plan and how the proposed tidal docking structure is oriented to reduce impacts to the salt marsh. Portions of the structure will be prefabricated off site and lowered into place with a crane bar. All of the required coastal assessment info was provided in the application package.

S. Fellows: If you were to remove another section of the gangway to move it further from the channel is the issue that the structure would now be resting on the ground at low tide?

S. Riker: The intent is to provide enough depth at the face of the float so that it stays off the mud and provides sufficient access.

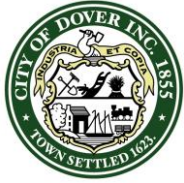
S. Fellows: Could you explain why the previously developed qualifier is being used in this case? What has been done on the shore side?

S. Riker: Nothing has been done. The previously developed category is applied if the two abutting properties are developed.

S. Fellows: How will homeowners access the dock?

S. Riker: On foot via a foot path.

J. Aube: Can you clarify that this is the least impacting alternative because the amount of surface area that is covering the identified salt marsh area?



CITY OF DOVER

DOVER CONSERVATION COMMISSION – MINUTES

Meeting Type: Regular Meeting
Meeting Location: First Floor Conference Room - 288 Central Avenue, Dover, NH
Meeting Date: Monday, February 13, 2023
Meeting Time: 5:30 pm

S. Riker: Yes, that is the case.

Discussion ensued regarding the amount of slips.

A. Kramer-Perry: What are the piles made of and how deep do they go?

S. Riker: The piles are made of CCA treated wood and are driven until refusal. There is a SDS sheet included with the application package.

K. Murphy asked about the other HOA owned parcel closer to Fresh Creek and why access wasn't proposed there.

S. Riker: There is a very small channel in Fresh Creek during low tide which would cause the structure to have to rest on the mud flat. It's not deep enough.

J. Geddes: Do you know what scenario or temperature was used for the sea level rise projections?

S. Riker: I used the UNH based coastal vulnerability assessment. Structures are placed into risk categories which result in an elevation number, in this case 2.9 feet. That gets added to the mean high-water value.

A. Lyon clarified that tidal docking structures are high risk tolerance.

Discussion ensued regarding how the Commission should make a recommendation regarding the application.

S. Fellows moved to endorse the application noting that the Commission strongly encourages NHDES to consider the common HOA dock before granting future individual docking permits for private lots within the HOA. K Murphy seconded. Vote: 7 yes.

6. REPORT FROM THE CHAIR

A. Review of Correspondence Received from NH Department of Environmental Services

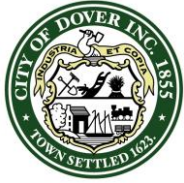
J. Kaspari explained that a potential wetlands violation was investigated on the local level but found no need to enforce action regarding the complaint. A complaint was also filed with NHDES. This correspondence confirms that NHDES also did not find an enforceable violation confirming our local assessment of the matter.

7. OTHER BUSINESS

A. Update from Forest Management Subcommittee

S. Fellows: In terms of the management plan for the parcels near the Tolend Landfill, the lumber market isn't in the state to allow the city to move quickly on a harvest. John Storer was present to discuss plans for the downtown street trees. Community Services has funding set aside for some plantings but has held off due to the aquifer levels as new plantings require significant watering. If the aquifer levels are sufficient in the spring, the goal will be to fill empty tree boxes in the Central Business District.

There was also a discussion on micro-forests.



CITY OF DOVER

DOVER CONSERVATION COMMISSION – MINUTES

Meeting Type: Regular Meeting
Meeting Location: First Floor Conference Room - 288 Central Avenue, Dover, NH
Meeting Date: Monday, February 13, 2023
Meeting Time: **5:30 pm**

J. Kaspari explained the Miyawaki method of planting. The selection of dense plantings can allow the forest to reach maturity in around 30 years which is greatly accelerated from the standard 100 plus year timeframe in a standard forest environment. Yulia Rothenberg had raised the idea of working with the SAU to have students get involved with planting one of these forests on school property.

There could be an opportunity for people in the community to plant pocket forests for credits if a stormwater utility is implemented. It requires about six parking spaces worth of area to be viable.

Some discussion ensued on this topic.

8. ADJOURNMENT

S. Fellows motioned to adjourn. A. Lyon seconded. Vote: 7 yes.

The meeting was adjourned at 6:50 PM.



**STANDARD DREDGE AND FILL
WETLANDS PERMIT APPLICATION**
Water Division/Land Resources Management
Wetlands Bureau



[Check the Status of your Application](#)

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

APPLICANT'S NAME: Xiao Hui Ye Rev. Trust

TOWN NAME: Dover

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

A person may request a waiver of the requirements in Rules Env-Wt 100-900 to accommodate situations where strict adherence to the requirements would not be in the best interest of the public or the environment but is still in compliance with RSA 482-A. A person may also request a waiver of the standards for existing dwellings over water pursuant to RSA 482-A:26, III(b). For more information, please consult the [Waiver Request Form](#).

SECTION 1 - REQUIRED PLANNING FOR ALL PROJECTS (Env-Wt 306.05; RSA 482-A:3, I(d)(2))

Please use the [Wetland Permit Planning Tool \(WPPT\)](#), the Natural Heritage Bureau (NHB) [DataCheck Tool](#), the [Aquatic Restoration Mapper](#), or other sources to assist in identifying key features such as: [priority resource areas \(PRAs\)](#), [protected species or habitats](#), coastal areas, designated rivers, or designated prime wetlands.

Has the required planning been completed?	☒ Yes ☐ No
Does the property contain a PRA? If yes, provide the following information: • Does the project qualify for an Impact Classification Adjustment (e.g. NH Fish and Game Department (NHF&G) and NHB agreement for a classification downgrade) or a Project-Type Exception (e.g. Maintenance or Statutory Permit-by-Notification (SPN) project)? See Env-Wt 407.02 and Env-Wt 407.04. • Protected species or habitat? - o If yes, species or habitat name(s): - o NHB Project ID #: 22-2246 • Bog? • Floodplain wetland contiguous to a tier 3 or higher watercourse? • Designated prime wetland or duly-established 100-foot buffer? • Sand dune, tidal wetland, tidal water, or undeveloped tidal buffer zone?	☒ Yes ☐ No ☐ Yes ☒ No ☐ Yes ☒ No ☐ Yes ☒ No ☐ Yes ☒ No ☒ Yes ☐ No
Is the property within a Designated River corridor? If yes, provide the following information: • Name of Local River Management Advisory Committee (LAC): • A copy of the application was sent to the LAC on Month: Day: Year:	☐ Yes ☒ No

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

For dredging projects, is the subject property contaminated? • If yes, list contaminant:	☐ Yes ☐ No
Is there potential to impact impaired waters, class A waters, or outstanding resource waters?	☒ Yes ☐ No
For stream crossing projects, provide watershed size (see WPPT or Stream Stats): 	
SECTION 2 - PROJECT DESCRIPTION (Env-Wt 311.04(i))	
Provide a brief description of the project and the purpose of the project, outlining the scope of work to be performed and whether impacts are temporary or permanent. DO NOT reply "See attached"; please use the space provided below.	
The application is to maintain and expand the existing 100' pier, gangway and float at 196A Dover Point Road, Dover, NH by installing replacing the first 50 feet (landward) section of pier at a higher elevation to allow for a 1:1 width to height ration, replace the existing 30'x3' gangway way with a 40' x 3' gangway, and replace the 10' x 20' with a 6' x 12' inline float connected to a 8' x 40' float secured by (6) chains and anchors (helical) on the Piscataqua River. The portion of pier to be replaced will be supported by (3) bents containing two piles each. The float will be connected to the pier via the aluminum gangway. The seasonal float system will be supported by six helical anchors and chains extending from each corner of the float. All piles will consist of 12" diameter Class A, CCA treated timber piles. The pier, seasonal gangway and float are to be installed via a barge during low tide cycles and via matted access along proposed dock alignment from the upland in order to install portions that can't be reached by barge staged outside of the salt marsh area. Appropriate erosion controls will be installed on the upland side and turbidity curtains will be installed and maintained through the duration of construction.	
SECTION 3 - PROJECT LOCATION	
Separate wetland permit applications must be submitted for each municipality within which wetland impacts occur.	
ADDRESS: 196A Dover Point Road	
TOWN/CITY: Dover	
TAX MAP/BLOCK/LOT/UNIT: Map L, Lot 89H	
US GEOLOGICAL SURVEY (USGS) TOPO MAP WATERBODY NAME: Piscataqua River ☐ N/A	
(Optional) LATITUDE/LONGITUDE in decimal degrees (to five decimal places): ° North ° West	

SECTION 4 - APPLICANT (DESIRED PERMIT HOLDER) INFORMATION (Env-Wt 311.04(a))

If the applicant is a trust or a company, then complete with the trust or company information.

NAME: Xiao Hui Ye Revocable Trust

MAILING ADDRESS: 196 A Dover Point Road

TOWN/CITY: Dover

STATE: NH

ZIP CODE: 03820

EMAIL ADDRESS: Jessocayereo@gmail.com

FAX:

PHONE: 617-839-6719

ELECTRONIC COMMUNICATION: By initialing here: YXH, I hereby authorize NHDES to communicate all matters relative to this application electronically.

SECTION 5 - AUTHORIZED AGENT INFORMATION (Env-Wt 311.04(c))☐ N/A

LAST NAME, FIRST NAME, M.I.: Cardin, Matthew R

COMPANY NAME: Cardin Environmental Consulting and Permitting

MAILING ADDRESS: 30 Old Post Road

TOWN/CITY: Newington

STATE: NH

ZIP CODE: 03801

EMAIL ADDRESS: matt@cardinenvironmental.com

FAX:

PHONE: 603-988-6635

ELECTRONIC COMMUNICATION: By initialing here MRC, I hereby authorize NHDES to communicate all matters relative to this application electronically.

SECTION 6 - PROPERTY OWNER INFORMATION (IF DIFFERENT THAN APPLICANT) (Env-Wt 311.04(b))

If the owner is a trust or a company, then complete with the trust or company information.

☒ Same as applicant

NAME:

MAILING ADDRESS:

TOWN/CITY:

STATE:

ZIP CODE:

EMAIL ADDRESS:

FAX:

PHONE:

ELECTRONIC COMMUNICATION: By initialing here , I hereby authorize NHDES to communicate all matters relative to this application electronically.

SECTION 7 - RESOURCE-SPECIFIC CRITERIA ESTABLISHED IN Env-Wt 400, Env-Wt 500, Env-Wt 600, Env-Wt 700, OR Env-Wt 900 HAVE BEEN MET (Env-Wt 313.01(a)(3))

Describe how the resource-specific criteria have been met for each chapter listed above (please attach information about stream crossings, coastal resources, prime wetlands, or non-tidal wetlands and surface waters):

Please see attached narrative that includes Avoidance and Minimization Checklist, Coastal Functional Assessment, a Vulnerability Assessment, methods to protect and minimize impacts to natural resources during and as a result of constructing the project and design criteria, water depths, statement regarding impact to navigation and passage and appropriate data screening figures.

SECTION 8 - AVOIDANCE AND MINIMIZATION

Impacts within wetland jurisdiction must be avoided to the maximum extent practicable (Env-Wt 313.03(a)).* Any project with unavoidable jurisdictional impacts must then be minimized as described in the [Wetlands Best Management Practice Techniques For Avoidance and Minimization](#) and the [Wetlands Permitting: Avoidance, Minimization and Mitigation Fact Sheet](#). For minor or major projects, a functional assessment of all wetlands on the project site is required (Env-Wt 311.03(b)(10)).*

Please refer to the application checklist to ensure you have attached all documents related to avoidance and minimization, as well as functional assessment (where applicable). Use the [Avoidance and Minimization Checklist](#), the [Avoidance and Minimization Narrative](#), or your own avoidance and minimization narrative.

**See Env-Wt 311.03(b)(6) and Env-Wt 311.03(b)(10) for shoreline structure exemptions.*

SECTION 9 - MITIGATION REQUIREMENT (Env-Wt 311.02)

If unavoidable jurisdictional impacts require mitigation, a mitigation [pre-application meeting](#) must occur at least 30 days but not more than 90 days prior to submitting this Standard Dredge and Fill Permit Application.

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

☒ N/A - Mitigation is not required

SECTION 10 - THE PROJECT MEETS COMPENSATORY MITIGATION REQUIREMENTS (Env-Wt 313.01(a)(1)c)

Confirm that you have submitted a compensatory mitigation proposal that meets the requirements of Env-Wt 800 for all permanent unavoidable impacts that will remain after avoidance and minimization techniques have been exercised to the maximum extent practicable: ☐ I confirm submittal.

☒ N/A – Compensatory mitigation is not required

SECTION 11 - IMPACT AREA (Env-Wt 311.04(g))

For each jurisdictional area that will be/has been impacted, provide square feet (SF) and, if applicable, linear feet (LF) of impact, and note whether the impact is after-the-fact (ATF; i.e., work was started or completed without a permit).

For intermittent and ephemeral streams, the linear footage of impact is measured along the thread of the channel. *Please note, installation of a stream crossing in an ephemeral stream may be undertaken without a permit per Rule Env-Wt 309.02(d), however other dredge or fill impacts should be included below.*

For perennial streams/ivers, the linear footage of impact is calculated by summing the lengths of disturbances to the channel and banks.

Permanent impacts are impacts that will remain after the project is complete (e.g., changes in grade or surface materials).

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

JURISDICTIONAL AREA		PERMANENT			TEMPORARY		
		SF	LF	ATF	SF	LF	ATF
Wetlands	Forested Wetland			☐			☐
	Scrub-shrub Wetland			☐			☐
	Emergent Wetland			☐			☐
	Wet Meadow			☐			☐
	Vernal Pool			☐			☐
	Designated Prime Wetland			☐			☐
	Duly-established 100-foot Prime Wetland Buffer			☐			☐
Surface Water	Intermittent / Ephemeral Stream			☐			☐
	Perennial Stream or River			☐			☐
	Lake / Pond			☐			☐
	Docking - Lake / Pond			☐			☐
	Docking - River			☐			☐
Banks	Bank - Intermittent Stream			☐			☐
	Bank - Perennial Stream / River			☐			☐
	Bank / Shoreline - Lake / Pond			☐			☐
Tidal	Tidal Waters			☐			☐
	Tidal Marsh	214		☐			☐
	Sand Dune			☐			☐
	Undeveloped Tidal Buffer Zone (TBZ)			☐			☐
	Previously-developed TBZ			☐			☐
	Docking - Tidal Water	712		☐			☐
TOTAL		926					

SECTION 12 - APPLICATION FEE (RSA 482-A:3, I)

☐ **MINIMUM IMPACT FEE:** Flat fee of \$400.

☐ **NON-ENFORCEMENT RELATED, PUBLICLY-FUNDED AND SUPERVISED RESTORATION PROJECTS, REGARDLESS OF IMPACT CLASSIFICATION:** Flat fee of \$400 (refer to RSA 482-A:3, 1(c) for restrictions).

☒ **MINOR OR MAJOR IMPACT FEE:** Calculate using the table below:

Permanent and temporary (non-docking):	214 SF	×	\$0.40 =	\$ 85.6
Seasonal docking structure:	512 SF	×	\$2.00 =	\$ 1,024
Permanent docking structure:	200 SF	×	\$4.00 =	\$ 800
Projects proposing shoreline structures (including docks) add \$400 =				\$ 400
Total =				\$ 2,309.6

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

The application fee for minor or major impact is the above calculated total or \$400, whichever is greater = \$ 2,309.6

SECTION 13 - PROJECT CLASSIFICATION (Env-Wt 306.05)

Indicate the project classification.

☐ Minimum Impact Project

☐ Minor Project

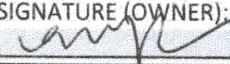
☒ Major Project

SECTION 14 - REQUIRED CERTIFICATIONS (Env-Wt 311.11)

Initial each box below to certify:

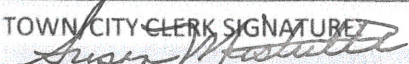
Initials: MRC 	To the best of the signer's knowledge and belief, all required notifications have been provided.
Initials: MRC 	The information submitted on or with the application is true, complete, and not misleading to the best of the signer's knowledge and belief.
Initials: MRC 	The signer understands that: - The submission of false, incomplete, or misleading information constitutes grounds for NHDES to: - Deny the application. - Revoke any approval that is granted based on the information. - If the signer is a certified wetland scientist, licensed surveyor, or professional engineer licensed to practice in New Hampshire, refer the matter to the joint board of licensure and certification established by RSA 310-A:1. - The signer is subject to the penalties specified in New Hampshire law for falsification in official matters, currently RSA 641. - The signature shall constitute authorization for the municipal conservation commission and the Department to inspect the site of the proposed project, except for minimum impact forestry SPN projects and minimum impact trail projects, where the signature shall authorize only the Department to inspect the site pursuant to RSA 482-A:6, II.
Initials: MRC 	If the applicant is not the owner of the property, each property owner signature shall constitute certification by the signer that he or she is aware of the application being filed and does not object to the filing.

SECTION 15 - REQUIRED SIGNATURES (Env-Wt 311.04(d); Env-Wt 311.11)

SIGNATURE (OWNER): 	PRINT NAME LEGIBLY: Xiao Hui Ye, trustee for Xiao Hui Ye Revocable trust	DATE: 1/23/2023
SIGNATURE (APPLICANT, IF DIFFERENT FROM OWNER): 	PRINT NAME LEGIBLY: Matt Cardin, CWS	DATE: 2/20/23

SECTION 16 - TOWN / CITY CLERK SIGNATURE (Env-Wt 311.04(f))

As required by RSA 482-A:3, I(a)(1), 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: Susan Mistrivetty
---	--

TOWN/CITY:	DATE:
---------------------------------	----------------------------

DIRECTIONS FOR TOWN/CITY CLERK:

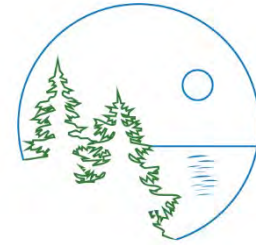
Per RSA 482-A:3, I(a)(1)

1. IMMEDIATELY sign the original application form and four copies in the signature space provided above.
2. 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.
3. 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.
4. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

Submit the 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 at the address at the bottom of this page. Make check or money order payable to "Treasurer – State of NH".

