STATE OF NEW HAMPSHIRE
INTER-DEPARTMENT COMMUNICATION

DATE: October 22, 2020

FROM: Andrew O'Sullivan
Wetlands Program Manager

AT (OFFICE): Department of Transportation
Bureau of Environment

SUBJECT Dredge & Fill Application
Center Harbor-New Hampton, 24579

TO Karl Benedict, Public Works Permitting Officer
New Hampshire Wetlands Bureau
29 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095

Forwarded herewith is the application package prepared by NH DOT Bureau of Bridge Design for the subject 26,661 impact project. This project is classified as Major per Env-Wt 407.02. The project is located on Waukewan Road over Lake Waukewan Inlet, between the Town of Center Harbor and the Town of New Hampton, NH. The proposed work consists of rehabilitation of bridge 080/040.

This project was reviewed at the Natural Resource Agency Coordination Meeting on April 19, 2017 and October 16, 2019. A copy of the minutes has been included with this application package. A copy of this application and plans can be accessed on the Departments website via the following link: http://www.nh.gov/dot/org/projectdevelopment/environment/units/program-management/wetland-applications.htm

Mitigation was triggered due to the impacts to prime wetlands and prime wetland buffers. It was determined mitigation would be provided in two forms: native vegetative plantings throughout the project area due to the prime wetland and prime wetland buffer designation in Center Harbor and an ARM fund payment in the amount of $664.25 for the permanent impacts to wetlands in New Hampton.

The lead people to contact for this project are David Scott, Design Chief, Bureau of Bridge Design (271-2731 or david.scott@dot.nh.gov) or Andrew O'Sullivan, Wetlands Program Manager, Bureau of Environment (271-3226 or andrew.o'sullivan@dot.nh.gov).

A payment voucher has been processed for this application (Voucher #617505) in the amount of $10,664.40.

If and when this application meets with the approval of the Bureau, please send the permit directly to Andrew O'Sullivan, Wetlands Program Manager, Bureau of Environment.

AMO:amo
Enclosures
cc:
BOE Original
Town of Center Harbor (4 copies via certified mail)
Town of New Hampton (4 copies via certified mail)
David Trubey, NH Division of Historic Resources (Cultural Review Within)
Carol Henderson, NH Fish & Game (via electronic notification)
Maria Tur, US Fish & Wildlife (via electronic notification)
Mark Kern, US Environmental Protection Agency (via electronic notification)
Michael Hicks, US Army Corp of Engineers (via electronic notification)
Kevin Nyhan, BOE (via electronic notification)

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NHDES
WETLANDS PERMIT APPLICATION

CENTER HARBOR – NEW HAMPTON
WAUKEWAN ROAD BRIDGE #080/040
OVER THE LAKE WAUKEWAN INLET
CENTER HARBOR & NEW HAMPTON, NEW HAMPSHIRE

NHDOT PROJECT #24579
CENTER HARBOR-NEW HAMPTON, X-A002(923)

Prepared for:
NH Department of Transportation

July 8, 2020

Prepared by:
HEB Engineers, Inc.

HEB Project #2014-052

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NHDES WETLANDS PERMIT APPLICATION

CENTER HARBOR – NEW HAMPTON 24579
WAUKEWAN ROAD BRIDGE #080/040 OVER THE LAKE WAUKEWAN INLET
CENTER HARBOR & NEW HAMPTON, NEW HAMPSHIRE

LIST OF ATTACHMENTS

A. NHDES Wetlands Permit Application
- Attachment A: Minor and Major Projects

B. USGS Map

C. Project Narrative

D. Pre-Application Meeting Notes
- 04-19-17 NHDOT Natural Resource Agency Minutes
- 10-16-19 NHDOT Natural Resource Agency Minutes

E. Need, Minimization & Avoidance – Checklist

F. Public Highway Project Specific Worksheet

G. NH Natural Heritage Bureau Review
- John Cooley (Loon Conservation Trust) Correspondence

H. USF&WS IPaC
- IPaC Species List
- IPaC PBO Consistency Letter
- NLEB Bridge Inspection Report
- NLEB Concurrence Letter
- SWP No Species Present Letter

I. National Historic Preservation Act – Section 106
- NHDHR Request for Project Review
- NHDHR Determination of Eligibility
- Section 106 Appendix B Certification

J. US Army Corps of Engineers – Appendix B

K. Photo Pages

L. Copy of Check

M. Wetland Delineation Report

N. Tax Map

O. Designated River Check

P. Wetland Plans

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: NHDOT - David Scott

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

A person may request a waiver to requirements in Rules Env-Wt 100-900 to accommodate situations where strict adherence to the requirements would not be in the best interests of the public or the environment. A person may also request a waiver of standard for existing dwellings over water pursuant to RSA 482-A:26, III (b). For more information, please consult the request form.

SECTION 1 - CONCURRENT PROCESSING OF RELATED SHORELAND/WETLANDS PERMIT APPLICATIONS (Env-Wt 313.05)

If the applicant is not requesting concurrent processing, please proceed to Section 2.

Is the proposed project eligible for the optional concurrent processing of related shoreland/wetlands permit applications (Env-Wt 313.05(d))? If the project is not eligible, proceed to Section 2 (the files will not be processed concurrently). ☐ Yes ☒ No

By signing this form and initialing this section, the applicant is requesting concurrent processing of related shoreland/wetlands permit applications and understands that concurrently filing the applications with a request to process the applications together constitutes:

- A waiver by the applicant of the shorter time frame, if application processing timelines are different for each permit program under the 2 statutes and their implementing rules; and — Initials:
- An agreement by the applicant that any request for additional information by the department under either or both statutes shall affect the review timeframe of both applications being processed together. — Initials:

SECTION 2 - REQUIRED PLANNING FOR ALL PROJECTS (Env-Wt 306.05)

Please use the Wetland Permit Planning Tool (WPPT) or any other database or source to assist in identifying key features such as: priority resource areas (PRA), protected species or habitat, coastal area, or designated river, or designated prime wetlands.

Step 1: A certified wetland scientist must delineate and classify all wetlands and identify the predominant resource functions of each wetland, unless the exceptions listed in Env-Wt 306.05(a)(1) are met (Env-Wt 306.05(a)(1)).

Step 2: Determine whether the subject property is or contains a PRA by answering the following questions (Env-Wt 306.05(a)(2)):

1. Does the property contain any documented occurrences of protected species or habitat for such species? Please use the Natural Heritage Bureau (NHB) DataCheck Tool to make this determination. ☐ Yes ☒ No
2. Is the property a bog? Please use the WPPT "Peatland" layer (under the PRA module) for general location of bogs or any other database or source**.** ☐ Yes ☒ No
3. Is the property a floodplain wetland contiguous to a tier 3 or higher watercourse? Please use the WPPT "Floodplain Wetlands Adjacent to Tier 3 Streams" layer (under PRA module) or any other database or source**.** ☐ Yes ☒ No
4. Is the property a designated prime wetland or a duly-established 100-foot buffer? Please use the WPPT "Prime Wetlands" layers (under PRA module) or any other database or source**.** ☒ Yes ☐ No
5. Is the property a sand dune, tidal wetland, tidal water, or undeveloped tidal buffer zone? Please use the WPPT "Coastal" layers module and PRA module or any other database or source. ☐ Yes ☒ No

Step 3: For projects that are subject to Env-Wt 600, please attach the Coastal Functional Assessment (Env-Wt 603.04) and Vulnerability Assessment (Env-Wt 603.05) and conduct the data screening required by Env-Wt 603.03.

Step 4: Determine whether the following apply to the subject property (Env-Wt 306.05(a)(4); RSA 482-A:3, I(d)(2)):

1. Is the property within a Local River Management Advisory Committee (LAC) jurisdiction?

   If yes, please provide the following information: ☐ Yes ☒ No
   - The project is within ¼ mile of:
   - A copy of the application was sent to the LAC on Month: Day: Year: **.**
     ☒ N/A (Env-Wt 311.01(e))
2. Is the property within or contains any areas that are subject to time of year restrictions under Env-Wt 307? ☐ Yes ☒ No

Step 5: For stream crossing projects: what is the size of the watershed (Env-Wt 306.05(a)(5))?
☒ N/A

Step 6: For dredge projects: is the subject property contaminated (Env-Wt 306.05(a)(6))? ☐ Yes ☐ No
☒ N/A

Step 7: Does the project have the potential to impact any of the following (Env-Wt 306.05(a)(7)):
☐ N/A

1. Impaired waters? ☒ Yes ☐ No
2. Class A waters? ☐ Yes ☒ No
3. Outstanding resource waters? ☐ Yes ☒ No

SECTION 3 - 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" in the space provided below.

The proposed project would include the removal of the existing bridge superstructure, construction of new abutments behind the existing abutments, and construction of a new superstructure that spans over the existing abutments. To accommodate the new superstructure, the roadway on either side of the of the bridge will be reconstructed. The limits of this reconstruction will extend roughly 150 LF to the south and 250 LF to the north.

SECTION 4 - PROJECT LOCATION

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

ADDRESS: ROW	TOWN/CITY: Center Harbor & New Hampton
TAX MAP/BLOCK/LOT/UNIT: 105 & R-7	
UNITED STATES GEOLOGICAL SURVEY (USGS) TOPO MAP WATERBODY NAME: Lake Waukewan Inlet ☐ N/A	
LATITUDE (D.ddddd): 43°39'53.0° North (Optional)	LONGITUDE (D.ddddd): 71°32'43.3° West (Optional)

SECTION 5 - APPLICANT (DESIRED PERMIT HOLDER) INFORMATION (Env-Wt 311.04(a))

If the applicant is a trust or a company, then the name of the trust or company should be written as the applicant's name.

NAME: NHDOT Bureau of Bridge Design - Scott, David		
MAILING ADDRESS: PO Box 483, 7 Hazen Drive		
TOWN/CITY: Concord	STATE: NH	ZIP CODE: 03302
EMAIL ADDRESS: david.scott@dot.nh.gov	FAX:	PHONE: (603) 271-2731
ELECTRONIC COMMUNICATION: By initialing here: DLS, I hereby authorize NHDES to communicate all matters relative to this application electronically.		