February 21, 2023



Wetland Inspection
New Hampshire Department of Environmental Services
Wetlands Bureau
29 Hazen Drive – P.O. Box 95
Concord, New Hampshire 03302

**Re: NHDES Major Impact Wetland Permit Application
Tax Map L89, Lot H0
196A Dover Point Road
Dover, New Hampshire**

Dear Wetland Inspector,

Enclosed with this letter is a New Hampshire Department of Environmental Services (NHDES) Major Impact Wetland Permit Application for a proposed partial tidal docking structure replacement and extension that includes a request to rebuild the landward 50' section of the existing pier, replace the existing 3' x 30' gangway with a 3' x 40' gangway, and replace the existing 10' x 20' float secured with (4) float anchors with a 6' x 12' inline float connected to a perpendicular 8' x 40' float secured with (6) float anchors, requiring a total of 712 sq. ft. of new permanent impact to tidal wetlands¹. The existing tidal docking structure section to be replaced (first 50' section of pier) will be replaced approximately 2 feet higher to meet relative sea level rise (RSLR) requirements. Due to the extension of gangway and float system, the overall tidal docking structure will increase from 134' overall length to 156' overall length and will provide two slips on 210' +/- of frontage along the Piscataqua River.

Per Env-Wt 306.05, Matthew Cardin, CWS (License No. 284) classified all jurisdictional areas and identified the predominant functions off all jurisdictional and managed natural resources. The Highest Observable Tide Line delineates the boundary between tidal wetlands and the previously developed 100 TBZ, of which is shown on the attached plan set. Also attached to this application is a Wetlands Functions and Values Assessment and a Coastal Vulnerability Assessment summarizing these functions per the requirements of Env-Wt 603.04 and Env-Wt 603.05.

The proposed structure consists of a permanent pier supported by (8) sets of piles, (4) of which are proposed for replacement in conjunction with the replacement of the landward 50-foot section of pier. A seasonal aluminum gangway and seasonal float will extend from the end of the permanent pier. The seasonal float will be secured by (6) helical anchors and chains extending from each corner of the float. The gangway and the float will be temporary structures and will be removed during winter months as to not incur any unnecessary impacts or damage from ice or weather when use is not anticipated. The permanent pier will be 4' wide for the entire length and will meet a 1:1 ratio from ground to structure height at the highest observable tide line (HOTL).

The proposed docking structure will have no impact on the functions and values of the adjacent tidal wetland or the 100' TBZ. It's anticipated that current functions and values will not be impacted by the proposed tidal dock structure and that current functions and values will be maintained as a result. The dock structure will not contribute to additional storm water or pollution. Per Natural Heritage Bureau (NHB) and NH Fish and Game (NHFG) correspondence, it's recommended that the project be constructed during

¹ The impacts in the DES application does not include the seaward 50-foot section of dock, which is to remain as-is.

dry conditions and that best management practices be implemented. The project will be constructed only during dry periods of the tide cycle, utilize matting for any equipment access from the upland and utilizing a turbidity curtain close to the construction area to minimize turbidity in the water column.

The purpose of the proposed dock structure is to provide recreational boating access utilizing the tidal buffer zone as access point. There will be no earth disturbance or grading required associated with the proposed docking structure. The majority of work will be performed from a crane barge during periods of low tide. Piles closer to the HOTL will be installed via low impact equipment over timber mats within the proposed alignment. All piles will be driven during ebb tides where water is low or not present within the disturbance area. Additionally, a turbidity curtain will be installed prior to construction to contain and isolate turbidity to the immediate work area, therefore only temporary disturbance within the containment area of the turbidity curtain is expected. Piles will be driven using a vibratory hammer positioned on the work barge. Working from a barge eliminates the need for additional temporary fill or machinery directly within the protected resource areas. The float, and gangway components of the dock structure will be prefabricated and transported and installed via a crane barge.

The construction sequence for the proposed structure are as follows:

- Mobilize crane barge, push boat and work skiff containing prefabricated components (float, gangway) and materials (piles, associated timber and hardware) to the site during high-tide.
 - The barge will be positioned alongside the proposed location of the float and close enough to land where navigability won't be affected. There is no emergent or saltmarsh vegetation within the temporary workspace area.
- All work is to be done during low-tide intervals where there is little to no flowing water within the work area. A temporary turbidity curtain will be placed for the duration of construction to contain suspended solids during periods of inundation once construction has temporarily stopped.
- Piles will be mechanically impact or vibratory driven by crane to a depth of refusal or approximately 10'. There will be no excavation required as part of this project. Little to no foot traffic will be required to drive piles.
- The float and gangway to be fabricated off-site and mobilized to the site via barge.
- The float and gangway will be lifted from the barge via crane and placed into position and installed.
- Upon complete installation, the turbidity curtain will be removed.

This project represents the least impacting alternative with the least adverse impacts to the environment and nearby resources while allowing reasonable use of the property.

Per Env-Wt 603.02(b), you will find a plan set that depicts existing lot information, jurisdictional areas, and all-natural resources in the area to be impacted, abutting parcels, existing structures, and proposed structure and impact areas. In addition, maps are provided with data screening information in accordance with Env-Wt 603.03 and Env-Wt 603.04.

Per the requirements in Env-Wt 306.05 (a)(2), the following provides a determination whether the subject property is or contains a priority resource area:

2a. Contains any documented occurrences of protected species or habitat for such species, using the DataCheck tool;

Attached to this application are the results of the Natural Heritage Bureau (NHB) review. The NHB data check indicated one natural community being: Engelmann's quillwort (*Isoetes engelmannii*), smooth black sedge (*Carex nigra*), and two vertebrate species being: Atlantic Sturgeon (*Acipenser oxyrinchus*), and Shortnose Sturgeon

(Acipenser brevirostrum). As a result of consultations with NHB, a rare plant species survey was conducted by a qualified botanist and determined the species listed or other rare species do not occur within the project area (see NHB Consultation). NHFG Marine Division consultation resulted in conducting all work during dry conditions and utilizing BMP's. A turbidity curtain will be utilized and maintained during construction, construction will be done during dry conditions, and temporary matting for equipment access within wetland areas. Please refer to NHB22-2256 and subsequent consultations with NHB and NHFG enclosed. All mitigation factors requested have been incorporated into the proposed dock design.

2b. *Is a bog;*

Utilizing the NHDES Wetland Permitting Planning Tool (WPPT), the subject is not a bog nor does it contain any portion of a bog.

2c. *Is a floodplain wetland contiguous to a tier 3 or higher watercourse;*

Utilizing the NHDES Wetland Permitting Planning Tool (WPPT), the subject property does not contain a floodplain wetland contiguous to a tier 3 or higher watercourse.

2d. *Does the property contain a designated prime wetlands or a duly established 100-foot buffer;*

The property does not contain a prime wetland or duly established 100-foot buffer.

2e. *Does the property contain a sand dune, tidal wetland, tidal water, or undeveloped tidal buffer zone;*

The property contains a tidal wetland and tidal waters. The property does contain a undeveloped tidal buffer zone.

The following evaluates and addresses DES Wetlands Bureau rules in Chapter Env-Wt 306.05 (a)(4) and (a)(7);

4a. *Is the subject property within LAC jurisdiction;*

The property does not occur within a LAC jurisdictional area.

4b. *Does the subject property fall within or contain any areas that are subject to time of year restriction under Env-Wt 307;*

The project as proposed does not require a time of year restriction.

4c. *Does the project have potential to impact impaired waters, class A waters, or outstanding resource waters;*

It isn't believed the proposed project will have an impact to an impaired water as the project will have minimal to no affect to stormwater or groundwater on site due to the perviousness and small size of the overall structure.

The following evaluates and addresses DES Wetlands Bureau rules in Chapter Env-Wt 603.02 (e) & (f)

(E)(1) The project meets the standard conditions in Env-Wt 307;

The project meets the standard conditions in Env-Wt 307 as the proposed docking structure meets the standards of Env-Wq 1000, RSA 483-B and Env-Wq 1400. Sediment and erosion controls will be used as necessary during construction within the previously developed tidal buffer zone. A turbidity curtain will be used to minimize the transportation of sediment and suspended solids within the tidal wetland areas. Construction within the tidal wetland area will strictly be reserved during low tides and dry phases of the low tide cycle within the project area as much as possible. Under Env-Wt 306.05(a)(2)a, NHB has been consulted to determine what impacts to rare and threatened species and natural communities may be impacted. The NHB data check resulted in three rare plant species and one natural community and a rare species survey was conducted by a qualified botanist. The survey resulted in no rare species occurring within the project limits or along the shoreline frontage of the subject property (see NHB consultation). The protection of prime wetlands or duly-established 100 foot buffers does not apply as none exist on or adjacent to the subject lot.

(E)(2) The project meets the approval criteria in Env-Wt 313.01;

The project meets the above approval criteria as a functional assessment is enclosed with this application; the project meets the avoidance and minimization requirements as specified in Env-wt 313.03; the project does not require compensatory mitigation; the project meets applicable conditions specified in Env-Wt 307 (assessment provided above), and; the project meets specific criteria listed in Env-Wt 600. The project is located entirely within the boundary of the applicant's property, as shown in the attached design plans.

(F)(1) The project design narrative as described in Env-Wt 603.06;

The project design narrative is provided above.

(F)(2) Design plans that meet the requirements of Env-Wt 603.07;

The attached design plans meet the standards provided in Env-Wt 603.07.

(F)(3) The water depth supporting information required by Env-Wt 603.08;

The attached plans provide water depth information as surveyed by Alex Ross, LLS #906 of Ross Engineering.

(F)(4) A statement regarding impact on navigation and passage required by Env-Wt 603.09;

A description of the project and a permit plan set has been provided to Pease Development Authority, Division of Ports and Harbors. Their review is pending, and the response will be provided when received.

The following evaluates and addresses DES Wetlands Bureau rules in Chapter Env-Wt 606.03:

(e) Non-toxic materials such as untreated wood, concrete, or steel shall be used if at all practicable, as such materials help reflect light under docks and typically do not release contaminants into aquatic environment. A design that uses treated wood timbers or pilings, or both, shall be approved only if the applicant demonstrates that using non-toxic materials is not practicable.

The proposed project is designed to use CCA (chromated copper arsenate) treated lumber, utilizing 12" CCA treated southern yellow pine. Attached to the application is the CCA Safety Data Sheet (SDS) for CCA treated wood. Per the SDS ecological information (#12) discloses that it is "not classified as environmentally hazardous". It should also be noted that the product is insoluble in water. The treated lumber comes to the Contractor pre-treated and there is no direct handling of CCA to treat the lumber or require on-site treatment in any way, therefore there is no risk of spilling or mis-handling.

Alternative, non-treated products would, likely require repeated repair and/or replacement at a higher frequency, and so given the above information, CCA treated lumber is the least impacting alternative.

The following evaluates and addresses DES Wetlands Bureau rules in Chapter Env-Wt 606.06:

(c) To reduce the overall number of residential tidal docks and the adverse impacts to nearshore habitat resulting therefrom, preference shall be given to residential tidal docks designed to service multiple properties.

Some of adjacent properties to the subject property contain private docking structures. Mutual use of the existing docking structures as a least impacting alternative was explored, however they were not feasible citing liability concerns from solely owned properties.

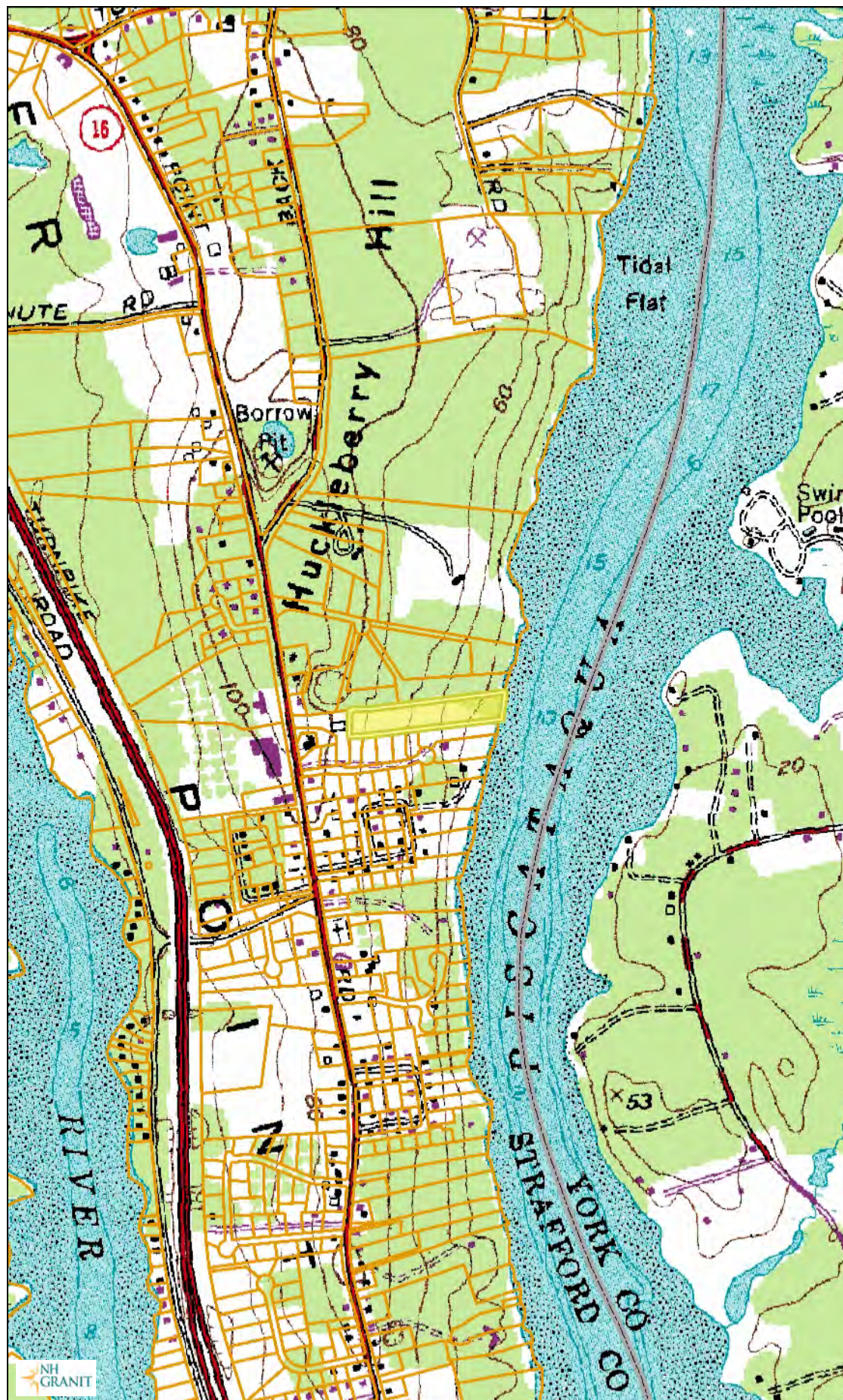
Thank you for your review of the subject permit application. Please don't hesitate to contact me with any questions or concerns.

Respectfully,



Matthew R. Cardin, CWS
Principal Wetland Scientist/Permit Specialist

Map by NH GRANIT - 196A Dover Point Road, Dover, NH



Legend

Parcels

Parcel Polygons

Attributes for Additional Lines

State

County

City/Town

Map Scale

1: 12,988

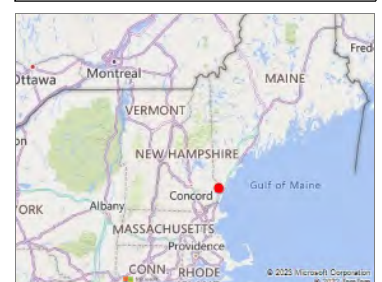
© NH GRANIT, www.granit.unh.edu

Map Generated: 2/19/2023



Notes

USGS 7.5' Quad



Abutter List
Owner: Xiao Hui Jessica Ye
Site Location: 196A Dover Point Road, Dover, NH
Map I89 , Lot H0

Map	Lot	Name	Mailing Address	Street Address
L89	G12	Steven Titus	42 Shore Ln Dover, NH 03820	42 Shore Ln, Dover, NH 03820
L89	G10	Becker Family Rev. Trust	34 Shore Ln Dover, NH 03820	34 Shore Ln Dover, NH 03820
L89	G8	Beaupre Andre and Karen Rev. Trust	30 Shore Ln Dover, NH 03820	30 Shore Ln Dover, NH 03820
L89	G6	Alexander Mackiewicz, Ashley Mackiewicz	26 Shore Ln Dover, NH 03820	26 Shore Ln Dover, NH 03820
L89	G4	Frank Getchell and Janet Maleksi Rev. Trust	20 Shore Ln Dover, NH 03820	20 Shore Ln Dover, NH 03820
L89	G2	James and Amber Montecalvo	16 Shore Ln Dover, NH 03820	16 Shore Ln Dover, NH 03820
L89	C0	Jonathan Lummus and Anne Shea Deirdre	198 Dover Point Rd Dover, NH 03820	198 Dover Point Rd Dover, NH 03820
L89	B2	Brian Louis and Stephanie Stagger Richelieu	27 Foster's Drive Dover, NH 03820	27 Foster's Drive Dover, NH 03820
L89	B4	James and Cynthia Hawse	29 Foster's Dr Dover, NH 03820	29 Foster's Drive Dover, NH 03820

February 21, 2023



Jonathan Lummus and Anne Shea Deirdre
198 Dover Point Road
Dover, NH 03820

RE: New Hampshire Wetland Application for the replacement and extension of the docking structure at 196A Dover Point, Road, Dover, NH

Dear Property Owner,

Under NH RSA 482-A, this letter is to inform you in accordance with State Law that a Wetlands Permit will be filed with the New Hampshire Department of Environmental Services (DES) Wetlands Bureau for a permit to **impact jurisdictional wetlands and the previously developed 100' tidal buffer zone for the installation of a tidal docking structure**, on behalf of your abutter located at 196A Dover Point Road.

This letter is sent to inform you as an abutter to the above-referenced property (according to local Municipal records) that **the owners of 196A Dover Point Road** proposes a project that requires construction in the previously developed tidal buffer zone, and jurisdictional wetland areas.

Plans are on file at this office, and once the application is filed, plans that show the proposed project and wetland and other jurisdictional impacts will be available for viewing during normal business hours at the office of the Dover clerk, Dover City offices, or once received by DES, at the offices of the DES Wetlands Bureau, (8 a.m. to 4 p.m.) (603) 271-2147.