SECTION 6 - AUTHORIZED AGENT INFORMATION (Env-Wt 311.04(c))

☐ N/A

LAST NAME, FIRST NAME, M.I.: Fournier, Christopher R.		
COMPANY NAME: HEB Engineers, Inc.	MAILING ADDRESS: PO Box 440	
TOWN/CITY: North Conway	STATE: NH	ZIP CODE: 03860
EMAIL ADDRESS: cfournier@hebengineers.com	FAX:	PHONE: (603) 356-6936
ELECTRONIC COMMUNICATION: By initialing here CRF, I hereby authorize NHDES to communicate all matters relative to this application electronically.		

SECTION 7 - PROPERTY OWNER INFORMATION (IF DIFFERENT THAN APPLICANT) (Env-Wt 311.04(b))

If the owner is a trust or a company, then the name of the trust or company should be written as the owner's name.

☒ 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 8 - 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 (please attach information about stream crossings, coastal resources, prime wetlands, or non-tidal wetlands and surface waters).

The proposed project would have impacts within Prime Wetlands and associated Prime Wetland Buffers on both the Center Harbor and the New Hampton sides of the project. Significant care has been taken to limit proposed impacts to these resources. Coordination regarding threatened and endangered species has been extensive, and all potential impacts have been mitigated to the greatest practicable extent. Coordination regarding compensatory mitigation occurred as part of two (2) NHDOT Natural Resource Agency Coordination Meetings. The result of this coordiation has been a proposed plan that is agreeable to all involved parties. Mititgation for all Prime Wetland Buffer imapcts will be in the form of native species plantings throughout the project area. Mitigation for impacts to the Prime Wetlands will be in the form of payment into the Aquatic Resource Mitigation (ARM) Fund.

SECTION 9 - AVOIDANCE AND MINIMIZATION

Impacts within wetland jurisdiction must be avoided to the maximum extent practicable (Env-Wt 313.03(a)). If all impacts cannot be avoided, a functional assessment is required for minor and major projects (Env-Wt 311.03(b)(10)). Any project with unavoidable jurisdictional impacts must then be minimized as described in the Wetlands Best Management Practice Techniques For Avoidance and Minimization. Please refer to the application checklist to ensure that you have attached all documents related to avoidance and minimization, as well as functional assessment (where applicable).

SECTION 10 - 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: 10 Day: 16 Year: 2019

(☐ N/A - Mitigation is not required)

SECTION 11 - THE PROJECT MEETS COMPENSATORY MITIGATION REQUIREMENTS (Env-Wt 313.01(a)(1)c).

Have you submitted a compensatory mitigation proposal that meets the requirements of Env-Wt 800 for all permanent impacts that will remain after avoidance and minimization demonstration?

☒ Yes ☐ No

(☐ N/A - Mitigation is not required)

SECTION 12 - 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 required permitting).

For intermittent streams, the linear footage of impact is measured along the thread of the channel.

For perennial streams/rivers, 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 SF / LF		TEMPORARY SF / LF	
Forested Wetland		☐ ATF		☐ ATF
Scrub-shrub Wetland		☐ ATF		☐ ATF
Emergent Wetland		☐ ATF		☐ ATF
Wet Meadow		☐ ATF		☐ ATF
Intermittent Stream	/	☐ ATF	/	☐ ATF
Perennial Stream or River	/	☐ ATF	/	☐ ATF
Lake / Pond	53 / 8	☐ ATF	586 / 30	☐ ATF
Bank - Intermittent Stream	/	☐ ATF	/	☐ ATF
Bank - Perennial Stream / River	/	☐ ATF	/	☐ ATF
Bank/shoreline - Lake / Pond	/	☐ ATF	/	☐ ATF
Tidal Waters	/	☐ ATF	/	☐ ATF
Tidal Marsh		☐ ATF		☐ ATF
Sand Dune		☐ ATF		☐ ATF
Designated Prime Wetland	105	☐ ATF	797	☐ ATF
Duly-established 100-foot Prime Wetland Buffer	25,120	☐ ATF		☐ ATF
Undeveloped Tidal Buffer Zone (TBZ)		☐ ATF		☐ ATF
Previously-developed TBZ		☐ ATF		☐ ATF
Docking - Lake / Pond		☐ ATF		☐ ATF
Docking – River		☐ ATF		☐ ATF
Docking - Tidal Water		☐ ATF		☐ ATF
Vernal Pool		☐ ATF		☐ ATF
TOTAL	25,278 / 8		1,383 / 30	

SECTION 13 - 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): 26,661 SF × $0.40 = $ 10,664.40

Seasonal docking structure:		SF	× $2.00 =	$
Permanent docking structure:		SF	× $4.00 =	$
Projects proposing shoreline structures (including docks) add $400 =				$
Total =				$ 10,664.40
The application fee for minor or major impact is the above calculated total or $400, whichever is greater =				$ 10,664.40

SECTION 14 - PROJECT CLASSIFICATION (Env-Wt 306.05)

Indicate the project classification.

☐ Minimum Impact Project	☐ Minor Project	☒ Major Project

SECTION 15 - ALL APPLICABLE CONDITIONS IN Env-Wt 307 HAVE BEEN MET (Env-Wt 311.04(j); Env-Wt 313.01(a)(2)).

Check all conditions applicable to your project below. Please ensure that your plan design and access, construction sequence, and timing appropriately meet applicable conditions below:

☒ Env-Wt 307.02	US Army Corps of Engineers (USACE) Conditions	☒ Env-Wt 307.11	Filling Activity Conditions
☒ Env-Wt 307.03	Protection of Water Quality Required	☒ Env-Wt 307.12	Restoring Temporary Impacts: Site Stabilization
☐ Env-Wt 307.04	Protection of Fisheries and Breeding Areas Required	☒ Env-Wt 307.13	Property Line Setbacks
☒ Env-Wt 307.05	Protection Against Invasive Species Required	☐ Env-Wt 307.14	Rock Removal
☒ Env-Wt 307.06	Protection of Rare, Threatened or Endangered Species and Critical Habitat	☐ Env-Wt 307.15	Use of Heavy Equipment in Wetlands
☒ Env-Wt 307.07	Consistency Required with Shoreland Water Quality Protection Act	☒ Env-Wt 307.16	Adherence to Approved Plans Required
☒ Env-Wt 307.08	Protection of Designated Prime Wetlands and Duly-Established 100-Foot Buffers	☐ Env-Wt 307.17	Unpermitted Activities
☐ Env-Wt 307.09	Shoreline Structures	☐ Env-Wt 307.18	Reports
☒ Env-Wt 307.10	Dredging Activity Conditions		

Provide an explanation as to methods, timing, and manner as to how your project will meet standard permit conditions required in Env-Wt 307 (Env-Wt 311.03(b)(7)):

The proposed project would meet all conditions outlined in the state general permit. All proposed work would be conducted so as to minimize erosion and sedimentation, as outlined in relevant Best Management Practices, in order to protect water quality. The proposed project would require the development, and associated monitoring, of a Stormwater Pollution and Prevention Plan (SWPPP). No invasive species have been identified in the project area; but all relevant practices outlined in the NHDOT Best Management Practices for the Control of Invasive and Noxious Plant Species would be implemented to prevent the introduction and/or spread of invasive species. Care would be taken, in accordance with communication with the Loon Conservation Trust and the US Fish & Wildlife Service; to avoid any potential impacts to rare, threatened, or endangered species and critical habitat. No permitting would be required through the NHDES Shoreland Program as all impacts would occur within Wetland Bureau jurisdictional areas. All fill placed in wetlands would consist of clean rock and sourced as to not contaminate water. All temporary impact areas would be restored immediately following construction per the requirements outlined in Env-Wt 307.12. All construction would be done in accordance with plans approved as part of this permitting process. No unpermitted activities would take place as part of the proposed project. All reports related to construction and mitigation, as requried by Env-Wt 307.18, would be submitted as part of the proposed project.

SECTION 16 - REQUIRED CERTIFICATIONS (Env-Wt 311.11)

Initial each box below to certify:

Initials: CRF	To the best of the signer's knowledge and belief, all required notifications have been provided.
Initials: CRF	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: CRF	The signer understands that: • The submission of false, incomplete, or misleading information constitutes grounds for NHDES to: 1. Deny the application. 2. Revoke any approval that is granted based on the information. And 3. 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 trail projects, where the signature shall authorize only the Department to inspect the site pursuant to RSA 482-A:6, II.
Initials: CRF	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 17 - REQUIRED SIGNATURE (Env-Wt 311.04(d); Env-Wt 311.11)

SIGNATURE (OWNER): David L Scott	PRINT NAME LEGIBLY: David L. Scott	DATE: 8/5/2020
SIGNATURE (APPLICANT, IF DIFFERENT FROM OWNER):	PRINT NAME LEGIBLY:	DATE:
SIGNATURE (AGENT, IF APPLICABLE):	PRINT NAME LEGIBLY: Christopher R. Fournier	DATE: 07/08/20

SECTION 18 - 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: Exempt per RSA 482-A:3I(a)(1)	PRINT NAME LEGIBLY:
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. And
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 single, original permit application form bearing the signature of the Town/City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery at the address at the bottom of this page.