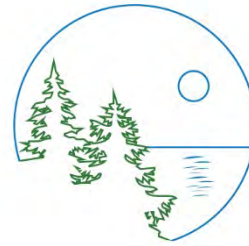
Please feel free to call if you have any questions or comments.

Sincerely,

Matthew Cardin, CWS

CERTIFIED MAIL/Return Receipt Requested

February 21, 2023



Frank Getchell and Janet Maleksi Rev. Trust
20 Shore Lane
Dover, NH 03820

RE: New Hampshire Wetland Application for the replacement and extension of the docking structure at 196A Dover Point, Road, Dover, NH

Dear Property Owner,

Under NH RSA 482-A, this letter is to inform you in accordance with State Law that a Wetlands Permit will be filed with the New Hampshire Department of Environmental Services (DES) Wetlands Bureau for a permit to **impact jurisdictional wetlands and the previously developed 100' tidal buffer zone for the installation of a tidal docking structure**, on behalf of your abutter located at 196A Dover Point Road.

This letter is sent to inform you as an abutter to the above-referenced property (according to local Municipal records) that **the owners of 196A Dover Point Road** proposes a project that requires construction in the previously developed tidal buffer zone, and jurisdictional wetland areas.

Plans are on file at this office, and once the application is filed, plans that show the proposed project and wetland and other jurisdictional impacts will be available for viewing during normal business hours at the office of the Dover clerk, Dover City offices, or once received by DES, at the offices of the DES Wetlands Bureau, (8 a.m. to 4 p.m.) (603) 271-2147.

Please feel free to call if you have any questions or comments.

Sincerely,

Matthew Cardin, CWS

CERTIFIED MAIL/Return Receipt Requested

February 21, 2023



Alexander and Ashley Mackiewicz
26 Shore Lane
Dover, NH 03820

RE: New Hampshire Wetland Application for the replacement and extension of the docking structure at 196A Dover Point, Road, Dover, NH

Dear Property Owner,

Under NH RSA 482-A, this letter is to inform you in accordance with State Law that a Wetlands Permit will be filed with the New Hampshire Department of Environmental Services (DES) Wetlands Bureau for a permit to **impact jurisdictional wetlands and the previously developed 100' tidal buffer zone for the installation of a tidal docking structure**, on behalf of your abutter located at 196A Dover Point Road.

This letter is sent to inform you as an abutter to the above-referenced property (according to local Municipal records) that **the owners of 196A Dover Point Road** proposes a project that requires construction in the previously developed tidal buffer zone, and jurisdictional wetland areas.

Plans are on file at this office, and once the application is filed, plans that show the proposed project and wetland and other jurisdictional impacts will be available for viewing during normal business hours at the office of the Dover clerk, Dover City offices, or once received by DES, at the offices of the DES Wetlands Bureau, (8 a.m. to 4 p.m.) (603) 271-2147.

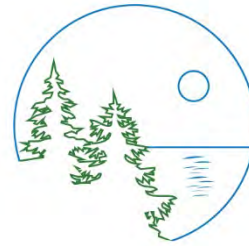
Please feel free to call if you have any questions or comments.

Sincerely,

Matthew Cardin, CWS

CERTIFIED MAIL/Return Receipt Requested

February 21, 2023



Brian Louis and Stephanie Stagger Richelieu
27 Foster's Drive
Dover, NH 03820

RE: New Hampshire Wetland Application for the replacement and extension of the docking structure at 196A Dover Point, Road, Dover, NH

Dear Property Owner,

Under NH RSA 482-A, this letter is to inform you in accordance with State Law that a Wetlands Permit will be filed with the New Hampshire Department of Environmental Services (DES) Wetlands Bureau for a permit to **impact jurisdictional wetlands and the previously developed 100' tidal buffer zone for the installation of a tidal docking structure**, on behalf of your abutter located at 196A Dover Point Road.

This letter is sent to inform you as an abutter to the above-referenced property (according to local Municipal records) that **the owners of 196A Dover Point Road** proposes a project that requires construction in the previously developed tidal buffer zone, and jurisdictional wetland areas.

Plans are on file at this office, and once the application is filed, plans that show the proposed project and wetland and other jurisdictional impacts will be available for viewing during normal business hours at the office of the Dover clerk, Dover City offices, or once received by DES, at the offices of the DES Wetlands Bureau, (8 a.m. to 4 p.m.) (603) 271-2147.

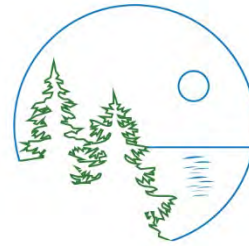
Please feel free to call if you have any questions or comments.

Sincerely,

Matthew Cardin, CWS

CERTIFIED MAIL/Return Receipt Requested

February 21, 2023



James and Cynthia Hawse
29 Foster's Drive
Dover, NH 03820

RE: New Hampshire Wetland Application for the replacement and extension of the docking structure at 196A Dover Point, Road, Dover, NH

Dear Property Owner,

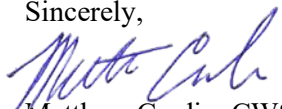
Under NH RSA 482-A, this letter is to inform you in accordance with State Law that a Wetlands Permit will be filed with the New Hampshire Department of Environmental Services (DES) Wetlands Bureau for a permit to **impact jurisdictional wetlands and the previously developed 100' tidal buffer zone for the installation of a tidal docking structure**, on behalf of your abutter located at 196A Dover Point Road.

This letter is sent to inform you as an abutter to the above-referenced property (according to local Municipal records) that **the owners of 196A Dover Point Road** proposes a project that requires construction in the previously developed tidal buffer zone, and jurisdictional wetland areas.

Plans are on file at this office, and once the application is filed, plans that show the proposed project and wetland and other jurisdictional impacts will be available for viewing during normal business hours at the office of the Dover clerk, Dover City offices, or once received by DES, at the offices of the DES Wetlands Bureau, (8 a.m. to 4 p.m.) (603) 271-2147.

Please feel free to call if you have any questions or comments.

Sincerely,


Matthew Cardin, CWS

CERTIFIED MAIL/Return Receipt Requested

February 21, 2023



Beaupre Andre and Karen Rev. Trust
30 Shore Lane
Dover, NH 03820

RE: New Hampshire Wetland Application for the replacement and extension of the docking structure at 196A Dover Point, Road, Dover, NH

Dear Property Owner,

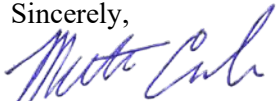
Under NH RSA 482-A, this letter is to inform you in accordance with State Law that a Wetlands Permit will be filed with the New Hampshire Department of Environmental Services (DES) Wetlands Bureau for a permit to **impact jurisdictional wetlands and the previously developed 100' tidal buffer zone for the installation of a tidal docking structure**, on behalf of your abutter located at 196A Dover Point Road.

This letter is sent to inform you as an abutter to the above-referenced property (according to local Municipal records) that **the owners of 196A Dover Point Road** proposes a project that requires construction in the previously developed tidal buffer zone, and jurisdictional wetland areas.

Plans are on file at this office, and once the application is filed, plans that show the proposed project and wetland and other jurisdictional impacts will be available for viewing during normal business hours at the office of the Dover clerk, Dover City offices, or once received by DES, at the offices of the DES Wetlands Bureau, (8 a.m. to 4 p.m.) (603) 271-2147.

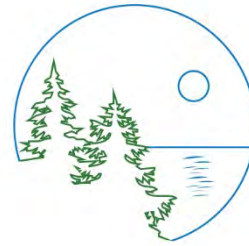
Please feel free to call if you have any questions or comments.

Sincerely,


Matthew Cardin, CWS

CERTIFIED MAIL/Return Receipt Requested

February 21, 2023



Steven Titus
42 Shore Lane
Dover, NH 03820

RE: New Hampshire Wetland Application for the replacement and extension of the docking structure at 196A Dover Point, Road, Dover, NH

Dear Property Owner,

Under NH RSA 482-A, this letter is to inform you in accordance with State Law that a Wetlands Permit will be filed with the New Hampshire Department of Environmental Services (DES) Wetlands Bureau for a permit to **impact jurisdictional wetlands and the previously developed 100' tidal buffer zone for the installation of a tidal docking structure**, on behalf of your abutter located at 196A Dover Point Road.

This letter is sent to inform you as an abutter to the above-referenced property (according to local Municipal records) that **the owners of 196A Dover Point Road** proposes a project that requires construction in the previously developed tidal buffer zone, and jurisdictional wetland areas.

Plans are on file at this office, and once the application is filed, plans that show the proposed project and wetland and other jurisdictional impacts will be available for viewing during normal business hours at the office of the Dover clerk, Dover City offices, or once received by DES, at the offices of the DES Wetlands Bureau, (8 a.m. to 4 p.m.) (603) 271-2147.

Please feel free to call if you have any questions or comments.

Sincerely,

Matthew Cardin, CWS

CERTIFIED MAIL/Return Receipt Requested

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Dover, NH 03820

OFFICIAL USE

Certified Mail Fee	\$4.15
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	\$0.00
☐ Return Receipt (electronic)	\$0.00
☐ Certified Mail Restricted Delivery	\$0.00
☐ Adult Signature Required	\$0.00
☐ Adult Signature Restricted Delivery	\$0.00
Postage	\$0.63
Total Postage and Fees	\$4.78

Sent To: James + Cynthia Hawse
29 Fosters Drive
Dover NH 03820

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

0840 3
FEB 24 2023
GREENLAND POST OFFICE 03840
Postmark Here

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Dover, NH 03820

OFFICIAL USE

Certified Mail Fee	\$4.15
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	\$0.00
☐ Return Receipt (electronic)	\$0.00
☐ Certified Mail Restricted Delivery	\$0.00
☐ Adult Signature Required	\$0.00
☐ Adult Signature Restricted Delivery	\$0.00
Postage	\$0.63
Total Postage and Fees	\$4.78

Sent To: Frank Gatchell + Janet Maleksi Rev. Trust
20 Shore Ln
Dover, NH 03820

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

0840 3
FEB 24 2023
GREENLAND POST OFFICE 03840
Postmark Here

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Dover, NH 03820

OFFICIAL USE

Certified Mail Fee	\$4.15
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	\$0.00
☐ Return Receipt (electronic)	\$0.00
☐ Certified Mail Restricted Delivery	\$0.00
☐ Adult Signature Required	\$0.00
☐ Adult Signature Restricted Delivery	\$0.00
Postage	\$0.63
Total Postage and Fees	\$4.78

Sent To: Alexander + Ashley Mackiewicz
26 Shore Ln
Dover NH 03820

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

0840 3
FEB 24 2023
GREENLAND POST OFFICE 03840
Postmark Here

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Dover, NH 03820

OFFICIAL USE

Certified Mail Fee	\$4.15
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	\$0.00
☐ Return Receipt (electronic)	\$0.00
☐ Certified Mail Restricted Delivery	\$0.00
☐ Adult Signature Required	\$0.00
☐ Adult Signature Restricted Delivery	\$0.00
Postage	\$0.63
Total Postage and Fees	\$4.78

Sent To: Beaupre Anne and Karen Rev. Trust
30 Shore Ln
Dover, NH 03820

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

0840 3
FEB 24 2023
GREENLAND POST OFFICE 03840
Postmark Here

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Dover, NH 03820

OFFICIAL USE

Certified Mail Fee	\$4.15
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	\$0.00
☐ Return Receipt (electronic)	\$0.00
☐ Certified Mail Restricted Delivery	\$0.00
☐ Adult Signature Required	\$0.00
☐ Adult Signature Restricted Delivery	\$0.00
Postage	\$0.63
Total Postage and Fees	\$4.78

Sent To: Andrew Linn + Anna Shee Deirdre
198 Dover Pt. Rd
Dover, NH 03820

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

0840 3
FEB 24 2023
GREENLAND POST OFFICE 03840
Postmark Here

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Dover, NH 03820

OFFICIAL USE

Certified Mail Fee	\$4.15
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	\$0.00
☐ Return Receipt (electronic)	\$0.00
☐ Certified Mail Restricted Delivery	\$0.00
☐ Adult Signature Required	\$0.00
☐ Adult Signature Restricted Delivery	\$0.00
Postage	\$0.63
Total Postage and Fees	\$4.78

Sent To: Steven Titus
42 Shore Ln
Dover NH 03820

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

0840 3
FEB 24 2023
GREENLAND POST OFFICE 03840
Postmark Here

7020 0640 0001 3192 3730

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com.

Dover, NH 03820

OFFICIAL USE

Certified Mail Fee	\$4.15
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	\$0.00
☐ Return Receipt (electronic)	\$0.00
☐ Certified Mail Restricted Delivery	\$0.00
☐ Adult Signature Required	\$0.00
☐ Adult Signature Restricted Delivery	\$0.00

Postage \$0.63

Total Postage and Fees \$4.78



Sent To Brian Lewis + Stephanie Stasser Richelieu
Street and Apt. No., or PO Box No. 27 Foster St
City, State, ZIP+4® Dover NH 03820



Photo 1. Existing Dock – 50' section to be replaced (section w/out railings) – Facing north



Photo 2. Start of the landward section of dock – to be replaced – Facing south



Photo 3. Section of Dock to be replaced (up to railing) – Facing northeast



Photo 4. Existing Dock – side profile. Facing East

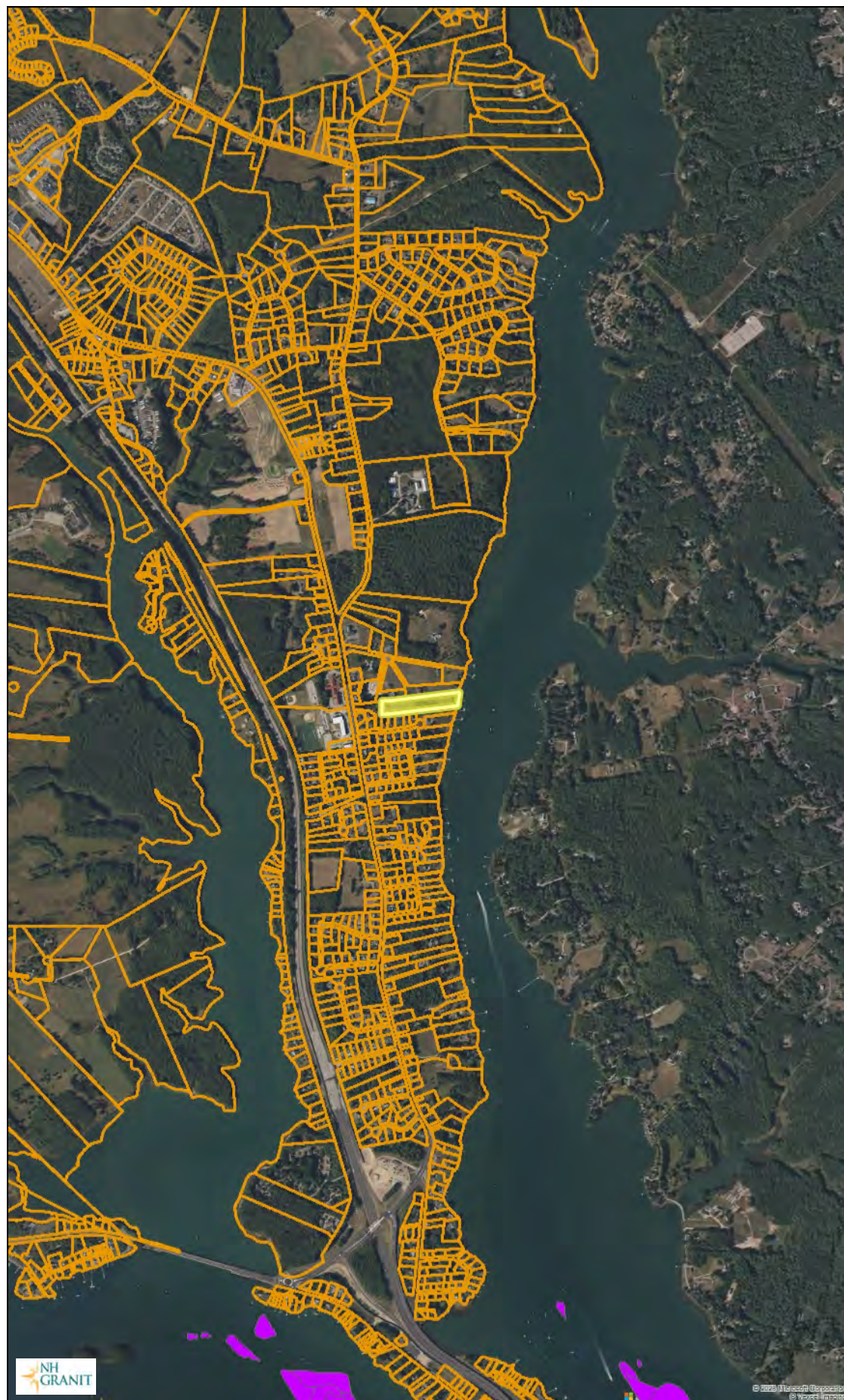


Photo 5. Existing dock – section to be replaced (up to railing) – Facing Northeast