APPLICATION CHECKLIST
(Items identified with an asterisk (*) are required only for Minor and Major Projects)

- ☒ The completed, dated, signed and certified application (Env-Wt 311.03(b)(1)).
- ☒ Correct fee as determined in RSA 482-A:3, I(b) or (c), subject to any cap established by RSA 482-A:3, X (Env-Wt 311.03(b)(2)).
- ☒ USACE "Appendix B, New Hampshire General Permits (GPs), Required Information and Corps Secondary Impacts Checklist" and its required attachments (Env-Wt 307.02).
- ☒ The results of actions required by Env-Wt 311.01 as part of an application preparation for a standard permit (Env-Wt 311.03(b)(3)).
- ☒ Project plans described in Env-Wt 311.05 (Env-Wt 311.03(b)(4)).
- ☒ Maps, or electronic shape files and meta data, and other attachments specified in Env-Wt 311.06 (Env-Wt 311.03(b)(5)).
- ☒ Explanation as to methods, timing, and manner as to how the project will meet standard permit conditions required in Env-Wt 307 (Env-Wt 311.03(b)(7)).
- ☒ If applicable, the information regarding proposed compensatory mitigation specified in Env-Wt 311.08 and Chapter Env-Wt 800 – Mitigation Worksheet, unless not required under Env-Wt 313.04 (Env-Wt 311.03(b)(8); Env-Wt 311.08; Env-Wt 313.04).
- ☒ Any additional information specific to the type of resource as specified in Env-Wt 311.09 (Env-Wt 311.03(b)(9); Env-Wt 311.04(j)).
- ☒ Project specific information required by Env-Wt 500, Env-Wt 600 (Coastal Worksheet), and Env-Wt 900 (Stream Crossing Worksheet) (Env-Wt 311.03(b)(11)).
- ☒ A list containing the name, mailing address and tax map/lot number of each abutter to the subject property (Env-Wt 311.03(b)(12)).
- ☐ Copies of certified postal receipts or other proof of receipt of the notices that are required by RSA 482-A:3, I(d) (Env-Wt 311.03(b)(13)).

- ☒ Project design considerations required by Env-Wt 313 (Env-Wt 311.04(j)).
- ☒ Town tax map showing the subject property, the location of the project on the property, and the location of properties of abutters with each lot labeled with the name and mailing address of the abutter (Env-Wt 311.06(a)).
- ☒ Dated and labeled color photographs that:
  - (1) Clearly depict:
    - a. All jurisdictional areas, including but not limited to portions of wetland, shoreline, or surface water where impacts have or are proposed to occur. And
    - b. All existing shoreline structures. And
  - (2) Are mounted or printed no more than 2 per sheet on 8.5 x 11 inch sheets (Env-Wt 311.06(b)).
- ☒ A copy of the appropriate USGS map or updated data based on LiDAR at a scale of one inch equals 24,000 feet showing the location of the subject property and proposed project (Env-Wt 311.06(c)).
- ☒ A narrative that describes the work sequence, including pre-construction through post-construction, and the relative timing and progression of all work (Env-Wt 311.06(d)).
- ☐ For all coastal projects, include a copy of the recorded deed with book and page numbers for the property (Env-Wt 311.06(e)).
- ☐ If the applicant is not the owner in fee of the subject property, documentation of the applicant's legal interest in the subject property, provided that for utility projects in a utility corridor, such documentation may comprise a list that:
  - (1) Identifies the county registry of deeds and book and page numbers of all of the easements or other recorded instruments that provide the necessary legal interest. And
  - (2) Has been certified as complete and accurate by a knowledgeable representative of the applicant (Env-Wt 311.06(f)).
- ☒ The NHB memo containing the NHB identification number and results and recommendations from NHB as well as any written follow-up communications such as additional memos or email communications with either NHB or New Hampshire Fish and Game Department (NHF&G) (Env-Wt 311.06(g)).
- ☒ A statement of whether the applicant has received comments from the local conservation commission and, if so, how the applicant has addressed the comments (Env-Wt 311.06(h)).
- ☒ For projects in LAC jurisdiction, a statement of whether the applicant has received comments from the LAC and, if so, how the applicant has addressed the comments (Env-Wt 311.06(i)).
- ☒ If the applicant is also seeking to be covered by the state general permits, a statement of whether comments have been received from any federal agency and, if so, how the applicant has addressed the comments (Env-Wt 311.06(j)).
- ☐ For after-the-fact applications: information required by Env-Wt 311.12 (Env-Wt 311.12).
- ☐ Coastal Resource Worksheet for coastal projects as required under Env-Wt 600.
- ☒ Prime Wetlands information required under Env-Wt 700.
- ☐ Stream Crossing Worksheet required by Env-Wt 900.
- ☒ Avoidance and Minimization Written Narrative or Checklist (Env-Wt 311.07).
- ☒ * Attachment A: Minor and Major Projects (Env-Wt 311.10).
- ☒ * Functional Assessment (Env-Wt 311.10).

STANDARD DREDGE AND FILL WETLANDS PERMIT APPLICATION ATTACHMENT A: MINOR AND MAJOR PROJECTS

Water Division/Land Resources Management
Wetlands Bureau

RSA/ Rule: RSA 482-A/ Env-Wt 311.10; Env-Wt 313.01(a)(1); Env-Wt 313.03

Attachment A can be used to satisfy some of the additional requirements for minor and major projects regarding avoidance and minimization, as well as functional assessment.

PART I: AVOIDANCE AND MINIMIZATION

In accordance with Env-Wt 313.03(a), the Department shall not approve any alteration of any jurisdictional area unless the applicant demonstrates that the potential impacts to jurisdictional areas have been avoided to the maximum extent practicable and that any unavoidable impacts have been minimized, as described in the Wetlands Best Management Practice Techniques For Avoidance and Minimization.

SECTION I.I - ALTERNATIVES (Env-Wt 313.03(b)(1))

Describe how there is no practicable alternative that would have a less adverse impact on the area and environments under the Department's jurisdiction.

SEVERAL ALTERNATIVES WERE CONSIDERED AS PART OF THE PRELIMINARY STAGES OF PROJECT DEVELOPMENT. THESE ALTERNATIVES INCLUDED A NO BUILD ALTERNATIVE, A REHABILITATION/REPLACEMENT OFF-ALIGNMENT, AND A REHABILITATION/REPLACEMENT ON-ALIGNMENT WITH AN OFF-ALIGNMENT TEMPORARY BRIDGE. THE NO-BUILD ALTERNATIVE WOULD NOT BE PRACTICABLE AS PERMANENT CLOSURE IS INEVITABLE WHICH IS INTOLERABLE FOR BOTH COMMUNITIES INVOLVED. THE REHABILITATION/REPLACEMENT OFF-ALIGNMENT ALTERNATIVE WOULD HAVE SIGNIFICANT IMPACTS ON THE SURROUNDING ENVIRONMENT, INCLUDING JURISDICTIONAL AREAS. THE REHABILITATION/REPLACEMENT ON-ALIGNMENT WITH AN OFF-ALIGNMENT TEMPORARY BRIDGE WOULD ALSO HAVE SIGNIFICANT ENVIRONMENTAL IMPACTS. FOR THE ABOVE LISTED REASONS, THE REHABILITATION/REPLACEMENT ON-ALIGNMENT WITH A TEMPORARY ROAD CLOSURE WAS SELECTED. THIS ALTERNATIVE HAS THE LEAST SIGNIFICANT ENVIROENMENTAL IMPACTS, PARTICULARLY WITH RESPECT TO JURISDICTIONAL AREAS.

SECTION I.II - MARSHES (Env-Wt 313.03(b)(2))

Describe how the project avoids and minimizes impacts to tidal marshes and non-tidal marshes where documented to provide sources of nutrients for finfish, crustacea, shellfish and wildlife of significant value.

N/A. The proposed project would not take place in the vicinity of any tidal or non-tidal marshes.

SECTION I.III – HYDROLOGIC CONNECTION (Env-Wt 313.03(b)(3))

Describe how the project maintains hydrologic connections between adjacent wetland or stream systems.

The proposed project would maintain current levels of connectivity between the Waukewan Lake Inlet and Waukewan Lake itself. The level of connection between these two wetlands would remain unchanged.

SECTION I.IV - JURISDICTIONAL IMPACTS (Env-Wt 313.03(b)(4))

Describe how the project avoids and minimizes impacts to wetlands and other areas of jurisdiction under RSA 482-A, especially those in which there are exemplary natural communities, vernal pools, protected species and habitat, documented fisheries, and habitat and reproduction areas for species of concern, or any combination thereof.

The proposed project has been selected and designed to have minimal impacts to wetlands and other areas of jurisdiction. Special care has been taken to minimize impacts to the Prime Wetlands and associated Prime Wetland Buffer. The roadway will be reconstructed almost entirely on existing alignment, construction activities will take place within the ROW, the project would result in a net decrease in impervious area, and the project would include significant native plantings throughout the project area. Although common loon was identified as being in the project vicinity, coordination with John Cooley (Loon Preservation Committee) has occurred and no impacts to the Common Loon are anticipated. Additionally, Small Whorled Pagonia and Northern long-eared bat field surveys have been conducted, and no evidence of either species have been observed. Significant coordination regarding all environmental impacts has taken place during NHDOT Natural Resource Coordination Meetings and the National Environmental Policy Act (NEPA) review process.

SECTION I.V - PUBLIC COMMERCE, NAVIGATION, OR RECREATION (Env-Wt 313.03(b)(5))

Describe how the project avoids and minimizes impacts that eliminate, depreciate or obstruct public commerce, navigation, or recreation.

The proposed project would allow continued use of the wetlands and associated ecosystems for recreation. The primary recreational use of the impacted wetland complexes is through fishing and kayacking, neither of these activities would be negatively impacted by the proposed project. Public commerce, navigation, and recreation would be significantly benefited by the replacement of the bridge which would allow continued safe travel along Waukewan Road. The impacted wetlands have been determined to be non-navigable by the US Coast Guard, and no use for public commerce currently occurs nor would be impacted.

SECTION I.VI - FLOODPLAIN WETLANDS (Env-Wt 313.03(b)(6))

Describe how the project avoids and minimizes impacts to floodplain wetlands that provide flood storage.

The proposed project would not be anticipated to have any meaningful negative impact on floodplain wetlands or their ability to provide flood storage. The proposed project is being constructed largely at grade, and includes no significant amount of fill in the wetlands. No more than a nominal increase in base flood elevation would be anticipated. Additionally; Lake Waukewan, and the assocated inlet, have no history of significant flooding as they are dam controlled and have relatively little fluctuation in water surface elevation.

SECTION I.VII - RIVERINE FORESTED WETLAND SYSTEMS AND SCRUB-SHRUB –MARSH COMPLEXES (Env-Wt 313.03(b)(7))

Describe how the project avoids and minimizes impacts to natural riverine forested wetland systems and scrub-shrub – marsh complexes of high ecological integrity.

The proposed project has been designed to minimize impacts to natural riverine forested wetland systems and scrub-shrub - marsh complexes to the greatest extent practicable. The proposed project would be constructed largely at grade and on existing alignment and would require the least impacts to the Prime Wetlands and associated buffers practicable. The closure of the road during construction would allow for material storage, and construction access, within the roadway cooridor; significantly reducing wetland impacts.

SECTION I.VIII - DRINKING WATER SUPPLY AND GROUNDWATER AQUIFER LEVELS (Env-Wt 313.03(b)(8))

Describe how the project avoids and minimizes impacts to wetlands that would be detrimental to adjacent drinking water supply and groundwater aquifer levels.

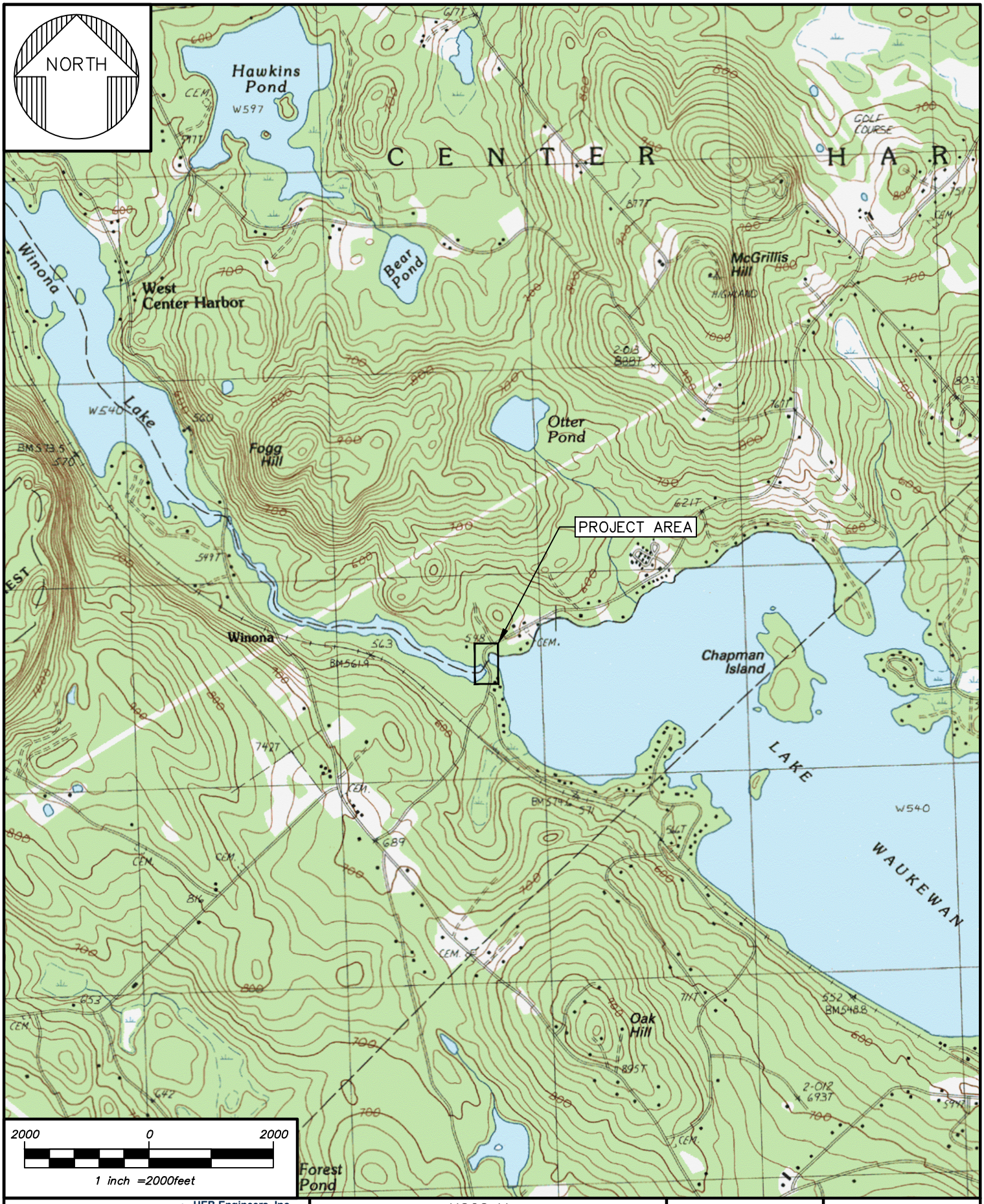
Lake Waukewan is used as public drinking water supply. Significant care has been taken to reduce impacts to Prime Wetlands and Prime Wetland Buffers which would have a detrimental impact to drinking water supply. Addtionally, proposed native vegetative plantings throughout the project area have been designed to help stabilize the wetland buffer area and promote water quality. The proposed project would be anticipated to result in a net benefit for water quality and drinking water supply in the area.

SECTION I.IX - STREAM CHANNELS (Env-Wt 313.03(b)(9))

Describe how the project avoids and minimizes adverse impacts to stream channels and the ability of such channels to handle runoff of waters.

N/A. The proposed project would not impact stream channels.

PART II: FUNCTIONAL ASSESSMENT
REQUIREMENTS Ensure that project meets requirements of Env-Wt 311.10 regarding functional assessment (Env-Wt 311.04(j); Env-Wt 311.10).
FUNCTIONAL ASSESSMENT METHOD USED: The functional assessment was made on-site by Rick Van de Poll while in the company of the design engineer, his assesment method and findings are outlined in the included report.
NAME OF CERTIFIED WETLAND SCIENTIST (FOR NON-TIDAL PROJECTS) OR QUALIFIED COASTAL PROFESSIONAL (FOR TIDAL PROJECTS) WHO COMPLETED THE ASSESSMENT: RICK VAN DE POLL
DATE OF ASSESSMENT: OCTOBER 23, 2015
Check this box to confirm that the application includes a NARRATIVE ON FUNCTIONAL ASSESSMENT: ☒
For minor or major projects requiring a standard permit without mitigation, the applicant shall submit a wetland evaluation report that includes completed checklists and information demonstrating the RELATIVE FUNCTIONS AND VALUES OF EACH WETLAND EVALUATED. Check this box to confirm that the application includes this information, if applicable: ☒ Note: The Wetlands Functional Assessment worksheet can be used to compile the information needed to meet functional assessment requirements.



HEB Engineers
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North Conway, NH 03860
ME Office (207) 803-8265
Post Office Box 343
Bridgton, ME 04009

USGS Map
for the
Waukewan Road Bridge #080/040
located in
Center Harbor & New Hampton, New Hampshire
prepared for
New Hampshire Department of Transportation

Figure 1		PROJECT	24579
DESIGNED BY	–	REVISION	–
DRAWN BY	TBG	DATE	10/25/2019
CHECKED BY	CRF	SCALE	1"=2,000'

NHDES WETLANDS PERMIT APPLICATION

CENTER HARBOR – NEW HAMPTON 24579

WAUKEWAN ROAD BRIDGE #080/040
OVER THE LAKE WAUKEWAN INLET

CENTER HARBOR & NEW HAMPTON, NEW HAMPSHIRE

NARRATIVE

July 8, 2020

Introduction:
This application is for the proposed rehabilitation of the bridge (NHDOT #080/040) carrying Waukewan Road over Lake Waukewan Inlet, between the Town of Center Harbor and the Town of New Hampton. The existing two-lane bridge is on the State Red List. All proposed work would take place within the right-of-way. The proposed project area is generally highly disturbed, with much of it having impervious cover. The wetlands within, and surrounding, the proposed project area are designated Prime Wetlands and have the associated 100-foot Prime Wetland Buffer.

Site:
The proposed project site currently consists of the existing bridge, roadway, and associated infrastructure. The Lake Waukewan Inlet, which runs underneath the bridge, has associated wetlands on either bank. These wetlands are Palustrine unconsolidated bottom, emergent, scrub-shrub, and forested on the western side of the bridge; and Lacustrine littoral aquatic bed and limnetic unconsolidated bottom on the eastern side. The wetlands on the western side of the bridge are the inlet to Lake Waukewan, this inlet begins at Winona Lake to the northwest. The wetlands on the eastern side of the bridge are the northwestern most portion of Lake Waukewan.

The proposed project would include closing the road to traffic, removing the concrete superstructure, constructing new abutments behind the existing abutments, and constructing a new precast concrete deck beam superstructure that spans over the existing stone abutments. The existing stone abutments would be reinforced and repaired as necessary. The existing rail-to-rail width would be maintained with a slightly narrower curb-to-curb width of 18-feet 4-inches. The out-to-out width would be widened slightly, to 22-feet 4-inches, to allow for the installation of a crash-tested rail system. In addition to the bridge construction, the road would be raised slightly in the vicinity of the bridge to accommodate a deeper bridge superstructure while slightly increasing the size of the hydraulic opening. The limits of roadway reconstruction would extend approximately 150 LF on the New Hampton side of the bridge, and approximately 250 LF on the Center Harbor side of the bridge. All proposed construction would take place within the right-of-way.

Wetland impacts are proposed on both sides of the inlet and in the inlet channel itself. These impacts would include impacts to both the Prime Wetlands and both Prime Wetland Buffers. Wetland impacts within the Prime Wetlands would be the result of work required for the bridge work and two small fill slopes that would extend into wetlands. These impacts within the Prime Wetlands would be largely temporary. Impacts within the Prime Wetland Buffer would be as a result of roadway reconstruction on either side of the bridge. These impacts would be permanent, but would primarily be within previously disturbed areas. Minimal changes to cover types or disturbance area would result from this project.