Photo 6. Existing dock – section to be replaced (up to railing) – facing west

Map by NH GRANIT - 196A Dover Point Road, Dover, NH



Legend

Parcels - polygons

Parcel Polygons

Attributes for Additional Lines

2019

1996

1986

2021

Map Scale

1: 25,977

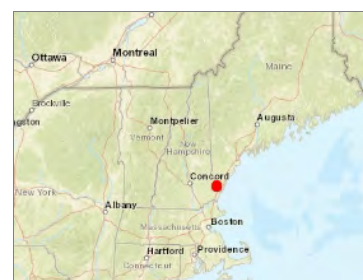


© NH GRANIT, www.granit.unh.edu

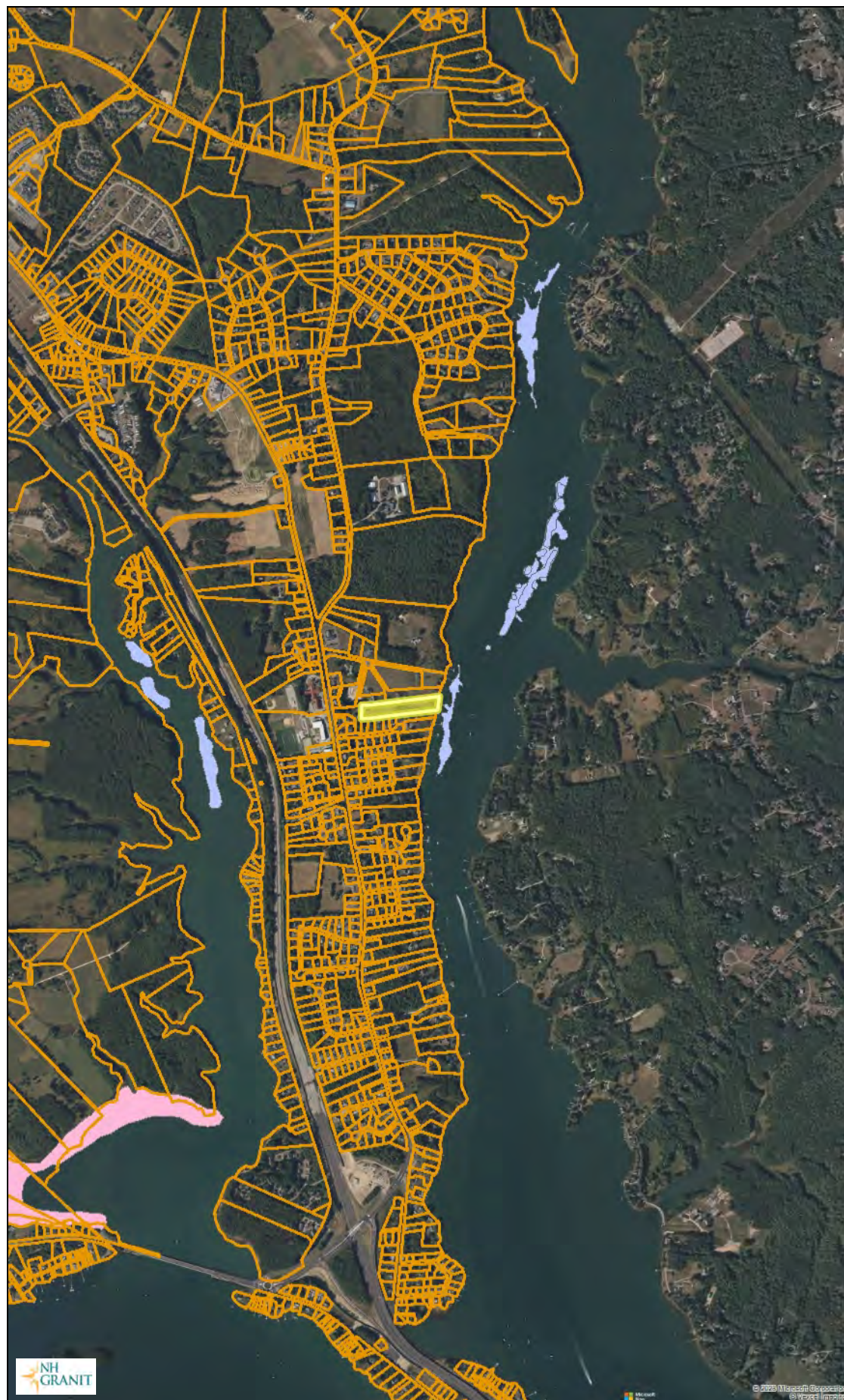
Map Generated: 2/19/2023

Notes

Eelgrass Occurance



Map by NH GRANIT - 196A Dover Point Road, Dover, NH



Legend

Parcels - polygons

- Parcel Polygons
- Attributes for Additional Lines

Current Shellfish Beds

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

Map Scale

1: 25,977

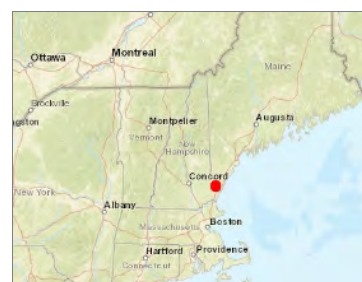
© NH GRANIT, www.granit.unh.edu

Map Generated: 2/19/2023

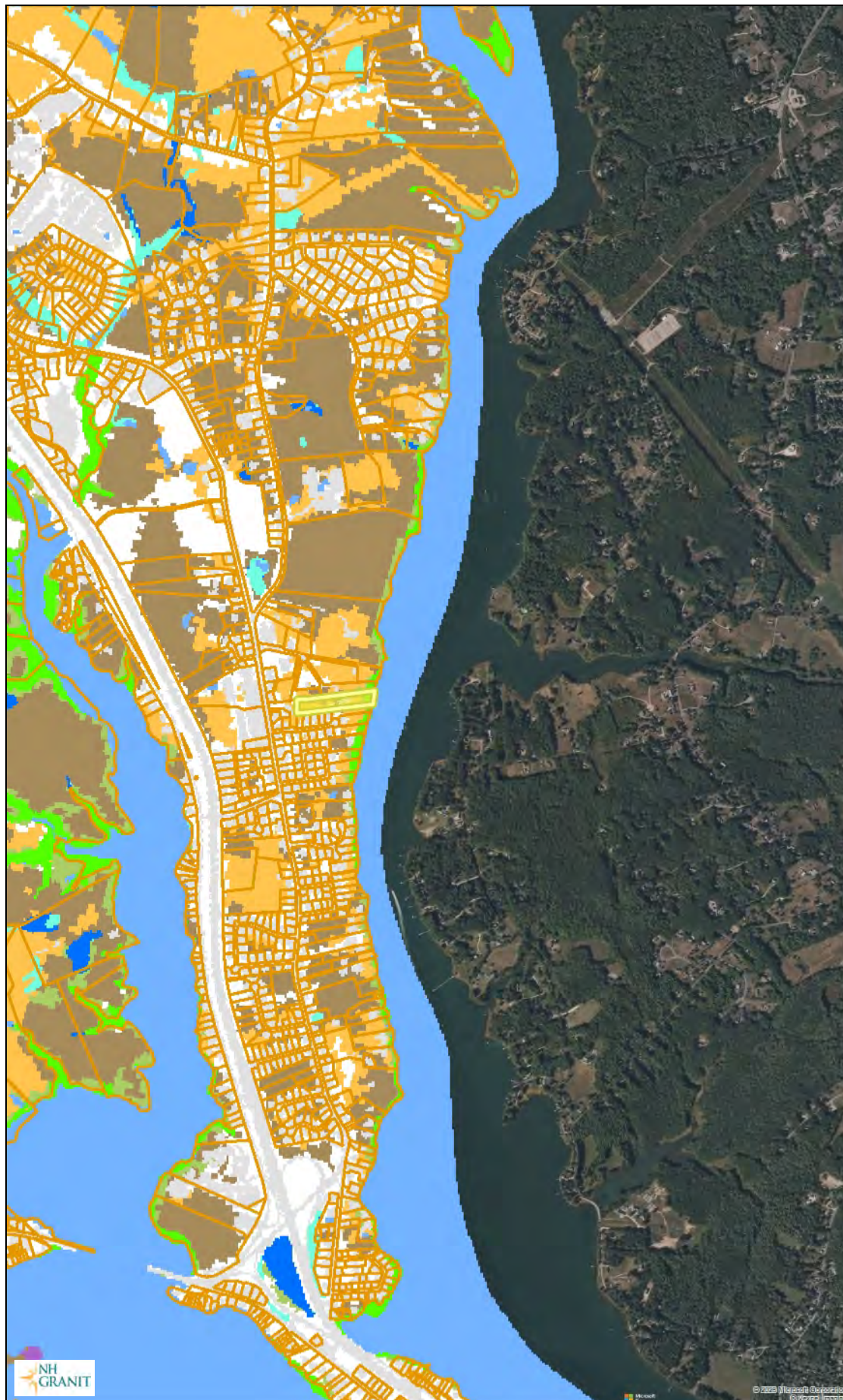


Notes

Shellfish Bed Occurrence



Map by NH GRANIT - 196A Dover Point Road, Dover, NH



Legend

- Parcels - polygons**
- Parcel Polygons
 - Attributes for Additional Lines
- Wildlife Habitat Land Cover**
- Alpine
 - Appalachian oak-pine
 - Cliff and Talus slope
 - Coastal island and Rocky coast
 - Developed Impervious
 - Developed or Barren land
 - Dune
 - Floodplain forest
 - Grassland
 - Hemlock-hardwood-pine
 - High-elevation spruce-fir
 - Lowland spruce-fir
 - Northern hardwood-conifer
 - Northern swamp
 - Open water
 - Peatland
 - Pine barren
 - Rocky ridge
 - Salt marsh
 - Sand/Gravel
 - Temperate swamp
 - Marsh and shrub wetland

Map Scale

1: 25,977

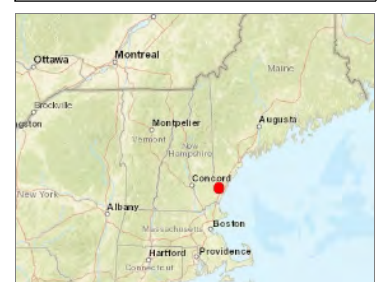
© NH GRANIT, www.granit.unh.edu

Map Generated: 2/19/2023

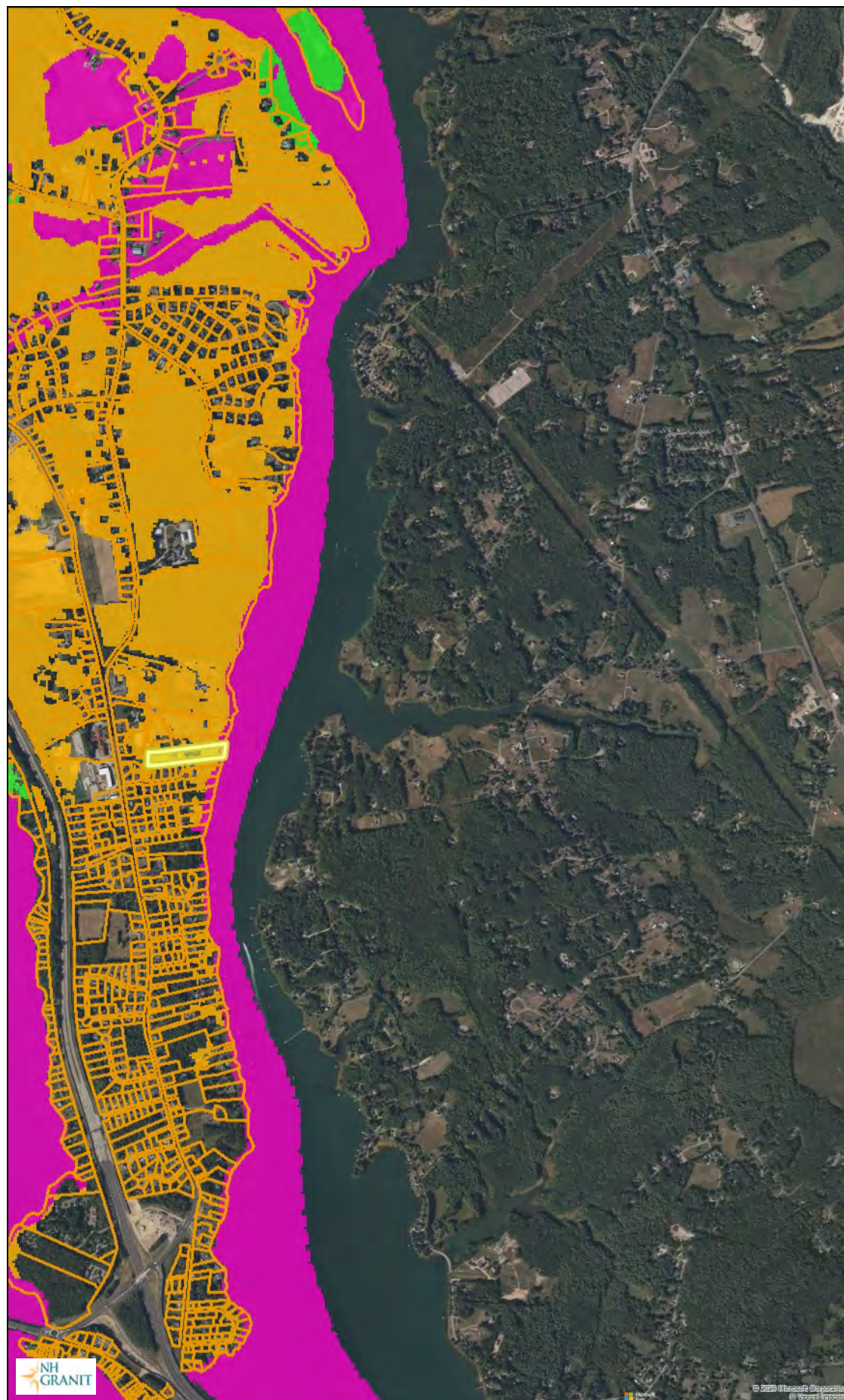


Notes

Wildlife Habitat Land Cover



Map by NH GRANIT - 196A Dover Point Road, Dover, NH



Legend

Parcels - polygons

Parcel Polygons

Attributes for Additional Lines

Highest Ranked Wildlife Hat

Not Top Ranked

Highest Ranked Habitat in NH

Highest Ranked Habitat in Region

Supporting Landscape

Map Scale

1: 25,977

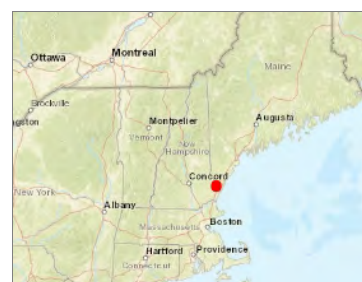
© NH GRANIT, www.granit.unh.edu

Map Generated: 2/19/2023



Notes

Wildlife Highest Ranked Habitat



Memo

NH Natural Heritage Bureau NHB DataCheck Results Letter

Please note: portions of this document are confidential.

Maps and NHB record pages are confidential and should be redacted from public documents.

To: matt cardin, Cardin Environmental Permitting
30 old post road
Newington, NH 03801

From: NHB Review, NH Natural Heritage Bureau

Date: 7/12/2022 (valid until 07/12/2023)

Re: Review by NH Natural Heritage Bureau

Permits: NHDES - Wetland Standard Dredge & Fill - Major, USACE - General Permit

NHB ID: NHB22-2246

Town: Dover

Location: 196A Dover Point Road

Description: The project is to replace a lawfully existing tidal dock in-kind and in-place, extend the access ramp from an upland location to the existing start of the dock, replace the existing gangway with a 40-foot gangway, and re-configure the existing floats to a 10x40' float secured by block or helical anchors and chains.

cc: NHFG Review

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

Comments **NHB:** NHB recommends a survey for Engelmann's quillwort. This species occurs in the shallow water of lakes and rivers and is sometimes emergent. If the species is present then the proposed work may impact it. Quillworts are difficult to identify and the species should be surveyed by a qualified botanist. Plants are best identified July through October. If any plants are found they should be documented with GPS, diagnostic photos and/or a specimen, and a rare species reporting form. For a rare species reporting form and recommended surveyor qualifications please go to <https://www.nh.gov/nhdfl/reports/rare-plant-list.htm>.
F&G: Please refer to NHFG consultation requirements below.

Plant species	State ¹	Federal	Notes
Engelmann's quillwort (<i>Isoetes engelmannii</i>)*	E	--	Primarily vulnerable to changes to the hydrology of its wetland habitat, especially alterations that change water levels. It may also be susceptible to increased pollutants and nutrients carried in stormwater runoff.

Vertebrate species	State ¹	Federal	Notes
--------------------	--------------------	---------	-------

Memo

NH Natural Heritage Bureau NHB DataCheck Results Letter

Please note: portions of this document are confidential.

Maps and NHB record pages are confidential and should be redacted from public documents.

Atlantic Sturgeon (<i>Acipenser oxyrinchus oxyrinchus</i>)	T	T	Contact the NH Fish & Game Dept and the US Fish & Wildlife Service (see below).
Shortnose Sturgeon (<i>Acipenser brevirostrum</i>)	E	E	Contact the NH Fish & Game Dept and the US Fish & Wildlife Service (see below).

¹Codes: "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.

For all animal reviews, refer to 'IMPORTANT: NHFG Consultation' section below.

Disclaimer: 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.

IMPORTANT: NHFG Consultation

If this NHB Datacheck letter DOES NOT include ANY wildlife species records, then, based on the information submitted, no further consultation with the NH Fish and Game Department pursuant to Fis 1004 is required.

If this NHB Datacheck letter includes a record for a threatened (T) or endangered (E) wildlife species, consultation with the New Hampshire Fish and Game Department under Fis 1004 may be required. To review the Fis 1000 rules (effective February 3, 2022), please go to <https://wildlife.state.nh.us/wildlife/environmental-review.html>. All requests for consultation and submittals should be sent via email to NHFGreview@wildlife.nh.gov or can be sent by mail, and **must include the NHB Datacheck results letter number and "Fis 1004 consultation request" in the subject line.**

If the NHB DataCheck response letter does not include a threatened or endangered wildlife species but includes other wildlife species (e.g., Species of Special Concern), consultation under Fis 1004 is not required; however, some species are protected under other state laws or rules, so coordination with NH Fish & Game is highly recommended or may be required for certain permits. While some permitting processes are exempt from required consultation under Fis 1004 (e.g., *statutory permit by notification, permit by rule, permit by notification, routine roadway registration, docking structure registration, or conditional authorization by rule*), coordination with NH Fish & Game may still be required under the rules governing those specific permitting processes, and it is recommended you contact the applicable permitting agency. For projects not requiring consultation under Fis 1004, but where additional coordination with NH Fish and Game is requested, please email: Kim Tuttle kim.tuttle@wildlife.nh.gov with a copy to NHFGreview@wildlife.nh.gov, and include the NHB Datacheck results letter number and "review request" in the email subject line.

Contact NH Fish & Game at (603) 271-0467 with questions.

CONFIDENTIAL – NH Dept. of Environmental Services review

NHB22-2246



New Hampshire Natural Heritage Bureau - Plant Record

Engelmann's quillwort (*Isoetes engelmannii*)**Legal Status**

Federal: Not listed
State: Listed Endangered

Conservation Status

Global: Apparently secure but with cause for concern
State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 1933: No details.
General Area: 1933: Fresh creek emptying into estuary.
General Comments: --
Management: --
Comments:

Location

Survey Site Name: Fresh Creek
Managed By: Bellamy River WMA - West - Lot 1

County: Strafford
Town(s): Dover
Size: 1617.6 acres Elevation:

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

Directions: Dover. Fresh Creek emptying into estuary.