Impacts would occur on wetlands labeled as Wetland #2, Wetland #4, Wetland #5, Wetland #9 and Wetland #10 in the attached Wetland Impact Plan. These wetlands were classified as PSS1/FO1E palustrine, scrub-shrub, broad-leaved deciduous / forested, broad-leaved deciduous, seasonally flooded/saturated; L2AB3/EM2H lacustrine, littoral, aquatic bed, rooted vascular / emergent, nonpersistent, permanently flooded; L2AB3/4Hh lacustrine, littoral, aquatic bed, rooted vascular / floating vascular, permanently flooded, diked/impounded; PEM2/AB3/4H palustrine, emergent, nonpersistent / aquatic bed, rooted vascular / floating vascular, permanently

flooded; PUB4/AB3/4H palustrine, unconsolidated bottom, organic / aquatic bed, rooted vascular / floating vascular, permanently flooded.

A USGS map (see Attachment L) and tax maps (see Attachment N) are included for project locations and reference. The total proposed permanent wetland impacts would be 105 square feet within the Prime Wetlands, 53 SF of Lake/Pond impacts, and 25,120 square feet within the Prime Wetland Buffers. These impacts include 8 linear feet of Lake/Pond impacts. The project would also result in 1,383 square feet of temporary impacts, including 30 linear feet of Lake/Pond impacts. Existing-Features are included in the Wetland Plans, Attachment Q and existing site photos are included in Attachment M.

Need, Avoidance, and Minimization:

The impacts associated with the proposed project have been minimized to the greatest extent possible. The proposed project is needed to allow for continued same travel along Waukewan Road and over the bridge. Not doing anything would eventually result in the closure of the bridge; this option is not viable due to required travel by residents, businesses, and emergency services over the bridge.

Impacts to jurisdictional areas have been avoided as much as possible. The nature of the proposed project does not allow for complete avoidance of impacts. Any alternative presented to cross the Lake Waukewan Inlet would result in some amount of impacts to the Prime Wetlands and associated buffers.

Several other alternatives were considered during the initial phases of this project. As discussed above, a no-build alternative is not a viable option and was only briefly considered. Rehabilitation/replacement of the bridge off-alignment was considered, but was abandoned due to large environmental impacts. Rehabilitation/replacement on-alignment with an off-alignment temporary bridge was also considered, but was abandoned due to large environmental impacts. The preferred alternative, presented in this permit application, results in the smallest wetland impacts of any viable alternative. Constructing the new concrete abutments behind the existing abutments would significantly reduce wetland impacts, and maintaining the general alignment of the roadway would significantly reduce impacts within the Prime Wetland Buffer.

Compensatory Mitigation:

Compensatory mitigation is proposed for impacts to both Prime Wetlands and the associated Prime Wetland Buffer. Compensatory mitigation for Prime Wetland Buffer Impacts is proposed in the form of native vegetative plantings throughout the project area. Compensatory mitigation for Prime Wetland Impacts is proposed in the form of a payment into the Aquatic Resource Mitigation (ARM) Fund. This compensatory mitigation strategy has been reviewed with Lori Sommer (NHDES Wetland Bureau) and is acceptable to NHDOT, the impacted communities, and NHDES.

Construction Sequence:

A construction sequence is included in the Wetland Plans prepared by HEB Engineers, Inc., dated June 30, 2020. These drawings are included in Attachment Q.

NHDES WETLANDS PERMIT APPLICATION

CENTER HARBOR – NEW HAMPTON 24579

WAUKEWAN ROAD BRIDGE #080/040
OVER THE LAKE WAUKEWAN INLET

CENTER HARBOR & NEW HAMPTON, NEW HAMPSHIRE

MITIGATION NARRATIVE

August 17, 2020

Mitigation for the proposed jurisdictional impacts was discussed at both the April 19, 2017 and the October 16, 2019 NHDOT Natural Resource Agency Coordination Meetings. The proposed mitigation strategy was agreed upon by all parties; including Lori Sommer, NHDES Wetland Mitigation Coordinator. Mitigation for the project is proposed in two forms; native vegetative plantings throughout the project area, and a payment into the Aquatic Resource Mitigation (ARM) Fund.

Native vegetative plantings throughout the project area would be used to mitigate impacts to the Prime Wetland Buffer in both Center Harbor and New Hampton. These impacts total 25,120 SF. These plantings will serve to stabilize the buffer area, create native habitat for various organisms, and increase water quality in the Prime Wetlands themselves by treating stormwater runoff from the roadway corridor.

In-lieu payment to the ARM Fund would be used to mitigate permanent impacts to the Prime Wetlands. These impacts total 158 SF and occur only on the New Hampton side of the project. The payment amount has been calculated to be $664.25.

NHDES AQUATIC RESOURCE MITIGATION FUND
WETLAND PAYMENT CALCULATION
INSERT AMOUNTS IN YELLOW CELLS

1	**Convert square feet of impact to acres:**		
INSERT SQ FT OF IMPACT	Square feet of impact =	158.00	
		43560.00	
	Acres of impact =	0.0036	
2	**Determine acreage of wetland construction:**		
	Forested wetlands:	0.0054	
	Tidal wetlands:	0.0109	
	All other areas:	0.0054	
3	**Wetland construction cost:**		
	Forested wetlands:	$525.99	
	Tidal Wetlands:	$1,051.98	
	All other areas:	$525.99	
4	**Land acquisition cost (See land value table):**		
INSERT LAND VALUE FROM TABLE WHICH APPEARS TO THE LEFT. (Insert the amount do not copy and paste.)	Town land value:	5065	
	Forested wetlands:	$27.56	
	Tidal wetlands:	$55.12	
	All other areas:	$27.56	
5	**Construction + land costs:**		
	Forested wetland:	$553.55	
	Tidal wetlands:	$1,107.09	
	All other areas:	$553.55	
6	**NHDES Administrative cost:**		
	Forested wetlands:	$110.71	
	Tidal wetlands:	$221.42	
	All other areas:	$110.71	
**********	**TOTAL ARM PAYMENT**********		
	Forested wetlands:	$664.25	
	Tidal wetlands:	$1,328.51	
	All other areas:	$664.25	

BUREAU OF ENVIRONMENT
CONFERENCE REPORT

SUBJECT: NHDOT Monthly Natural Resource Agency Coordination Meeting
DATE OF CONFERENCE: April 19, 2017
LOCATION OF CONFERENCE: John O. Morton Building
ATTENDED BY:

NHDOT
Matt Urban
Sarah Large
Ron Crickard
Meli Dube
Kerry Ryan
Steve Johnson
Ali Skinner
Colleen White
Kathy Corliss
Don Lyford
Victoria Chase
Matt Healey
Jim Kirouac
Joe Adams
Kevin Dagle
Jim Curoak
Sam Fifield
Magee Baldwin
Michael Licciardi

Federal Highway Administration
Jamie Sikora

ACOE
Mike Hicks

NHDES
Lori Sommer

NHF&G
Carol Henderson

NH Natural Heritage Bureau
Amy Lamb

Consultants/Public Participants
David McNamara
John Stockton
Vicki Chase
Christopher Fournier
Clint Mercer
Matt Lundsted
Ryan McMullen
Tom Cleary
Shawn Flynn

(When viewing these minutes online, click on an attendee to send an e-mail)

PRESENTATIONS/ PROJECTS REVIEWED THIS MONTH:
(minutes on subsequent pages)

(When viewing these minutes online, click on a project to zoom to the minutes for that project)

- Ability to Roughen Culvert Invert
- Minimize Change in Invert Elevation
- Repair Scour
- Elimination of 30" Overflow Pipe
- No Increase in 100-Yr Upstream Flood Elevation
- Headwalls Improve Flow Characteristics
- Headwalls Constructed at Top of Mitered Edge
- Minimize Construction Risk
- Minimize Construction Duration/Impacts

The new headwalls will be located where the crown of the pipe daylights, slightly reducing the overall length as the mitered ends will be eliminated.

Carol Henderson of NH Fish and Game asked if there would be connectivity through the stream following the pipe work and scour repair. Stantec responded that yes, there will be. There is enough grade change to allow for a smooth stream bed to be maintained following the lining. Vicki Chase of Normandeau added that John Magee (NH Fish and Game) had noted that there are brook trout and slimy sculpin in the watershed and may pass through this culvert. He was concerned as well about connectivity. Stantec noted the scour is near the end of the outlet, and will be filled.

Lori Sommer (NHDES) asked about areas of new impact, Stantec responded that the work to install each headwall and repair the scour would be new impacts. Lori stated that mitigation was required for new impacts, which in this case includes approximately 25 feet of channel impact at the inlet, 40 feet at the outlet for a total of 65 feet of channel impact.

Matt Urban noted that the impacts should be shown as permanent, and that the permit application will be submitted as an alternative design, as this does not meet the Stream Crossing guidelines.

Carol Henderson asked about the perched condition at the outlet, which had been noted at the December meeting. Vicki Chase stated that it was not perched in the initial Stream Crossing Assessment and she has not seen evidence of this in her time on the project. Carol stated that if it is determined to be perched during construction, that the condition be repaired. Stantec and NAI concurred.

It was noted that the NHB needs to be updated for the permit application.

Victoria Chase (NHDOT) stated that the permit will be coming soon, and that the project is scheduled to advertise in September.

This project has been previously discussed at the 7/16/2014 and 12/16/2015 Monthly Natural Resource Agency Coordination Meetings.

Center Harbor – New Hampton, #24579 (X-A002(923))
Christopher Fournier introduced the project. This is the first time this project has been presented at the Natural Resource Agency meeting. The goal of the project is to rehabilitate the redlisted bridge (Br. No. 080/040) carrying Waukewan Road over Lake Waukewan Inlet between the Town of Center Harbor and the Town of New Hampton.

Waukewan Road connects U.S. Route 3 in Center Harbor to Winona Road in New Hampton. The existing bridge has a reinforced concrete slab superstructure with mortared cut stone abutments. It has a span of 13 feet and is located on an S curve in the road. The road narrows to 19'-4" at the bridge and the bridge has

an out to out width of 21'-2." Deficiencies in the existing bridge include exposed rebar with corrosion on the underside of the concrete slab and cracking and voids in the stone abutments.

After completing three public information meetings and two supplemental work sessions, a preferred alternative has been selected with extensive public input. The project is currently in the TS&L phase with NEPA documentation scheduled for the summer of 2017. The current project timeline has contract plans completed in the fall of 2019 with the project advertisement in January 2021 and construction in the summer of 2021.