Dates documented

First reported: 1933-07-22 Last reported: 1933-07-02

New Hampshire Natural Heritage Bureau - Animal Record

Atlantic Sturgeon (*Acipenser oxyrinchus 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 Piscataqua River. 2015: 1 individual, sex unknown, detected in Portsmouth Harbor. 2012: 1 individual, sex unknown, detected in Little Bay.

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

General Comments: --

Management: --

Comments:

Location

Survey Site Name: Piscataqua River
Managed By:

County:

Town(s): Out-Of-State

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 Piscataqua 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

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 Piscataqua River. 2015: 3 females and 2 other individuals, sex unknown detected in Portsmouth Harbor. 2014: 1 female detected moving from Portsmouth Harbor up the Piscataqua River to the mouth of the Cocheco River. 2012: 1 female detected in Little Bay. 2011: 1 female detected in Little Bay. 2010: 1 female detected in Little Bay. 2016: Tidal waters in Portsmouth Harbor, Little Bay, and the Piscataqua River.

General Area: 2016: Tidal waters in Portsmouth Harbor, Little Bay, and the Piscataqua River.
General Comments: --
Management: --
Comments:

Location

Survey Site Name: Piscataqua River
Managed By:

County:
Town(s): Out-Of-State
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 Piscataqua 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.



August 23, 2022

Mr. Matthew Cardin
Cardin Environmental Permitting
30 Old Post Road
Newington, NH 03801

Re: Rare, Threatened, and Endangered Plant Species Surveys: Tidal Lands and Adjacent Upland of 196A Dover Point Road, Dover, NH

Mr. Cardin:

Basswood Environmental LLC (Basswood) is pleased to provide the results of the rare, threatened, and endangered (RTE) plant species survey in support of the proposed dock replacement, located at 196A Dover Point Road in Dover, New Hampshire. The New Hampshire Natural Heritage Bureau (NHB) conducted a review of the documented RTE occurrences in the vicinity of the project (NHB22-2246, attached) and identified only

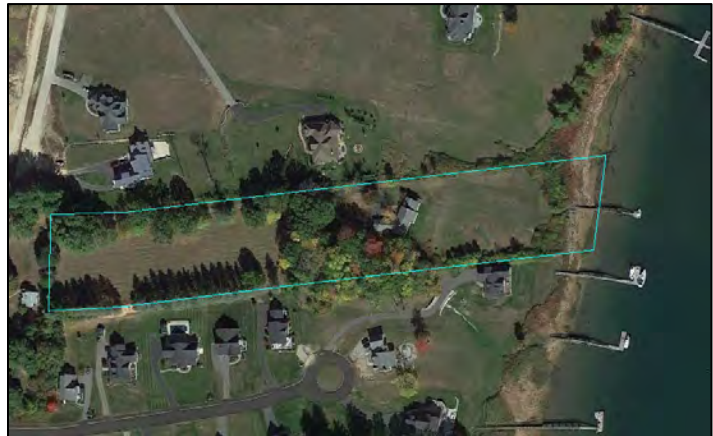


Figure 1: Site Location

Engelmann's quillwort (*Isoetes engelmannii*) from the area. A field survey was deemed necessary to establish if this species, or any previously undocumented RTE species are located in the immediate vicinity of the project.

Survey Description

The property is located on the western shore of the Piscataqua River. The shoreline has been developed and is currently the site of many residential dock structures. The site transitions along a gentle slope from a maintained residential yard to the river with a shrubby transition zone along the bank, prior to the saltmarsh. The entire shoreline of the property was systematically surveyed, including this shrubby transition zone, with particular emphasis on areas within approximately 30-feet of the existing dock to be replaced. Surveys were performed shortly after low tide by walking parallel transects between the lawn and the unvegetated mudflats. All species encountered were identified to species

when possible. A Juniper Geode™ GPS receiver capable of submeter accuracy was used to record spatial data and ensure that the site bounds were thoroughly investigated.

Unknown and potentially RTE species encountered were identified to species using various keys, including *Flora Novae Angliae* (Haines, 2011)¹, and *Flora of the Northeast* (Magee and Ahles, 2007)².

Results

No RTE species were located during the course of the survey, nor was any habitat identified that would support Engelmann's quillwort. The saltmarsh area is dominated by typical species, including smooth cordgrass (*Spartina alterniflora*) adjacent to the river, with saltmeadow cordgrass (*Spartina patens*) and seaside goldenrod (*Solidago sempervirens*) immediately behind this. Other species in this area include annual saltmarsh American-aster (*Symphyotrichum subulatum*), saltmarsh tuber-bulrush (*Bolboschoenus maritimus* ssp. *paludosus*), common glasswort (*Salicornia depressa*), and saltmarsh rush (*Juncus gerardii*). Above the saltmarsh community, species more commonly found in freshwater wetlands are present, such as loosened soft rush (*Juncus effusus* ssp. *solutus*), common fox sedge (*Carex vulpinoidea*), and a cattail that is morphologically consistent with the hybrid *Typha x glauca*.



Figure 3: Saltmarsh area around dock structure



Figure 2: Transition zone to dock

A large area of invasive common reed (*Phragmites australis*) also extends from above the tidal areas, into the project area north of the existing dock. Invasive purple loosestrife (*Lythrum salicaria*) is also present in the shrubby transition zone, as well as Morrow's honeysuckle (*Lonicera morrowii*) in addition to native species such as red maple (*Acer rubrum*), black walnut (*Juglans nigra*), and slippery elm (*Ulmus rubra*).

¹ Haines, Arthur 2011. *Flora Novae Angliae*. New England Wildflower Society and Yale University Press, New Haven. 973pp.

² Magee, D.W., and H.E. Ahles. 2007. *Flora of the Northeast* (2nd ed.). University of Massachusetts Press, Amherst. 1214pp.



If there is additional detail or clarity that Basswood can provide regarding the survey, please do not hesitate to contact Erik Lema at erik@basswoodenv.com.

Best regards,

A handwritten signature in black ink that reads "Erik Lema". The signature is fluid and cursive, with a long horizontal stroke at the end.

Erik Lema NHCWS#286, Owner/Principal
Basswood Environmental LLC

Attachment: NHB22-2246



Matthew Cardin <mr.cardin@gmail.com>

NHB Review: NHB22-2247

DNCR: NHB Review <nhbreview@dn-cr.nh.gov>

Wed, Aug 24, 2022 at 3:19 PM

To: "matt@cardinenvironmental.com" <matt@cardinenvironmental.com>

Cc: "Stanwood, Sabrina" <Sabrina.m.stanwood@dn-cr.nh.gov>, "Bouchard, Jessica" <Jessica.R.Bouchard@dn-cr.nh.gov>

Hi Matt,

Thank you for conducting surveys for Dwarf glasswort (*Salicornia bigelovii*), Engelmann's quillwort (*Isoetes engelmannii*), Marsh elder (*Iva frutescens*) and Tundra alkali grass (*Puccinellia pumila*).

Please use proper erosion and sediment controls and avoid impacts to the Sparsely vegetated intertidal zone. This is an exemplary natural community and it is important that it is not negatively affected by any temporary or permanent disturbance.

Based on the survey results indicating none of the listed rare plants are in the proposed project area, NHB has no further concerns about the proposed project as long as the exemplary natural community is not impacted.

Thank you,

Maddie Severance (she/her/hers)

Ecological Data Assistant

New Hampshire Natural Heritage Bureau (NHB)

Division of Forests & Lands

NH Dept. of Natural & Cultural Resources

172 Pembroke Rd

Concord, NH 03301

(603)-271-2834 (office)

[NHB DataCheck Tool](#)

From: matt@cardinenvironmental.com <matt@cardinenvironmental.com>

Sent: Tuesday, August 23, 2022 11:32 PM

To: DNCR: NHB Review <nhbreview@dn-cr.nh.gov>

Subject: Re: NHB Review: NHB22-2247

EXTERNAL: Do not open attachments or click on links unless you recognize and trust the sender.

Hello Jessica -

Thanks for the records review and prior correspondence. In the interest of time and thoroughness, Erik Lema of Basswood Environmental conducted a rare plant review of the project site. In summary, there were no rte species identified within the project. A report outlining Mr. Lema's survey effort and results is attached. I trust this satisfies the request in the data record request, however, please don't hesitate to reach out to me with any follow-up questions or concerns.

[Quoted text hidden]



Matt Cardin <matt@cardinenvironmental.com>

FIS 1004 Consultation Review Request NHB Review: NHB22-2246

2 messages

Matt Cardin <matt@cardinenvironmental.com>
To: "FGC: NHFG review" <NHFGreview@wildlife.nh.gov>

Fri, Dec 9, 2022 at 9:24 PM

I'm requesting a FIS 1004 consultation for a tidal dock project on the Piscataqua River. The project includes replacing the first landward 50 feet of the existing pier in kind and in place and at a higher elevation to comply with a 1:1 width to height ratio over the substrate, extending the access pier landward an additional 51 feet over freshwater wetland area, replace existing 3' x 30' gangway with 3' x 40' gangway, and replacing the existing 10' x 20' float secured by (4) anchors/chains, with a 6' x 12' inline float to a perpendicular 8' x 40' float secured by (4) anchors/chains extending from each corner of the 8' x 40' float.

The gangway and float will be seasonal. The new construction of the docking structure will be located over sections of salt marsh and mudflat. The majority of work can and will be conducted during low tide intervals and all pile driving will occur above the mean low low water elevation. Work occurring below the mean low low water elevation will be limited to installing new float anchors and chains.

I've attached a draft plan showing the dock location and proposed sections to be replaced. Please don't hesitate to reach out to me if you have any questions or concerns. I greatly appreciate your review.

Best regards,

Matt Cardin
603-988-6635

2 attachments**196A Dover Point Road_Final.pdf**
933K**NHB22-2246_cardin.pdf**
374K

Snyder, Kimberly <Kimberly.C.Snyder@wildlife.nh.gov>
To: Matt Cardin <matt@cardinenvironmental.com>, "FGC: NHFG review" <NHFGreview@wildlife.nh.gov>
Cc: "Dionne, Michael" <Michael.A.Dionne@wildlife.nh.gov>

Tue, Dec 20, 2022 at 3:48 PM

Matt,

NHFG has reviewed your request for consultation for a tidal dock project on the Piscataqua River in Dover.

The NHFG Nongame and Endangered Species Program does not expect impacts to Atlantic and Shortnose sturgeon as a result of the proposed pier replacement and installation of a seasonal gangway and dock structure. No further consultation with NHFG is required.

Thanks,

Kim Snyder

Program Planner

NHFG

From: Matt Cardin <matt@cardinenvironmental.com>
Sent: Friday, December 9, 2022 9:24 PM
To: FGC: NHFG review <NHFGreview@wildlife.nh.gov>
Subject: FIS 1004 Consultation Review Request NHB Review: NHB22-2246

EXTERNAL: Do not open attachments or click on links unless you recognize and trust the sender.

[Quoted text hidden]



Drawn Action Area & Overlapping S7 Consultation Areas

Area of Interest (AOI) Information

Area : 2,073.16 acres

Feb 20 2023 22:29:48 Eastern Standard Time



Summary

Name	Count	Area(acres)	Length(mi)
Atlantic Sturgeon	2	988.21	N/A
Shortnose Sturgeon	1	494.10	N/A
Atlantic Salmon	0	0	N/A
Sea Turtles	0	0	N/A
Atlantic Large Whales	0	0	N/A
In or Near Critical Habitat	1	319.66	N/A

Atlantic Sturgeon

#	Feature ID	Species	Lifestage	Behavior	Zone	From	Until	From (2)	Until (2)	Area(acres)
1	ANS_PIS_ADU_MAF	Atlantic sturgeon	Adult	Migrating & Foraging	Piscataqua River	01/01	12/31	N/A	N/A	494.10
2	ANS_PIS_SUB_MAF	Atlantic sturgeon	Subadult	Migrating & Foraging	Piscataqua River	01/01	12/31	N/A	N/A	494.10

Shortnose Sturgeon

#	Feature ID	Species	Life Stage	Behavior	Zone	From	Until	From (2)	Until (2)	Area(acres)
1	SNS_PIS_ADU_MAF	Shortnose sturgeon	Adult	Migrating & Foraging	Piscataqua River	04/01	11/30	N/A	N/A	494.10

In or Near Critical Habitat

#	Species	In or Near Critical Habitat	Area(acres)
1	Atlantic Sturgeon	Gulf of Maine Unit 4: Piscataqua River	319.66

SAFETY DATA SHEET

1. Identification

Product identifier Chromated Copper Arsenate (CCA) Treated Wood
Other means of identification 092
Recommended use Preservative Treated Wood for various weather protected and exterior uses.
Recommended restrictions Outdoor residential structures such as decks and playgrounds.

Manufacturer/Importer/Supplier/Distributor information

Customers of Koppers Performance Chemicals Inc.

Company name

Address

Telephone number

Contact person

Emergency phone number

E-mail

2. Hazard(s) identification

Chromated Copper Arsenate (CCA) Treated Wood, under 29 CFR 1910.1200 Hazard Communication Standard, are considered mixtures due to further processing which may produce dusts and or fume. The categories of Health Hazards as defined in "GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS), Third revised edition ST/SG/AC.10/30/Rev. 3" United Nations, New York and Geneva, 2009 have been evaluated. Refer to Section 3, 7, 8 and 11 for additional information.

Physical hazards Not classified.
Health hazards Carcinogenicity Category 1A
OSHA defined hazards Combustible dust

Label elements

Hazard symbols



Signal word Danger
Hazard statement May cause cancer by inhalation. May form combustible dust concentrations in air.

Precautionary statement

Prevention

This solid, treated wood product poses little or no immediate health or fire hazard. When treated or untreated wood products are subjected to sawing, drilling, sanding, burning, grinding or other similar processes, potentially hazardous airborne particulate and fumes may be generated.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Wear protective gloves/protective clothing/eye protection/face protection. Prevent dust accumulation to minimize explosion hazard. Observe good industrial hygiene practices.

Response

If exposed or concerned: Get medical advice/attention. Take off contaminated clothing and wash before reuse. In case of fire: Use water fog, foam, carbon dioxide, dry chemical for extinction. Collect spillage.

Storage

Store away from incompatible materials. Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Wood/Wood dust	N/A	<92

Trivalent Chromium	1308-38-9	<3.5
Arsenic Pentoxide	1303-28-2	<3
Copper Oxide	1317-39-1	<1.5

Composition comments Depending on the additives applied to the treating solution, this wood may also contain < 1% of mold inhibitors, <1% of a wax oil emulsion, and <1% of a colorant. Components not listed are either non-hazardous or are below reportable limits.

4. First-aid measures

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately. Some species may cause allergic respiratory reactions with asthma-like symptoms in sensitized individuals.

Skin contact Remove contaminated clothing. Wash skin thoroughly with soap and water for several minutes. Prolonged contact with treated wood and/or treated wood dust, especially when freshly treated at the plant, may cause irritation to the skin. Abrasive handling or rubbing of the treated wood may increase skin irritation. Some wood species, regardless of treatment, may cause dermatitis or allergic skin reactions in sensitized individuals. In case of rashes, wounds or other skin disorders: Seek medical attention and bring along these instructions.

Eye contact Do not rub eye. Immediately flush eye(s) with plenty of water. Remove any contact lenses and open eyelids wide apart. If eye irritation persists: Get medical advice/attention.

Ingestion Rinse mouth thoroughly if dust is ingested. Get medical attention if any discomfort continues.

Most important symptoms/effects, acute and delayed Wood dust: May cause nasal dryness, irritation and mucostasis. Coughing, wheezing, sneezing, sinusitis and prolonged colds have also been reported. Depending on wood species may cause respiratory sensitization and/or irritation. Symptoms can include irritation, redness, scratching of the cornea, and tearing. May cause eczema-like skin disorders (dermatitis). Airborne treated or untreated wood dust may cause nose, throat, or lung irritation and other respiratory effects.

Indication of immediate medical attention and special treatment needed Treat symptomatically. Respiratory ailments and pre-existing skin conditions may be aggravated by exposure to wood dust. If one ounce of treated wood dust per 10 lbs. of body weight are ingested, acute arsenic intoxication is a possibility.

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Carbon dioxide, regular foam, dry chemical, water spray, or water fog.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical Depending on moisture content, and more importantly, particle diameter and airborne concentration, wood dust in a contained area may explode in the presence of an ignition source. Wood dust may similarly deflagrate (combustion without detonation like an explosion) if ignited in an open or loosely contained area. An airborne concentration of 40 grams (40,000 mg) of dust per cubic meter of air is often used as the LEL for wood dusts. Reference NFPA Standards- 654 and 664 for guidance. Toxic vapors from wood and preservative may be given off in a fire. Ash will contain free arsenic and chromium and may be toxic.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

Fire-fighting equipment/instructions Use water spray to cool fire exposed surfaces and to protect personnel. In case of fire and/or explosion do not breathe fumes.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Avoid generation and spreading of dust. Avoid spread of dust. Avoid inhalation of dust. Provide adequate ventilation. Wear appropriate personal protective equipment (See Section 8).

Methods and materials for containment and cleaning up Sweep or vacuum up spillage and collect in suitable container for disposal. If not possible, gently moisten dust before it is collected with shovel, broom or the like. Containers must be labeled. For waste disposal, see Section 13.

Environmental precautions Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

7. Handling and storage

Precautions for safe handling

Not applicable for Chromated Copper Arsenate (CCA) Treated Wood as sold/shipped, however, when treated or untreated wood products are subjected to sawing, drilling, sanding, burning, grinding or other similar processes, potentially hazardous levels of airborne particulate and fumes may be generated and should be evaluated and controlled as necessary.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid working with freshly treated wet wood. If not possible, wear long sleeve shirt, long pants and gloves when working with freshly treated wet wood. Clothing should be removed and replaced if it becomes wet due to contact with freshly treated wood. Avoid prolonged or repeated breathing of dust. Avoid contact with skin and eyes. Do not smoke. Do not burn preserved wood. Do not use preserved wood as mulch. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.

Conditions for safe storage, including any incompatibilities

Keep away from heat, sparks and open flame. Store in a dry, cool and well-ventilated place. Store away from incompatible materials (See Section 10).