The considered alternatives were presented as well as the preferred alternative. The preferred alternative involves new abutments being constructed behind the existing stone abutments with a new voided slab bridge spanning the new abutments. This includes raising the road as necessary to accommodate the deeper bridge structure. It maintains 2 lanes with the existing rail to rail width of 19'-4", a narrower curb to curb width of 18'-4" and a wider out to out width of 22'-4."

A Wetland Delineation and Report was completed for the project which identified prime wetlands in Center Harbor with New Hampton prime wetland designation underway. There are 14 classifications of wetland areas in the vicinity of the project. A maximum of 1,250 square feet of temporary wetland impacts and 750 square feet of permanent impacts are expected for the project.

The Natural Heritage Bureau identified the Common Loon as a rare species in the project area. The USFWS IPaC preliminarily identified the Northern Long-eared Bat, Migratory Birds and Small Whorled Pogonia as natural communities in the area.

Matt Urban asked if any parts of the existing stone abutments will have to be removed for the new structure to be put in place. C. Fournier stated that the plan is to span over the existing stone abutment and re-stabilize the stones while doing the work.

Lori Sommer asked if the wetland is a prime wetland and Jaimie Sikora asked if there is any canoe traffic in the area. C. Fournier responded that it is a prime wetland and there is canoe traffic. There is local concern about the prime wetland and the preferred alternative is the only option to receive public support because it is in-kind. Rick Van de Poll, CWS has worked with both Towns regarding their prime wetland designation.

M. Urban asked if the town line is on the middle of the bridge. C. Fournier answered that it is and is technically through the wetland crossing, indicating that the crossing is not riverine. C. Fournier noted that the impact plan previously outline was generous and although fill slopes are needed, the hope is the keep them within the ROW footprint.

Mike Hicks asked if a Pogonia survey has been done. C. Fournier stated that this has not yet been done. Carol Henderson commented that John Coolie of the Loon Preservation Committee should be contacted for a recommendation on the best time to schedule construction with regards to the Loon's nesting. C. Fournier responded that the plan is for a road closure and the construction schedule is flexible so there is potential to schedule around the natural resources.

M. Hicks asked if he heard correctly that the project was not eligible to be listed on the national register of Historic Places in accordance with Section 106 of the National Historic Preservation Act. C. Fournier confirmed that this was correct.

Melilotus Dube commented that the characteristics of the prime wetlands have been kept in mind throughout the project because the town values and has expressed interest in the wetlands remaining the way they have been designated.

M. Urban stated that any impacted prime wetlands need on site mitigation and asked what would be good mitigation for the area and if plantings on new slopes would be acceptable. L. Sommer suggested enhancement measures such as invasive species removal, plantings and revegetating open areas. M. Urban stated that the idea is to do native plantings where any slope work is done. C. Fournier commented that no invasive species have been noted in the area and there is shrubbery in the existing area where fill slopes are likely.

M. Dube stated that there is an unofficial access location to the wetlands in the project area and asked if something could be done about this due to concern over the potential introduction of invasive species. L. Sommer asked if this was causing any erosion in the area and the possibility of a "prevent invasive aquatics" sign was proposed. M. Urban expressed concern that signage may encourage access as the public may misinterpret this as a formalized access point. C. Fournier stated that this is town owned property and the town fire department uses the access. J. Sikora asked if there are formal access points in the area and M. Dube responded that there are.

L. Sommer asked if areas of invasive species could be looked into. C. Fournier confirmed that there are no invasive species in the project area, but there are known populations in the vicinity of the bridge outside of the project area. M. Dube responded that it is preferred not to expand the scope of the project by considering invasive species outside the work area.

L. Sommer suggested revegetating the banks with native species, but that the preservation of the existing condition which contributes to the characteristics included in the prime wetland classification qualifies the work as generally self-mitigating. Amy Lamb encouraged looking at the species on site and to source new plantings locally if possible.

J. Sikora stated that a Coast Guard exception from Federal Highway was needed.

No further questions or concerns were raised with the project as presented.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting.

Lebanon, 15880 (A001(008))

Ali Skinner, NHDOT, presented an overview of the scope of work and projects limits. The project is a 4R project which includes pavement rehabilitation, guardrail replacement, bridge maintenance and drainage repairs and upgrades. The work begins at MM 54.65 and extends northerly on I89 5.35 miles to MM 60.0 in the City of Lebanon. A 0.5 mile section near Exit 19 will be excluded as this area will be included in a different project intended to rehabilitate bridges at this location. The work will include:

Paving

- Mainline, Exit 18 SB Off ramp-, SB Rest Area, NB and SB Weight Stations.

Bridge Work

- Heater Road Bridge: expansion joint repair and substructure patching.

BUREAU OF ENVIRONMENT
CONFERENCE REPORT

SUBJECT: NHDOT Monthly Natural Resource Agency Coordination Meeting
DATE OF CONFERENCE: October 16, 2019
LOCATION OF CONFERENCE: John O. Morton Building
ATTENDED BY:

NHDOT
Matt Urban
Sarah Large
Ron Crickard
Andrew O'Sullivan
Tim Boodey
Russ St. Pierre
Trent Zanes
Tony King
Matt Healey
Arin Mills
John Sargent
Meli Dube
Jason Trembley
Kevin Daigle

ACOE
Mike Hicks
Rick Kristoff

EPA
Mark Kern
Jeannie Brochi
Beth Alafat

NOAA
Mike Johnson*

NHDES
Lori Sommer
Joe Schmidl
Stephanie Giallongo

NH NHB
Amy Lamb

Consultants/Public Participants
Christine Perron
Josh Lund
Chris Fournier
Amanda Hollenbeck
Tucker Gordon

PRESENTATIONS/ PROJECTS REVIEWED THIS MONTH: *(minutes on subsequent pages)*

(When viewing these minutes online, click on a project to zoom to the minutes for that projec

Lee, #41322 (X-A004(593))
No minutes submitted to date.

This project has not been previously discussed at the Monthly Natural Resource Agency Coordination Meeting.

Center Harbor- New Hampton, #24579 (X-A002(923))
Christopher Fournier introduced the project. This is the second time this project has been presented at the Natural Resource Agency meeting. The goal of the project is to rehabilitate the Red List bridge (Br. No. 080/040) carrying Waukewan Road over Lake Waukewan Inlet between the Town of Center Harbor and the Town of New Hampton.

C. Fournier gave an overview of the project and highlighted updates since the last time it was presented. C. Fournier noted that Lake Waukewan is dam controlled and the inlet is in a backwatered condition. C. Fournier mentioned that, as previously discussed, the bridge is not subject to stream crossing guidelines as the resource is considered a delineated wetland.

C. Fournier presented the proposed wetland impacts and noted that Prime Wetlands exist on the Center Harbor side of the project, and they are anticipated in the immediate future on the New Hampton side. C. Fournier indicated that, as previously discussed, wetlands mitigation is anticipated in the form of native plantings for Prime Wetlands Buffer impacts and an Aquatic Resource Mitigation Fund contribution for the direct permanent Prime Wetland impacts.

C. Fournier noted that Shoreland permitting is also anticipated as part of this project in the form a Shoreland Permit-by-Notification.

C. Fournier mentioned that northern long-eared bat and small whorled pogonia field surveys had been completed by Meli Dube and had found no evidence of either species. M. Dube also looked for evidence of invasive species while on-site and noted none.

C. Fournier noted that the United States Coast Guard Bridge Project Questionnaire had been submitted and no concerns were anticipated.

C. Fournier gave a brief overview of the current project schedule, noting that NH Department of Environmental Services Wetlands Bureau permit submission is anticipated in February 2020.
Michael Hicks asked for confirmation that there were no historical concerns regarding the bridge. C. Fournier confirmed that there are no historical concerns with this project, as the NH Division of Historical Resources has concurred that the bridge is not eligible for listing on the National Register of Historic Places.

Lori Sommer asked if a shutdown and detour was proposed for the construction of the bridge. C. Fournier confirmed that a temporary closure and detour was preferred by the towns.

Matt Urban asked why mitigation was needed for wetland impacts since the permanent impacts were so small. L. Sommer noted that the size of impacts to the Prime Wetland Buffer made the project require mitigation for all impacts.

It was asked if work could be performed in low-flow conditions and if dewatering would be required as part of the project. C. Fournier responded that the lake and inlet are dam controlled and water levels are

consistent. Proper coffer damming, turbidity, and erosion and sediment controls will be used during construction.

Amy Lamb asked if the determination that there would be no impacts to the Common Loon would still be valid in 2021 when the project. Tucker Gordon responded that John Cooley,Loon Preservation Committee, indicated that the nesting sites in the area of the project had not been used in several years. T. Gordon said that he would confirm that J. Cooley was aware of the project schedule and could confirm his determination if needed.

L. Sommer clarified that Section 700 rules (Prime Wetlands) were what triggered the need for mitigation. No further questions or concerns were raised with the project as presented.

This project was previously discussed at a Monthly Natural Resource Agency Coordination Meeting on April 19, 2017.

Loudon-Canterbury, #29613A (A004(458))
Ron Crickard started the presentation by explaining that this project has been presented to the Natural Resource Agencies prior to today and that this was to update the agencies as to the wetland iompacts as we approach advertising.

Trent Zanes briefly described the premise of this project: widening from two 12’ lanes with 12’ shoulders to 12’ lanes with a 12’ center turn lane and 12’ shoulders. This project is the second phase of the project finalizing construction this year.

Anthony King described the wetland impacts as being mostly Palustrine (forested, scrub/shrub, and some marsh) with a few riverine (only one permanent stream (Gues Meadow Brook). Gues Meadow Brook has 238 sf of temporary impacts and the bank adjacent to the brook has 57 sf of temporary impacts (bank impacts erroneously described as permanent during meeting, all impacts related to Gues Meadow Brook are temporary).

The roadway runoff first flush (Water Quality Volume) between the intersection with Hollow Root Road and the VFW building will be treated in a BMP pond adjacent to the VFW parcel (no wetlands impacted with this BMP). The higher order storms (Q2, Q10, and Q50) will bypass some runoff around the BMP with a flow splitter structure. There is a bypass pipe system that catches and transports some offsite runoff around the BMP. The BMP pond and bypass flows combine and outlet to Gues Meadow Brook via a stone lined swale south of the VFW parcel. Mark Kern (EPA) asked about wetlands in the BMP area. This is an upland/hill area with no wetlands.

At Soucook Lane there is a proposed BMP adjacent to the roadway between Soucook Lane and the drive for Fillmore Industries. This BMP treats runoff from north of the Beanstock store to Soucook Lane. The BMP outlets adjacent to an existing wetland with very little distance between the BMP outlet and the wetland due to topography limitations. Amy Lamb asked about locating this BMP in an adjacent cleared site. The BMP treats runoff from the inside of a roadway curve and the location chosen appears to be the best compromise between ROW costs and other wetland impacts.

Lori Sommer asked about the project mitigation. Ron Crickard explained that this project has a separate permit with separate mitigation.

AVOIDANCE AND MINIMIZATIONCHECKLIST

Water Division/Land Resources Management
Wetlands Bureau

RSA/Rule: RSA 482-A/ Env-Wt 311.07(d)

This checklist can be used in lieu of the written narrative required by Env-Wt 311.07(a) to demonstrate compliance with requirements for Avoidance and Minimization, pursuant to RSA 482-A:1 and Env-Wt 311.07(d).

A/M BMPs stands for "Wetlands Best Management Practice Techniques for Avoidance and Minimization" dated 2019, published by the New England Interstate Water Pollution Control Commission (Env-Wt 102.18).

Practicable means "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes" (Env-Wt 103.62).

SECTION 1 – CONTACT/LOCATION INFORMATION	
APPLICANT LAST NAME, FIRST NAME, M.I.: NHDOT - Scott, David	
PROJECT STREET ADDRESS: Waukewan Road	PROJECT TOWN: Center Harbor / New Hampton
TAX MAP & LOT NUMBER: ROW / 105 & R-7	

SECTION 2 - PRIMARY PURPOSE OF THE PROJECT		
Env-Wt 311.07(b)(1)	Indicate whether the primary purpose of the project is to construct a water-access structure or requires access through wetlands to reach a buildable lot or the buildable portion thereof.	☐ Yes ☒ No
If you answered "no" to this question, describe the purpose of the "non-access" project type you have proposed. The proposed project would include the rehabilitation of an existing bridge. The proposed rehabilitation would include the removal of the superstructure, the construction of new abutments behind the existing abutments, and the construction of a new superstructure which spans the existing abutments. In order to accommodate the new superstructure, the proposed project would include roughly 400 LF of roadway reconstruction as well.		

Avoidance and minimization requirements have not been met if you answer "No" to any technique/ construction timing in Sections 3 to 8, without providing justification that the requirements were not practicable and the proposed project incorporates the results of the functional assessment included as part of the functional assessment report or checklist.

SECTION 3 - AVOIDANCE PROJECT DESIGN TECHNIQUES		
Env-Wt 311.07(b)(2)	For any project that proposes permanent impacts of more than one acre or that proposes permanent impacts to a Priority Resource Area (PRA), or both, whether any other properties reasonably available to the applicant, whether already owned or controlled by the applicant or not, could be used to achieve the project's purpose without altering the	☐ Yes ☐ No ☒ N/A

	functions and values of any jurisdictional area, in particular wetlands, streams, and PRAs.	
Env-Wt 311.07(b)(3)	Alternative design techniques could not be used to avoid impacts to jurisdictional areas or their functions and values on the subject property or on another property reasonably available to the applicant.	☒ Yes ☐ No
Env-Wt 311.07(b)(4) Env-Wt 311.10(c)(1)	The results of the functional assessment required by Env-Wt 311.03(b)(10) were used to select the location of the proposed project having the least impact to wetland functions.	☒ Yes ☐ No
Env-Wt 311.07(b)(4) Env-Wt 311.10(c)(2)	The proposed project has been designed to have the least impact to wetland functions.	☒ Yes ☐ No
Env-Wt 311.07(b)(4) Env-Wt 311.10(c)(3)	Where impact to wetland functions is unavoidable, the proposed impacts are limited to the wetlands with the least valuable functions on the site while avoiding and minimizing impacts to the wetlands with the highest and most valuable functions.	☒ Yes ☐ No
Env-Wt 313.01(c) Env-Wt 313.03(b)(1)	No practicable alternative would reduce adverse impact on the area and environments and the project will not cause random or unnecessary destruction of wetlands.	☒ Yes ☐ No
Env-Wt 313.01(c)(3)	The project would not cause or contribute to the significant degradation of waters of the state or the loss of any PRAs.	☒ Yes ☐ No
Env-Wt 313.03(b)(2)	The project avoids impacts to marshes that are documented to provide sources of nutrients for finfish, crustacea, shellfish, and wildlife of significant value.	☐ Yes ☐ No ☒ N/A
Env-Wt 313.03(b)(3) Env-Wt 904.07(c)(8)	The project maintains hydrologic connectivity between adjacent wetlands or stream systems.	☒ Yes ☐ No
Env-Wt 311.01(b) Env-Wt 313.03(b)(4)	The project avoids and minimizes impacts to wetlands and other areas of jurisdiction under RSA 482-A, especially those in which there are exemplary natural communities, vernal pools, protected species and habitat, documented fisheries, and habitat and reproduction areas for species of concern.	☒ Yes ☐ No
Env-Wt 313.03(b)(5)	The project avoids and minimizes impacts that eliminate, depreciate, or obstruct public commerce, navigation, or recreation.	☒ Yes ☐ No ☐ N/A
Env-Wt 311.10 A/M BMPs	Buildings and/or access are positioned away from high function wetlands or surface waters to avoid impact.	☐ Yes ☐ No ☒ N/A
Env-Wt 311.10 A/M BMPs	The project clusters structures to avoid wetland impacts.	☐ Yes ☐ No ☒ N/A
Env-Wt 311.10 A/M BMPs	The placement of roads and utility corridors avoids wetlands and their associated streams.	☒ Yes ☐ No ☐ N/A

A/M BMPs	Proposed utilities are suspended from bridges to avoid trenching through wetlands.	☒ Yes ☐ No ☐ N/A
A/M BMPs	The width of access roads or driveways is reduced to avoid and minimize impacts. Pullouts are incorporated in the design as needed.	☒ Yes ☐ No ☐ N/A
A/M BMPs	Retaining walls are proposed to avoid placing fill in wetlands. The retaining walls would not block hydrology or wildlife corridors.	☒ Yes ☐ No ☐ N/A
A/M BMPs	The project proposes bridges or spans instead of roads/driveways/trails with culverts.	☒ Yes ☐ No ☐ N/A
A/M BMPs	Natural topography is incorporated in the design to avoid grading.	☒ Yes ☐ No

This checklist is not complete without a description of the specific avoidance project design techniques employed for this project:

The proposed project has been designed to avoid wetland impacts as much as is practicable. During preliminary phases of the project; other design alternatives were considered, including constructing a new bridge on a new alignment. The proposed alternative was selected due to it's significantly reduced wetland impacts when compared to other alternatives. Constructing the new abutments behind the existing abutments would avoid significant wetland impacts associated with constructing them elsewhere. Fill slopes and grading have been minimized as much as is practicable to avoid jurisdictional impacts. The stone retaining walls would be extended to prevent further grading into jurisdictional areas. The proposed project has been specifically designed to maintain hydraulic connectivity between adjacent wetlands, and would not be anticipated to have any effect on hydraulic connectivity. Roads and utilities are proposed within the same footprint as existing to avoid any associated wetland impacts.

SECTION 4 - MINIMIZATION DESIGN TECHNIQUES

Env-Wt 311.10	The project was designed to minimize impacts to higher-quality wetlands.	☒ Yes ☐ No ☐ N/A
Env-Wt 311.01(b) Env-Wt 313.03(b)	The project was designed to minimize impacts to habitat, reproduction areas, fishery, vernal pools, or protected species or habitat.	☒ Yes ☐ No
A/M BMPs	The project was designed to minimize the number of crossings and their size.	☒ Yes ☐ No
A/M BMPs	Wetlands and streams are proposed to be crossed at their narrowest point.	☒ Yes ☐ No ☐ N/A
Env-Wt 500 Env-Wt 600 Env-Wt 900	Wetland and stream crossings include features that accommodate aquatic organism passage and wildlife passage.	☒ Yes ☐ No ☐ N/A
Env-Wt 313.01(c)(1) Env-Wt 313.03(b)(6)	The project was designed to avoid and minimize impacts to floodplain wetlands that provide flood storage.	☒ Yes ☐ No ☐ N/A

Env-Wt 313.01(c)(1) Env-Wt 313.03(b)(7)	Impacts to natural riverine forested wetlands systems and scrub-shrub marsh complexes of high ecologic integrity are avoided and minimized.	☒ Yes ☐ No ☐ N/A
Env-Wt 313.01(c)(1) Env-Wt 313.03(b)(8)	Impacts to wetlands that would be detrimental to drinking water supply and groundwater aquifer levels are avoided and minimized.	☒ Yes ☐ No
Env-Wt 313.01(c)(1) Env-Wt 313.03(b)(9)	Adverse impacts to stream channels and their ability to handle stormwater runoff are avoided and minimized.	☒ Yes ☐ No
Env-Wt 900	Stream crossings are sized to address hydraulic capacity and geomorphic compatibility.	☐ Yes ☐ No ☒ N/A
A/M BMPs	Disturbed areas are used for crossings wherever practicable, including existing roadways, paths, or trails upgraded with new culverts or bridges.	☒ Yes ☐ No ☐ N/A
RSA 482-A:11, II	Project is designed to minimize impacts to abutting properties.	☒ Yes ☐ No
Env-Wt 307.13	Setbacks from property lines required by Env-Wt 307.13 are maintained.	☒ Yes ☐ No

This checklist is not complete without a description of the specific minimization design techniques employed for this project:

The proposed project has been specifically designed to minimize impacts to jurisdictional areas to the greatest extent practicable. The proposed project would maintain the current alignment, cross the wetland at the narrowest point, and maintain a similar crossing with respect to organism passage. The project was designed to have minimal cut and fill slopes which would result in minimal impacts on floodplain fuction and value, wetland ability to handle flood waters, and to maintain flood storage. The proposed project has been designed to utilize existing disturbed areas, and would not have a detrimental effect on abutting properties.