8. Exposure controls/personal protection

Occupational Exposure Limits (OELs): Chromated Copper Arsenate (CCA) Treated Wood as sold/shipped in its solid, treated wood product form does not present an inhalation, ingestion or contact hazard, nor would any of the following exposure data apply. However, operations such as sawing, drilling, sanding, burning, grinding or other similar processes may produce fumes and/or particulates. The following exposure limits are offered as reference, for an experienced industrial hygienist to review.

US. OSHA

Components	Type	Value	Form
Wood/Wood dust (CAS N/A)	PEL	5 mg/m ³ 15 mg/m ³	Respirable dust. Total fraction.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Trivalent Chromium (CAS 1308-38-9)	PEL	0.5 mg/m ³

ACGIH

Components	Type	Value	Form
Wood/Wood dust (CAS N/A)	TWA	1 mg/m ³	Inhalable fraction.

U.S. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Arsenic Pentoxide (CAS 1303-28-2)	Ceiling	0.001 mg/m ³	Dust and mist.
Copper Oxide (CAS 1317-39-1)	TWA	1 mg/m ³	
Arsenic Pentoxide (CAS 1303-28-2)	TWA	0.05 mg/m ³	
Wood/Wood dust (CAS N/A)	TWA	1 mg/m ³	

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Arsenic Pentoxide (CAS 1303-28-2)	35 µg/l	Inorganic arsenic, plus methylated, metabolites as As	Urine	*

* - For sampling details, please see the source document.

Appropriate engineering controls

Provide sufficient general/local exhaust ventilation to maintain inhalation exposures below current exposure limits and areas below explosive dust concentrations. Shower, hand and eye washing facilities near the workplace are recommended.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields or safety goggles when sawing or cutting.

Skin protection

Hand protection

When handling wood, wear leather or fabric gloves.

Other

Wear normal work clothes and safety shoes. Use of an impervious apron is recommended.

Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Use a NIOSH–approved respirator if there is a potential for exposure to dust exceeding exposure limits (See 29 CFR 1910.134, respiratory protection standard).
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	If wood dust contacts the skin, workers should wash the affected areas with soap and water. Clothing contaminated with wood dust should be removed, and provisions should be made for the safe removal of the chemical from the clothing. Persons laundering the clothes should be informed of the hazardous properties of wood dust. A worker who handles wood dust should thoroughly wash hands, forearms, and face with soap and water before eating, using tobacco products, using toilet facilities, applying cosmetics, or taking medication. Workers should not eat, drink, use tobacco products, apply cosmetics, or take medication in areas where wood dust is handled, or processed. Observe any medical surveillance requirements.

9. Physical and Chemical Properties

Appearance

Physical state	Solid.
Form	Chips. Dust.
Color	Yellow/green.
Odor	Wood odor.
Odor threshold	Not available.
pH	Not applicable.
Melting point/freezing point	Not applicable.
Initial boiling point and boiling range	Not applicable.
Flash Point	Not available.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Combustible dust.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not applicable.
Vapor density	Not applicable.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Highly insoluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not available.
Viscosity	Not applicable.

10. Stability and reactivity

Reactivity	The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable at normal conditions.
Possibility of hazardous reactions	Hazardous reactions do not occur.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Minimize dust generation and accumulation. Avoid contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Toxic vapors from wood and preservative may be given off in a fire. Ash will contain free arsenic and chromium and may be toxic.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Wood dust, treated or untreated, is irritating to the nose, throat and lungs. Prolonged or repeated inhalation of wood dusts may cause respiratory irritation, recurrent bronchitis and prolonged colds. Some species may cause allergic respiratory reactions with asthma-like symptoms in sensitized individuals. Prolonged exposure to wood dusts by inhalation has been reported to be associated with nasal and paranasal cancer.
Skin contact	Handling may cause splinters. Prolonged contact with treated wood and/or treated wood dust, especially when freshly treated at the plant, may cause irritation to the skin. Abrasive handling or rubbing of the treated wood may increase skin irritation. Some wood species, regardless of treatment, may cause dermatitis or allergic skin reactions in sensitized individuals.
Eye contact	Dust may irritate the eyes.
Ingestion	Not likely, due to the form of the product. However, ingestion of dusts generated during working operations may cause nausea and vomiting. Certain species of wood and their dusts may contain natural toxins, which can have adverse effects in humans.
Symptoms related to the physical, chemical and toxicological characteristics	Wood dust: May cause nasal dryness, irritation and mucostasis. Coughing, wheezing, sneezing, sinusitis and prolonged colds have also been reported. Depending on wood species may cause respiratory sensitization and/or irritation. Symptoms can include irritation, redness, scratching of the cornea, and tearing. May cause eczema-like skin disorders (dermatitis). Airborne treated or untreated wood dust may cause nose, throat, or lung irritation and other respiratory effects.

Information on toxicological effects

Acute toxicity	Not expected to be acutely toxic.
Skin corrosion/irritation	Dust may irritate skin.
Serious eye damage/eye irritation	Dust may irritate the eyes.
Respiratory or skin sensitization	
ACGIH Sensitization	
Wood/Wood dust (CAS N/A)	Dermal sensitization. Respiratory sensitization.
Respiratory sensitization	Exposure to wood dusts can result in hypersensitivity.
Skin sensitization	Exposure to wood dust can result in the development of contact dermatitis. The primary irritant dermatitis resulting from skin contact with wood dusts consist of erythema, blistering, and sometimes erosion and secondary infections occur.
Germ cell mutagenicity	No component of this product present at levels greater than or equal to 0.1% is identified as a mutagen by OSHA.
Carcinogenicity	May cause cancer by inhalation. Untreated wood dust or saw dust: The International Agency for Research on Cancer (IARC) classifies untreated wood dust as a Group I human carcinogen. The classification is based primarily on IARC's evaluation of increased risk in the occurrence of adenocarcinomas of the nasal cavities and paranasal sinuses associated with occupational exposures of untreated wood dust. Epidemiological studies have been reported on carcinogenic risks of employment in the furniture-making industry, the carpentry industry, and the lumber and sawmill industry. IARC has reviewed these studies and reports that there is sufficient evidence that nasal carcinomas have been caused by employment in the furniture-making industry where the excess risk is associated with exposure to untreated wood dust or sawdust from hardwood species. IARC concluded that epidemiological data are not sufficient to make a definite assessment of the carcinogenic risk of employment as a carpenter or worker in a lumber mill or sawmill.

IARC Monographs. Overall Evaluation of Carcinogenicity

Wood/Wood dust (CAS N/A)	1 Carcinogenic to humans.
Arsenic Pentoxide (CAS 1303-28-2)	1 Carcinogenic to humans.
Trivalent Chromium (CAS 1308-38-9)	3 Not classifiable as to carcinogenicity to humans.

NTP Report on Carcinogens

Wood/Wood dust (CAS N/A)	Known To Be Human Carcinogen.
Arsenic Pentoxide (CAS 1303-28-2)	Known To Be Human Carcinogen.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Arsenic Pentoxide (CAS 1303-28-2)	Cancer
-----------------------------------	--------

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
------------------------------	--

Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not likely, due to the form of the product.
Chronic effects	Chronic exposure to wood dusts can result in pneumonitis, and coughing, wheezing, fever and the other signs and symptoms associated with chronic bronchitis.
Further information	All wood, whether treated with CCA or not, requires the use of PPE to avoid exposure to wood dust from sawing and sanding although not commonly done on the EPA pesticide label-directed applications of CCA. Upon treatment with wood, the metals in CCA transform to form an insoluble complex that remains tightly bound to wood fibers under most conditions of use. The effects of occupational exposure to the chrome-copper-arsenic preservative used to treat CCA wood has been evaluated in multiple independent epidemiology and worker exposure studies. In each case the authors concluded that workers exposed on a daily basis to these preservatives were at no increased risk of death or disease as a result of their exposure. Several exposure studies found air concentrations of arsenic and chromium below the limit of detection for outdoor carpentry work (drilling, sanding, sawing) using CCA treated lumber, poles and marine piles. Recreational exposure to children using CCA treated wood playground equipment has been evaluated by various government agencies and other groups. The results of one study indicated that the amount of arsenic transferred from the wood surface to the child is within the normal variation of total arsenic exposure to children and that the maximum risks of skin cancer associated with the wood exposure approximates the skin cancer risk from the sunlight experienced during play periods. Leaf, stem, and fruit of grape plants grown adjacent to CCA treated wood poles did not take up preservative components from the poles above background levels (limit of detection 0.2 and 0.05 ppm for chrome and arsenic, respectively).

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available on bioaccumulation.
Mobility in soil	The product is insoluble in water.
Mobility in general	The product is not volatile but may be spread by dust-raising handling.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. DO NOT BURN! Ash may be toxic and a hazardous waste; combustion vapors may be toxic. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
US RCRA Hazardous Waste P List: Reference	
Arsenic Pentoxide (CAS 1303-28-2)	P011
Waste from residues / unused products	Dispose in accordance with all applicable regulations. Do not discharge into drains, water courses or onto the ground.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.

IMDG Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Arsenic Pentoxide (CAS 1303-28-2) Cancer. Liver. Skin. Respiratory irritation. Nervous system. Acute toxicity.

CERCLA Hazardous Substance List (40 CFR 302.4)

Arsenic Pentoxide (CAS 1303-28-2) LISTED

Copper Oxide (CAS 1317-39-1) LISTED

Trivalent Chromium (CAS 1308-38-9) LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA) Hazard categories

Hazard categories Carcinogenicity
Combustible dust

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
Arsenic Pentoxide	1303-28-2	1		100	10,000

SARA 311/312 Hazardous chemical

Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Arsenic Pentoxide	1303-28-2	< 3
Copper Oxide	1317-39-1	<1.5
Trivalent Chromium	1308-38-9	<3.5

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Arsenic Pentoxide (CAS 1303-28-2)

Trivalent Chromium (CAS 1308-38-9)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130) Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Arsenic Pentoxide (CAS 1303-28-2)

Trivalent Chromium (CAS 1308-38-9)

US. New Jersey Worker and Community Right-to-Know Act

Arsenic Pentoxide (CAS 1303-28-2)

Copper Oxide (CAS 1317-39-1)

Trivalent Chromium (CAS 1308-38-9)

Wood/Wood dust (CAS N/A)

US. Pennsylvania Worker and Community Right-to-Know Law

Arsenic Pentoxide (CAS 1303-28-2)

Trivalent Chromium (CAS 1308-38-9)

Wood/Wood dust (CAS N/A)

US. Rhode Island RTK

Arsenic Pentoxide (CAS 1303-28-2)
Copper Oxide (CAS 1317-39-1)
Trivalent Chromium (CAS 1308-38-9)

US. California Proposition 65

 **WARNING.** Drilling, sawing, sanding or machining wood products can expose you to wood dust, a substance known to the State of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection. For more information, go to www.P65Warnings.ca.gov/wood.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	04-05-2015
Revision date	10-30-2019
Version #	06
Further Information	HMIS® is a registered trade and service mark of the NPCA. E - Safety Glasses, Gloves, Dust Respirator

PERCENTAGE OF ACTIVE INGREDIENTS PER RETENTION LEVEL

	0.25 pcf	0.40 pcf	0.60 pcf	1.0 pcf	2.5 pcf
Arsenic Pentoxide	0.3%	0.4%	0.6%	1.0%	2.6%
Copper Oxide	0.15%	0.2%	0.3%	0.6%	1.3%
Chromium Trioxide	0.4%	0.6%	0.9%	1.4%	3.3%
Wood/Wood dust*	84.28%	83.98%	83.45%	82.45%	78.88%

* This represents the maximum amount of wood dust that could be generated if the wood was completely machined.

The above percentages are based on the applicable retention, a wood density of 32 pcf., and a moisture content of 15%, the above values may vary due to the variability of treatment and the natural variability of wood.

HMIS® ratings

Health: 1*
Flammability: 1
Physical hazard: 0
Personal protection: E

NFPA ratings**Disclaimer**

Supplier cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

Wetland Functions and Values Report

Prepared for:

196A Dover Point Road, Dover, NH

Prepared by Matthew Cardin, CWS

Date: February 2023

INTRODUCTION

This Wetland Functions and Values Report is in support of a NHDES Major Wetland Permit application for a proposed tidal docking structure at 196A Dover Point Road, Dover, New Hampshire. The project site is identified as Tax Map I89, Lot H0, which is a 5.01 acre, developed residential lot with approximately 215 feet of water frontage on the Piscataqua River. The proposed tidal dock structure project requires impacts to tidal wetlands. The surrounding land use is residential with similar residential docking structures.

METHODS

Data Collection

The tidal wetlands associated with this project area were identified and characterized through field surveys and review of available information. Matt Cardin, CWS conducted multiple site visits on September, 2021, January, 2021 and October, 2022 to conduct field assessments and collect necessary information to complete a functions and values assessment. Accompanied with the assessment is a formal record search with the New Hampshire Natural Heritage Bureau (NHB) regarding documented rare species or natural communities within the vicinity of the project site. An additional rare plant survey was conducted by a qualified botanist to survey the project site and nearby vicinity for the subject species provided in the NHB data record report.

Wetland Functions and Values Assessment

Matt Cardin, CWS assessed the tidal wetland resources in the project vicinity for the ability to provide functions and values and assess the potential effects of the proposed project may have on their ability to continue to provide those functions and values. The functions and values assessment method used is the *Highway Methodology Workbook, Wetland Functions and Values: A Descriptive Approach*¹. This method uses 13 functions and values in evaluating the wetland resource as outlined below.

o **Groundwater Interchange (Recharge/Discharge)**

This function considers the potential for the project area wetlands to serve as groundwater recharge and/or discharge areas. It refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

o **Floodwater Alteration (Storage and Desynchronization)**

This function considers the effectiveness of the wetlands in reducing flood damage by attenuating floodwaters for prolonged periods following precipitation and snow melt events.

o **Fish and Shellfish Habitat**

This function considers the effectiveness of seasonally or permanently flooded areas within the subject wetlands for their ability to provide fish and shellfish habitat.

¹ U.S. Army Corps of Engineers, 1999. *The Highway Methodology Workbook Supplement, Wetland Functions and Values: A Descriptive Approach*. U.S. Army Corps of Engineers. New England Division. 32pp. NAEEP-360-1-30a.

o Sediment/Toxicant Retention

This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland to function as a trap for sediments, toxicants, or pathogens, and is generally related to factors such as the type of soils, the density of vegetation, and the position in the landscape.

o Nutrient Removal/Retention/Transformation

This wetland function relates to the effectiveness of the wetland to prevent or reduce the adverse effects of excess nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers, or estuaries.

o Product Export (Nutrient)

This function relates to the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

o Sediment/Shoreline Stabilization

This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion, primarily through the presence of persistent, well-rooted vegetation.

o Wildlife Habitat

This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered.

o Recreation (Consumptive and Non-Consumptive)

This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting, and other active or passive recreational activities.

o Uniqueness/Heritage

This value relates to the effectiveness of the wetland as a site for an “outdoor classroom” or as a location for scientific study of research.

o Visual Quality/Aesthetics

This value relates to the visual and aesthetic qualities of the wetland.

o Endangered Species Habitat

This value considers the suitability of the wetlands to support threatened or endangered species.

FUNCTIONS AND VALUES ASSESSMENT

The results of the wetland functions and values are presented below as well as a discussion regarding the results and the potential changes to wetland functions and values as a result of the proposed project:

Groundwater Interchange (Recharge/Discharge)

The site is not underlain by an identified sand and gravel aquifer and the wetlands are not underlain by sand or gravel. It is unlikely that significant groundwater recharge is occurring within the tidal wetlands.

Floodwater Alteration (Storage and Desynchronization)

The tidal wetlands and the abutting waterbody, Piscataqua River, receive floodwaters from several tributaries and surrounding watersheds and therefore is considered a principal function based on the size of the watershed and effects of sea level rise (slr).

Fish and Shellfish Habitat

The tidal wetland area provides fish and shellfish habitat; therefore, is considered a principal function.

Sediment/Toxicant Retention

The tidal wetland (on site) contains dense vegetation and a significant source of nutrients, contributing to its ability to provide this function.

Production Export (Nutrient)

The tidal wetland is associated with a larger tidal ecosystem that provides fish and wildlife habitat that contributes to commercial and recreational fisheries opportunities, and nutrients are transferred over several trophic levels within the overall marine ecosystem, therefore this is considered a principal function.

Sediment/Shoreline Stabilization

Due to the tidal environment and exposure to wave energy at this location, sediment/shoreline stabilization is considered a principal function.

Wildlife Habitat

The wetland area is part of a network of marine/shoreline habitat to a variety of dependent species, therefore it is considered a principal function.

Recreation (Consumptive and Non-Consumptive)

The larger tidal wetland and waters associated with Piscataqua River provides a large amount of both recreational opportunities including water resource dependent activities, fishing, hunting, and bird watching, therefore this is considered a principal function.

Education/Scientific Value

The tidal wetland is part of a larger marine ecosystem that is regionally specific and is accessed by a number of public access areas, therefore this is a principal function.

Uniqueness/Heritage

The tidal wetland and the Piscataqua River are unique to the seacoast area of New Hampshire. There are also extensive historical documentation and preservation to pre and post contact period activities associated with Piscataqua River, therefore this is a principal function.

Visual Quality/Aesthetics

The wetland areas and associated waterways of the Piscataqua River watershed provide aesthetically pleasing coastal views that are enjoyed from surrounding areas of the project area as well as the water, therefore making this a principal function.

PROPOSED IMPACTS

This report is in support to a NHDES Major Impact Wetland Permit Application to permit approximately 712 sq. ft. of permanent impact to tidal wetland for the re-construction and extension of a tidal docking structure that consists of replacing the landward 50' section of the existing pier and replacing the 30' gangway with a 40' gangway and replacing the 10' x 20' float with an inline 6' x 12' float connected to a 8' x 40' float secured with (6) chain and anchors that provides 2 slip on 215 feet of frontage along the Piscataqua River.

CONCLUSIONS

The proposed impact area is a tidal wetland area that is part of a larger marine ecosystem along New Hampshire's coastline and provided nine principal functions and values when assessed for localized impacts as well as considering the larger ecosystem as a whole. The following are the nine principal functions and values: floodflow alteration, fish and shellfish habitat, production export, sediment/shoreline stabilization, wildlife habitat, recreation, education/scientific value, uniqueness/heritage, and visual quality aesthetics. Although the proposed structure proposes a change to the waterfront, there will not be impacts to the functions and values of the wetland area and the greater associated marine ecosystem.

The proposed impacts resulting from the proposed dock and dock design have been minimized to the extent practicable, while allowing reasonable use of the property. The proposed docking structure has been designed to utilize pilings within the subtidal zone, tidal wetland and undeveloped TBZ so to minimize the overall footprint of the overall structure. The number of pilings has been reduced to the least amount possible in order to properly support the three components of the structure: the fixed pier, the gangway and the float dock. The proposed docking structure will not have a negative impact on the wetland's ability to continue to provide the nine principal functions and values identified above. The tidal dock structure will not negatively affect flood or tidal flow within the wetland area due to the inconsequential amount of displacement proposed being limited to just the pilings. The tidal wetland fish and

shellfish habitat is not expected to be impacted due to the lack impacts below the mean low low water line, which will mitigate potential impacts to anadromous and catadromous fish known to occur in the tidal waterbody system. The structure will not have an impediment on fish or shellfish movement through the tidal wetland as piles will be sufficiently spaced apart to allow safe passage through the structure. Construction will occur during low water and/or dry periods of the tide cycle to limit impacts to the surrounding water quality. Additionally, turbidity curtains will be installed to limit suspended solids in the water column when the tide cycle inundates the worksite. The tidal wetland will be protected by constructing a dock that extends far enough beyond the vegetated wetland portions. The dock itself will be intended to access the associated marine ecosystem. The dock structure has been designed to a suitable size for the associated property. The dock structure is located within a wetland that contributes to the education value, uniqueness heritage and visual quality aesthetics, however the dock structure will not have an impact on the ability for the overall marine ecosystem to continue to provide those functions and values.

The purpose of the proposed dock structure is to provide recreational boating access utilizing the previously developed tidal buffer zone as access point. There will be no earth disturbance or grading required associated with the proposed docking structure. All work will be performed from a crane barge during periods of low tide. Piles will be driven during ebb tides where water is low or not present within the disturbance area, therefore temporary disturbance associated with construction are not expected. Piles will be driven using a vibratory hammer positioned on the work barge. The components of the dock structure are prefabricated and transported and installed via a crane barge.

The construction sequence for the proposed structure are as follows:

- Mobilize crane barge, push boat and work skiff containing prefabricated components (float, gangway) and materials (piles, associated timber and hardware) to the site during high-tide.
 - The barge will be positioned alongside the proposed location of the float and close enough to land where navigability won't be affected. There is no emergent or saltmarsh vegetation within the temporary workspace area.
- All work is to be done during low-tide intervals where there is little to no flowing water within the work area. A temporary turbidity curtain will be placed for the duration of construction to contain suspended solids during periods of inundation once construction has temporarily stopped.
- Piles will be mechanically impact or vibratory driven by crane to a depth of refusal or approximately 10'. There will be no excavation required as part of this project. Little to no foot traffic will be required to drive piles.
- The float and gangway to be fabricated off-site and mobilized to the site via barge.
- The float and gangway will be lifted from the barge via crane and placed into position and installed.
- Upon complete installation, the turbidity curtain will be removed.

Based on the assessment of the current functions and values of the tidal wetland areas and overall marine ecosystem, the proposed tidal docking structure and the construction methods, we believe the proposed project will not have a significant impact on the tidal wetland and marine ecosystem's ability to provide the evaluated functions and values as described.

WETLAND
FUNCTIONS AND VALUES
EVALUATION FORM

Wetland Function-Value Evaluation Form

Total area of wetland NA Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Residential Distance to nearest roadway or other development 0'

Dominant wetland systems present Intertidal (E2US1/2/3) Contiguous undeveloped buffer zone present yes

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? NA

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list) NA

Wetland I.D. 196A Dover Point Rd.

Latitude _____ Longitude _____

Prepared by: MRC Date 2/20/2023

Wetland Impact:
Type Tidal Area 712

Evaluation based on:
Office X Field X

Corps manual wetland delineation
completed? Y X N _____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
 Groundwater Recharge/Discharge	Y	7,	N	Tidal wetland without any presence of sand or gravel or identified aquifer recharge zone.
 Floodflow Alteration	Y	1, 4, 6, 7, 8, 9, 10, 11,	Y	Tidal wetlands associated with marine ecosystem is a primary function for altering and retaining flood water from tributaries.
 Fish and Shellfish Habitat	Y	1, 3, 4, 5,	Y	Area is known habitat to marine fish and shellfish, including anadromous fish.
 Sediment/Toxicant Retention	Y	3, 4, 8, 9,	N	The immediate tidal wetland lacks vegetation, sources and low water retention time
 Nutrient Removal	Y	1, 2, 5, 7,	N	The immediate tidal wetland lacks vegetation, sources and low water retention time
 Production Export	Y	1, 3, 4, 5, 6, 13,	Y	Immediate wetland provides habitat for larger marine ecosystem that provides commercial and recreational fishery
 Sediment/Shoreline Stabilization	Y	1, 2, 6, 7, 10, 11,	Y	High wave and tidal activity at this location makes wetland and shoreline critical for shoreline stabilization
 Wildlife Habitat	Y	3, 6, 8, 12, 18	Y	Wetland is associated with larger marine ecosystem utilized by permanent and seasonal marine and bird species
 Recreation	Y	2, 5, 7, 8, 9, 12	Y	Tidal wetland is associated with larger marine ecosystem that has many recreational opportunities utilized by the general community
 Educational/Scientific Value	Y	5, 13, 14,	Y	The tidal wetland is a unique ecosystem to the region where many opportunities exist within the larger marine ecosystem
 Uniqueness/Heritage	Y	1, 3, 8, 10, 14, 17, 19, 22, 27, 28.	Y	The associated marine ecosystem is unique for the region and contains documented historical events both pre and post European contact
 Visual Quality/Aesthetics	Y	6, 7, 8, 9, 12	Y	The associated marine ecosystem provides aesthetic coastline that are visible from surrounding uplands and from the wtaer.
ES Endangered Species Habitat	Y		N	Sparsely vegetated intertidal system identified within the site.
Other				

Notes:

* Refer to backup list of numbered considerations.

Coastal Vulnerability Assessment

Prepared for:

196A Dover Point Road, Dover, NH

Prepared by Matthew Cardin, CWS

Date: February 2023

INTRODUCTION

This Wetland Functions and Values Report is in support of a NHDES Major Wetland Permit application for a proposed tidal docking structure at 196A Dover Point Road, Dover, New Hampshire. The project site is identified as Tax Map I89, Lot H0, which is a 5.01 acre, developed residential lot with approximately 215 feet of water frontage on the Piscataqua River. The proposed tidal dock structure project requires impacts to tidal wetlands. The surrounding land use is residential with similar residential docking structures.

METHODS

In Summer of 2021 and fall of 2022, Matthew Cardin, NHCWS visited the site to conduct evaluations for wetlands functions and values and for coastal characteristics. The CVA was completed utilizing the NH Coastal Flood Risk Science and Technical Advisory Panel (2019), New Hampshire Coastal Flood Risk Summary part: Guidance for Using Scientific Projections. Report Published by the University of New Hampshire (referred to herein as “Guidance Document”).

Step 1.1 Project Type and Goal

The project is for a proposed tidal docking structure on the residential lot for the purposes of providing the applicant with recreational boating access to the Piscataqua River. The project entails replacing a section of an existing fixed pier, replacing an existing gangway with and an expanding existing float system to be secured by helical anchors and chains. The pier, piles and pre-assembled dock components will be placed using a crane barge temporarily located at the shorefront location.

Step 1.2 Project Area

The project is located at 196A Dover Point Road, Dover, NH, Map I89, Lot H0 and consists of approximately 5.01 acres of developed residential property with approximately 215 +/- of frontage along Piscataqua River. The site is located in the exact location of the existing tidal docking structure which extends from the wetland buffer location to the riparian zone, which consists of upper tidal marsh, salt marsh and an abrupt transition tidal wetland mudflat (E2US3). The proposed docking structure will consist replacing a section of the existing 100' x 4' pier with the most landward 50' section to be replaced at an elevation approximately two feet higher than the existing, replace the existing gangway with a 40' x 3' gangway, and replace the existing float system with an inline 6' x 12' connected to a 8' x 40' float secured by (6) helical anchors and chains. Construction access to the site will be from barge to install piles and hoist pre-assembled components (gangway and float) into position. Alternative access will be from land and through the subject property. The proposed dock extension takes advantage of the existing sections of the pier that are in good shape while rebuilding the section requiring to be replaced meeting relative sea level rise and design standards meeting 1:1 height to width ratio.

Step 1.3 Timeframe for the Project

The desired useful life of the project is intended to be in perpetuity to the current residential use of the property. Based on historical use of the property as a residential lot, it is reasonable to expect the current use to continue as such for the foreseeable future. The life expectancy of the structure is dependent on the maintenance and care by the landowners with the expectancy of replacing piles, pier, floats and gangway in the next 30-50 years.

Step 2.1 Project Risk Tolerance

The proposed project is considered to have a relatively high project risk tolerance for the following reasons. The proposed structure has a relatively low replacement cost if needed due to storm or flood damage. The structure is easily adaptable at a time beyond the life expectancy of the structure, at which point the fixed pier can be replaced at a suitable elevation to account for accurate sea level rise projections based on the data at that time.

Step 2.2 Tolerance to Flood Risk

The proposed dock structure is considered to have a medium to high risk tolerance as the structure itself can be easily repaired, adapted and/or removed if need be without little impact to the property or environment.

The risk tolerance to access and service does not apply to the proposed project as it occurs on private property.

The goal of the project is to provide recreational opportunity for the applicant to access Piscataqua River. It is not anticipated that the project goal will change for as long as the current use of the property remains. Based off the SLR models, the property itself has a moderate flood risk as a large property with the residential use portion being set away from the water front along the Piscataqua River. The proposed structure is adaptable to flood risk and SLR by increasing the elevation of the pier, however, if unreasonable, the dock structure can be removed with little to no impact to the environment.

Step 3.1 Relative Sea Level Rise Scenario (RSLs)

Based on the Guidance Document shown in Step 3, Table A, the RSLs for the proposed tidal dock structure as a high risk tolerance project/structure, is considered to be on the lower magnitude, higher probability scale. Based on this assessment, the probably sea level rise from 2030 to 2150 is as follows:

Timeframe	Sea level rise (ft)
2030	0.7
2050	1.3
2100	2.9
2150	4.6

Step 3.2 – RSLR Impacts to the Project

The proposed dock structure has a fixed point on land at the access landing where the gangway will be attached to. The access point is proposed to be approximately 10 feet from the location of the highest observable tide line (HOTL), approximately El. 4.83' (NAVD88). Based on the RSLs described above, the RSLR relative to the HOTL elevation are provided in the table below.

The project site is subject to risks caused by RSLR due to the relatively flat topography of the surrounding land above the HOTL and associated dwelling structure associated with the residential lot. The proposed docking structure is subject to risk associated with RSLR specifically changes caused by erosion and increase in water level. These factors could affect the access points to where the proposed docking structure is located along the HOTL area. However, the overall docking structure is adaptable to the factors listed above by increasing the height of the pier and/or extending the access point beyond the RSLR adjusted HOTL.

Timeframe	Sea level rise (ft)	HOTL* + SLR (El. ~ 4.83' + SLR)
2030	0.7	5.53
2050	1.3	6.13
2100	2.9	7.73
2150	4.6	9.43

*NAVD88

Step 4.1 – RSLR Coastal Storm Assessment

The proposed docking structure is adjacent to the Little Bay waterbody, which will be subject to 100 and 500 year storms, however the proposed docking structure is consistent with adjacent properties with similar docking structures. Based on the proposed structure having high risk tolerance as a maintainable/adaptable structure to RSLR, the coastal storm impact assessment is low for the overall project.

Step 5.1 – Projected RSL-Induced Groundwater Rise

Based on the Sea-Level Rise Scenarios provided, there is no project groundwater rise associated with RSLR on the project site that will affect the proposed structure.

Step 5.2 – Project Groundwater Depth at the Project Location

Based on the observations gathered during site visits, the estimated seasonal high water table is no shallower than 20" deep and likely extends to 30" plus deep below the soil surface.

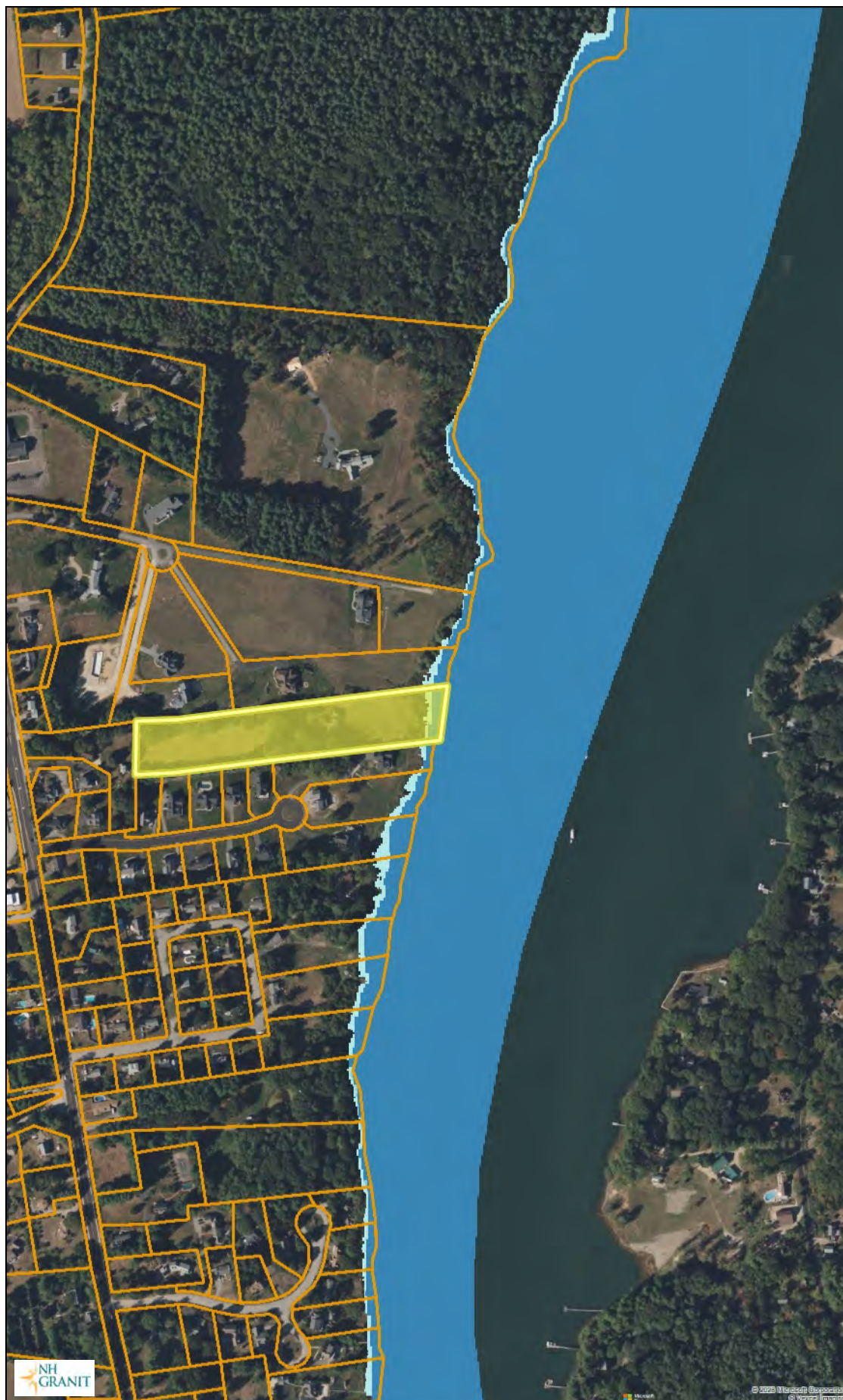
Step 6 – Extreme Precipitation Events

The proposed project has high tolerance to flood risk due to the structure being anchored to the ground with the ability to allow stormwater to pass through and inundate the dock structure without causing harm to the structure or the environment.

Step 7 – Cumulative Coastal Flood Risk to the Project

Based on the high risk tolerance of the proposed tidal dock structure as described above and combined with the other factors assessed including RSLR, coastal storms, RSLR-induced groundwater rise, extreme precipitation occurring together, the tidal dock contains some risk of damage due to coastal flooding, however the structure is easily maintainable and adaptable to the effects and changes caused by the factors mentioned above.

Map by NH GRANIT - 196A Dover Point Road, Dover, NH



Legend

Parcels - polygons

Parcel Polygons

Attributes for Additional Lines

MHHW + 1-ft SLR

0 - 2

2 - 4

4 - 6

6 - 8

8 - 10

Map Scale

1: 6,494

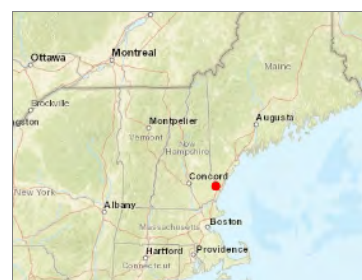
© NH GRANIT, www.granit.unh.edu

Map Generated: 2/20/2023



Notes

MHHW + 1' Sea Level Rise



Map by NH GRANIT - 196A Dover Point Road, Dover, NH



Legend

Parcels - polygons

Parcel Polygons

Attributes for Additional Lines

MHHW + 2-ft SLR

0 - 2

2 - 4

4 - 6

6 - 8

8 - 10

10 +

Map Scale

1: 6,494

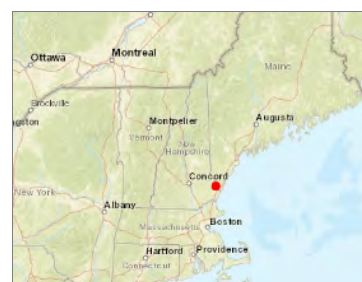
© NH GRANIT, www.granit.unh.edu

Map Generated: 2/20/2023



Notes

MHHW + 2' Sea Level Rise



Map by NH GRANIT - 196A Dover Point Road, Dover, NH



Legend

Parcels - polygons

Parcel Polygons

Attributes for Additional Lines

MHHW + 4-ft SLR

0 - 2

2 - 4

4 - 6

6 - 8

8 - 10

10 +

Map Scale

1: 6,494

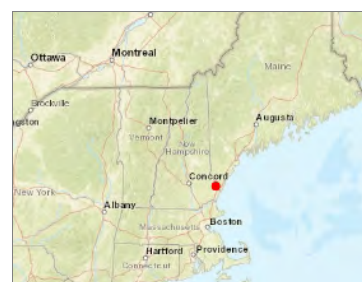
© NH GRANIT, www.granit.unh.edu

Map Generated: 2/20/2023



Notes

MHHW + 4' Sea Level Rise



Map by NH GRANIT - 196A Dover Point Road, Dover, NH



Legend

Parcels - polygons

Parcel Polygons

Attributes for Additional Lines

MHHW + 6-ft SLR

0 - 2

2 - 4

4 - 6

6 - 8

8 - 10

10 +

Map Scale

1: 6,494

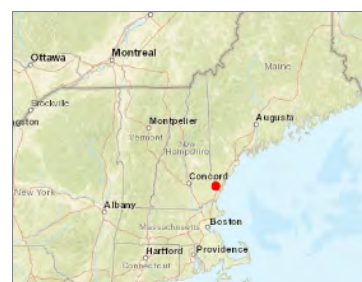
© NH GRANIT, www.granit.unh.edu

Map Generated: 2/20/2023



Notes

MHHW + 6' Sea Level Rise



Map by NH GRANIT - 196A Dover Point Road, Dover, NH



Legend

Parcels - polygons

Parcel Polygons

Attributes for Additional Lines

MHHW + 8-ft SLR

0 - 2

2 - 4

4 - 6

6 - 8

8 - 10

10 +

Map Scale

1: 6,494

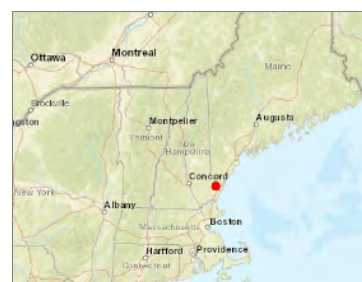
© NH GRANIT, www.granit.unh.edu

Map Generated: 2/20/2023



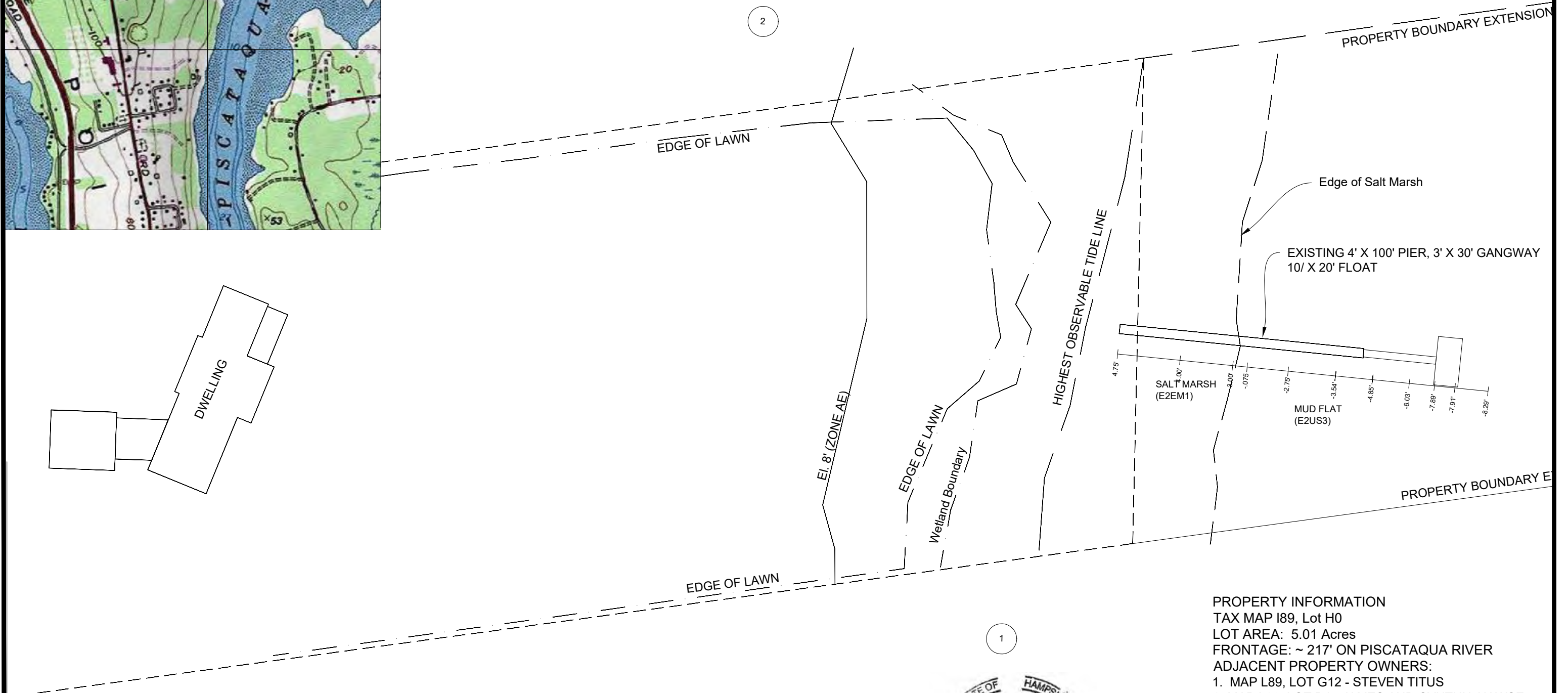
Notes

MHHW + 8' Sea Level Rise



VICINITY MAP

SCALE: 1" = 40'



2. Water depth measurements portrayed in NAVD88 and determined by R. Alex Ross, LLS # 907



Plans Prepared by
Matthew R. Cardin NH CWS #284

DATE: JANUARY 22, 2023

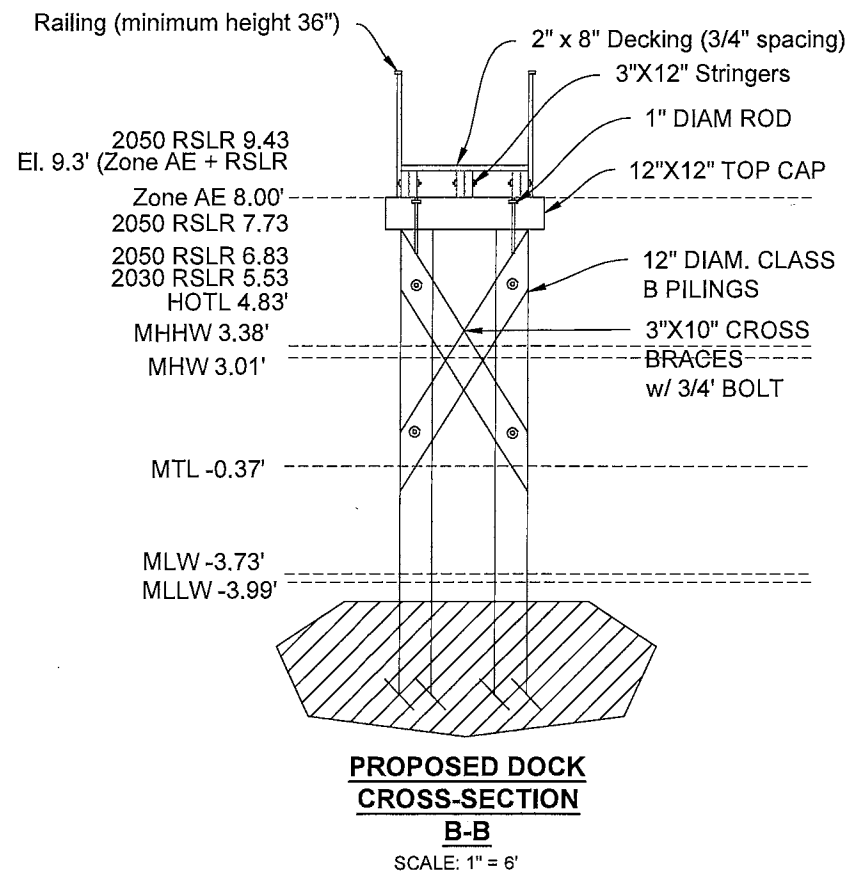
SCALE: 1" = 40'



Prepared By:
Matthew Cardin, NH CWS

DATE: JANUARY 22, 2023

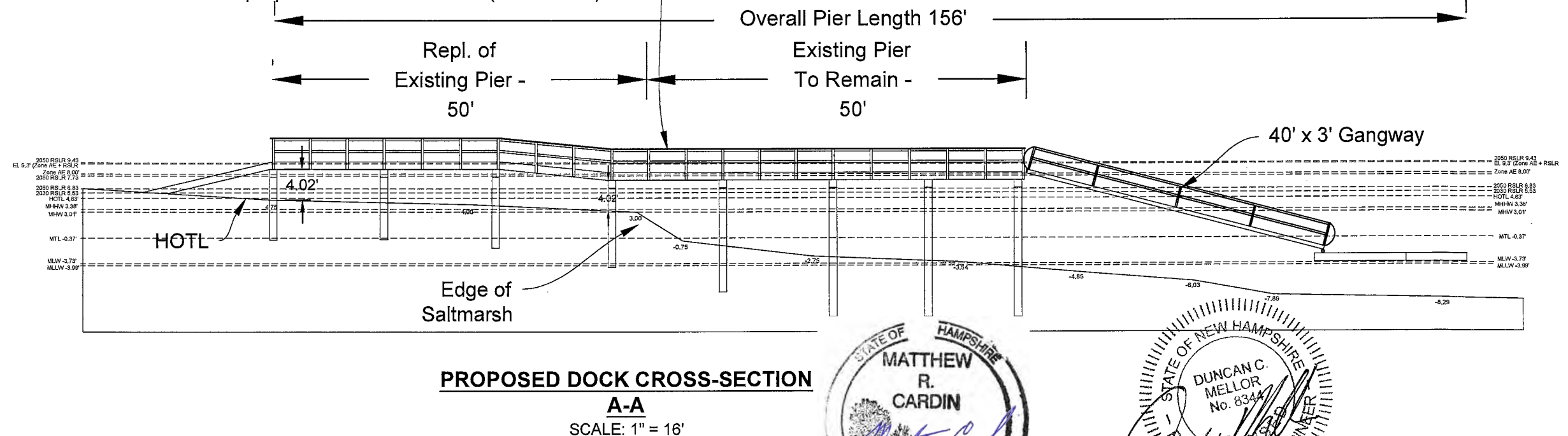
1. All materials with dock structure to be CCA treated lumber and galvanized hardware
2. Float and gangway are to be pre-assembled off-site. CCA treated lumber to be pre-treated prior to arrival at site.
3. Per NH Fish and Game and NOAA Fisheries there are no time of year restrictions.
4. Barge, push boat and skiff to be mobilized during high-tide and positioned alongside existing pier location up to, but not on or within the vegetated salt marsh area.
5. Sections of the pier piles unable to be reached from the barge to be installed with small duty equipment access from the upland. Temporary matting to be placed within the alignment of the pier to install piles as necessary and mats to be removed as soon as construction is completed.
6. All work to be done during low-tide intervals where there is no flowing water within the work area.
7. Temporary turbidity curtain to be placed around work area during high tide to once construction has temporarily stopped.
8. The pre-assembled float and gangway to be lifted from the barge via crane and placed into position and installed.



ENGINEERING, RESILIENCY AND BASIS OF ANALYSIS NOTES:

1. THE RESILIENCY RECOMMENDATION AND BASIS OF ANALYSIS BY CIVILWORKS NEW ENGLAND (CNE) FOR THIS PROJECT IS LIMITED TO THE RECOMMENDATIONS AND ANALYSIS IN THESE NOTES. THE CLIENT HAS PROVIDED THE SURVEY DATA AND FLOOD ELEVATIONS UPON WHICH CNE IS RELYING FOR THE ANALYSIS. CNE HAS NOT FIELD VERIFIED ANY SURVEY DATA AND CANNOT WARRANTY THE ACCURACY OF THE DATA PROVIDED.
2. BASIC WIND AND WAVE ANALYSIS HAS BEEN PERFORMED TO ESTABLISH PILE AND MOORING LATERAL TESTING LOADS DURING CONSTRUCTION OF THE NEW STRUCTURES TO PROVIDE A REASONABLE LEVEL OF CONFIDENCE THAT THE PROPOSED DOCK MOORINGS AND PIER PILES WILL BE ADEQUATE TO RESIST ENVIRONMENTAL LOADS FROM WIND AND WAVES AT THIS LOCATION WITH WATER LEVEL OF THE FEMA 100 YR FLOOD PLUS A SEA LEVEL RISE ALLOWANCE PROVIDED BY MATTHEW CARDIN, CWS, USING NHDES GUIDELINES.
3. BASIC WIND SPEED FOR THE SITE FOR THE FLOAT IS 84 MPH WITH LOAD FACTOR REMOVED PER ASCE 7-16 FOR RISK CATEGORY 1, 3 SECOND GUST. SURFACE ROUGHNESS C AND EXPOSURE C, GIVING A WIND PRESSURE OF 15.3 PSF.
4. BASIC WIND SPEED FOR THE SITE FOR THE PIER IS 90 MPH WITH LOAD FACTOR REMOVED PER ASCE 7-16 FOR RISK CATEGORY 2, 3 SECOND GUST. SURFACE ROUGHNESS C AND EXPOSURE C, GIVING A WIND PRESSURE OF 17.7 PSF.
5. WIND PRESSURE ON FLOAT: AS SEVERAL DAYS OF ADVANCED NOTICE IS ANTICIPATED AHEAD OF SUCH SEVERE WINDS, IT IS ASSUMED A DOCKED BOAT WOULD BE REMOVED FROM THE DOCK AND ONLY THE FLOAT WILL BE SUBJECT TO THE ENVIRONMENTAL LOADING. WITH A FLOAT FREEBOARD OF 1.2 FT AND 28 OR 40 FT LENGTH ON FOUR MOORINGS, THE WIND LOAD PERPENDICULAR TO SHORE IS ABOUT 730 POUNDS, AND PARALLEL TO SHORE ABOUT 510 POUNDS.
6. THE WIND PRESSURE ON THE PIER, HAS LATERAL WIND LOAD PER PILE BENT (TWO PILES) IS ABOUT 255 POUNDS.
7. NEW TIMBER PIER PILE STRENGTH WAS CHECKED FOR IMPACT OF A DRIFTING ICE FLOE WITH DIMENSIONS OF 20 FT BY 12 FT BY 1 FOOT DRAFT AND A DRIFT SPEED OF 0.5 FPS AND PILE BENDING STRESS WAS ACCEPTABLE.
7. AVERAGE WIND WAVE FETCH (9 RADIALS AT 3 DEG) FROM SOUTH IS 4,800 FT AND 5,240 FT FROM THE NNE. THE BASIC WIND SPEED (ASCE 7-16) IS ADJUSTED FROM A 3 SECOND GUST TO A LONGER DURATION NEEDED TO BUILD FULLY DEVELOPED WIND WAVES, GIVES A SIGNIFICANT WAVE HEIGHT OF 1.9 FT WITH 2.1 SECOND PERIOD FOR THE FLOAT (CAT. 1) AND 2.1 FT WITH 2.1 SECOND PERIOD FOR THE PIER (CAT. 2). WITH AN AVERAGE FLOAT DRAFT OF 0.5 FT THE NON-BREAKING WAVE COULD DEVELOP 1,700 POUNDS OF LOAD PER FLOAT END, PARALLEL TO THE SHORELINE. THE LATERAL WAVE LOAD ON THE NEW PIER PILE BENTS IS 283 POUNDS USING A BREAKING WAVE (2 TO 3 FT WATER DEPTH). THE LATERAL WIND LOAD ON THE NEW PIER PILE BENTS IS 255 POUNDS.
8. THE RECOMMENDED LATERAL TEST LOAD PER FLOAT MOORING IS 1,800 POUNDS AXIAL TO PROVIDE A FACTOR OF SAFETY OF 1.5 (WAVE LOADS CONTROLLING). IT IS RECOMMENDED THAT THE FIELD LOAD TESTS BE OBSERVED BY A PROFESSIONAL ENGINEER FOR COMPLIANCE WITH THE ANALYSIS INTENT.
9. THE RECOMMENDED LATERAL TEST LOAD FOR THE NEW PIER PILE BENTS IS 380 POUNDS APPLIED AT DECK/CAP ELEVATION TO PROVIDE A FACTOR OF SAFETY OF 1.5 AND PROVE ADEQUATE PILE EMBEDMENT. IT IS RECOMMENDED THAT THE FIELD LOAD TESTS BE OBSERVED BY A PROFESSIONAL ENGINEER FOR COMPLIANCE WITH THE ANALYSIS INTENT.
10. IF NEW PILE EMBEDMENT CANNOT RESIST THESE TEST LOADS, IT IS RECOMMENDED THAT THE PILES BE DRIVEN DEEPER OR MOORINGS BE ADDED TO PROVIDE A TOTAL RESTRAINT OF 380 POUNDS PER BENT LATERAL PIER LOAD CAPACITY.

100' x 4' Existing Pier, Replace first 50' of existing pier ((8) 12" diam piles) approximately XX feet above existing height; decking to be .75" spaced decking, (3) 3" x 12" stringers and 12" x 12" top cap; Replace gangway w/ 40' x 3' gangway; Floats- Inline 6' x 12' float to perpendicular 8' x 40' float (400 sf total)



Prepared For:

JESSICA YE
196A DOVER POINT ROAD
DOVER, NH

Prepared By:

Matthew Cardin, NH CWS

PROPOSED PLANS

ON: PISCATQUA RIVER

TOWN: DOVER

SHEET: 3 OF 3

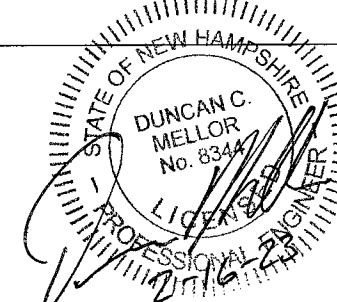
PROPOSED: DOCK STRUCTURE REPLACEMENT W/CHANGES

AT: 196A DOVER POINT ROAD STATE: NH

DATE: JANUARY 22, 2023



PLANS PREPARED BY
MATTHEW CARDIN NHCWS #284



The attached PE Stamp is limited to analysis requested by NHDES Wetlands Bureau for vulnerability assessment of the proposed structure to not break free as a result of tidal forces up to and including the 100 year recurrence event. This PE stamp does not cover survey, site engineering, or structure design, which is being performed by others.