SECTION 5 - RESOURCE-SPECIFIC DESIGN TECHNIQUES

Env-Wt 500	The project is designed to address resource-specific avoidance and minimization criteria for non-tidal jurisdictional areas.	☒ Yes ☐ No ☐ N/A
Env-Wt 600	The project is designed to address resource-specific avoidance and minimization criteria for coastal lands and tidal waters/wetlands.	☐ Yes ☐ No ☒ N/A
Env-Wt 307.08 Env-Wt 700	The project is designed to address resource-specific avoidance and minimization criteria for designated prime wetlands.	☒ Yes ☐ No ☐ N/A

This checklist is not complete without a description of the resource-specific design techniques employed for this project:

The proposed project has been designed to minimize impacts on adjacent and impacted resources. The proposed project would be constructed within the footprint of previously disturbed area. This proposed construction would have the least impact on prime wetlands as well as the associated prime wetland buffer. The proposed project would also include significant native vegetative plantings throughout the prime wetland buffer. These proposed plantings would help enhance the function of the prime wetland buffer, and would serve to increase water quality running off into the associated prime wetlands.

SECTION 6 - PROJECT-SPECIFIC DESIGN TECHNIQUES

Env-Wt 500	The project is designed to use techniques outlined in Env-Wt 500 for projects in non-tidal jurisdictional areas.	☒ Yes ☐ No ☐ N/A
Env-Wt 600	The project is designed to use techniques outlined in Env-Wt 600 for projects in coastal lands and tidal waters/wetlands.	☐ Yes ☐ No ☒ N/A
Env-Wt 900	The project is designed to use stream crossing techniques outlined in Env-Wt 900 for stream crossing projects.	☐ Yes ☐ No ☒ N/A

This checklist is not complete without a description of the project-specific design techniques employed for this project:

The proposed project has been designed to meet the project specific design techniques outlined in Env-Wt 527.04. The project would protect wetland function, maintain hydrologic function, not impact flood storage, use protection measures to prevent discharge directly to wetlands, and stabilize temporary impact areas using native plantings. The proposed project has been specifically designed to minimize impacts to wetland and riparian function.

SECTION 7 - CONSTRUCTION TECHNIQUES

Env-Wt 311.05	Limits of jurisdictional areas, construction activities and proposed water quality protection measures are clearly marked on plans.	☒ Yes ☐ No
Env-Wt 307.03(b)	Best management practices (BMPs) for erosion control and construction stormwater management will be used and maintained during construction.	☒ Yes ☐ No
Env-Wt 307.03(c)	Techniques to protect water quality will be used.	☒ Yes ☐ No

Env-Wt 307.03(g)	Techniques to avoid fuel, oil, and hydraulic fluid spills in and around wetlands jurisdiction will be used.	☒ Yes ☐ No
Env-Wt 307.05(e)	The Best Management Practices For the Control of Invasive and Noxious Plant Species" (dated 2018, published by NHDOT) will be followed to avoid introducing nuisance or invasive species to the work site from soil or seed stock.	☒ Yes ☐ No
Env-Wt 307.03(b) Env-Wt 307.10 Env-Wt 307.15	Construction staging and stockpiling of materials will be kept out of wetlands with adequate containment measures.	☒ Yes ☐ No
Env-Wt 307.04	Techniques will be used to protect fisheries, bird migratory areas, fish, amphibian, and shellfish spawning or nursery areas, breeding areas, and high quality waters.	☒ Yes ☐ No
Env-Wt 307.05	Equipment brought from other sites will be cleaned away from wetlands so that invasive plants and exotic aquatic species of wildlife are not introduced into the work site.	☒ Yes ☐ No
Env-Wt 307.06	Techniques will be used to protect rare, threatened, and endangered species and habitat.	☒ Yes ☐ No
Env-Wt 307.07	The project will be conducted in compliance with the Shoreland Water Quality Protection Act.	☒ Yes ☐ No
Env-Wt 307.08	Water quality and environmental minimization measures will be in place to protect designated prime wetlands.	☒ Yes ☐ No
Env-Wt 307.10	Techniques will be used to meet standard dredge conditions outlined in Env-Wt 307.10.	☒ Yes ☐ No
Env-Wt 307.11	Techniques will be used to meet standard fill conditions outlined in Env-Wt 307.11.	☒ Yes ☐ No
Env-Wt 307.12	Work site will be restored in accordance with Env-Wt 307.12.	☒ Yes ☐ No
Env-Wt 307.15	Impacts from use of heavy machinery will be minimized.	☒ Yes ☐ No

This checklist is not complete without a description of the specific construction techniques employed for this project: The proposed project would require the development of a Stormwater Pollution Prevention Plan (SWPPP) and associated monitoring. All practices outlined in the NHDES publication "New Hampshire Stormwater Manual - Volume 3: Erosion and Sediment Controls During Construction" would be adheared to during construction. No invasive species have been noted in the area but all practices outlined in the NHDOT publication "Best Management Practices for the Control of Invasive and Noxious Plant Species" would be utilized if any are identified. Coordination has been ongoing regarding potential impacts to endangered species and their associated habitats. This coordination has determined that the proposed project would not be anticipated to have any adverse impacts on endangered species or their habitats. All heavy machinery use would be minimized and kept to previously disturbed areas during construciton of the proposed project.

SECTION 8 - CONSTRUCTION TIMING		
Env-Wt 307.04	The project will be conducted outside spawning or breeding season to reduce impacts to aquatic resources.	☒ Yes ☐ No
Env-Wt 307.10	Timing restrictions described in Env-Wt 307.10 will be adhered to.	☒ Yes ☐ No

These criteria do not relieve the applicant from the obligation to obtain other local, state or federal permits, and/or consult with other agencies as may be required (including US Environmental Protection Agency, US Army Corps of Engineers, NH Department of Transportation, NH Division of Historical Resources, NHDES Alteration of Terrain Bureau, etc.)

This checklist is not complete without a description of the specific construction timing employed for this project:

The area of the proposed project has a dam controlled water elevation and does not typicaly have low-flow or dry periods. As such, all proposed work would utilize cofferdams and dewatering to perform work in dry conditions. All appropriate turbidity controls would be used to prevent any water quality degredation, temporary or permanent.

PUBLIC HIGHWAYS
PROJECT-SPECIFIC WORKSHEET
FOR STANDARD APPLICATION

Water Division/Land Resources Management
Wetlands Bureau

Check the Status of your Application

RSA/Rule: RSA 482/ Env-Wt 522

This worksheet summarizes the criteria and requirements for a Standard Permit for "Public Highways", one of the 18 specific project types in Chapter Env-Wt 500. In addition to the project-specific criteria and requirements on this worksheet, all Standard Applications must meet the criteria and requirements listed in the Standard Application form (NHDES-W-06-012).

SECTION 1 - APPLICABILITY AND EXEMPTION (Env-Wt 527.01; Env-Wt 527.06(b))

This worksheet is for construction and maintenance projects for public highways in jurisdictional areas, but not for:

- Activities relating to stream crossings (which must be undertaken in accordance with Env-Wt 900);
- Public highway projects that impact tidal resources (which must be undertaken in accordance with Env-Wt 600); or
- Bank stabilization projects (which must be undertaken in accordance with Env-Wt 514).

Replacement of dislodged rocks on an existing rip-rap portion of a legally existing permitted road embankment to stabilize the structure may be done without a permit.

SECTION 2 - APPROVAL CRITERIA FOR PUBLIC HIGHWAY PROJECTS (Env-Wt 527.02)

An application for public highway project must meet the following approval criteria, subject to the rebuttable presumption in RSA 482-A:3, I-a that for applications proposed, sponsored, or administered by the New Hampshire Department of Transportation (NHDOT), NHDOT has exercised appropriate engineering judgment in the project's design:

☒ The project meets the design criteria specified in Env-Wt 527.04;

☒ The project is consistent with RSA 482-A:1, RSA 483, RSA 483-B, RSA 485-A, and RSA 212-A;

☒ The purpose of the project is to improve or maintain public safety, consistent with federal and state safety standards;

☒ The project will not cause displacement of flood storage wetlands or cause diversion of stream flow impacting abutting landowner property; and

☒ For a project in the 100-year floodplain, the project will not increase flood stages off-site.

SECTION 3 - APPLICATION REQUIREMENTS FOR PUBLIC HIGHWAY PROJECTS (Env-Wt 527.03)

Please provide the following information:

☒ A description of the scope of the project, the size of the impacts to aquatic resources, and the purpose of the project;

The proposed project would rehabilitate NHDOT Bridge #080/040 carrying Waukewan Road over the Lake Waukewan Inlet between Center Harbor and New Hampton. The bridge is on the State Red List; and the bridge's deck, superstructure, and substructure are all rated as "poor."

The proposed project would include closing the road to traffic, removing the superstrucutre, constructing new abutments behind the existing abutments, and constructing a new superstructure that spans over the existing abutments. The existing stone abutments would be reinforced as necessary. In addition to the bridge construction, the road would be raised slightly, in the vicinity of the bridge, to accommodate a deeper bridge superstructure while slightly increasing the size of the hydraulic opening. As a result of the slight increase in roadway elevation, the roadway would be reconstructed on either side of the bridge. The limits of the proposed roadway reconstruction would extend approximately 150 LF on the New Hampton side of the bridge, and approximately 250 LF on the Center Harbor side of the bridge. All proposed work would take place within the right-of-way. The proposed project would result in 158 SF of permanent Prime Wetland impacts, 1,383 SF of temporary Prime Wetland impacts, and 25,120 SF of Prime Wetland Buffer impacts.

☒ An accurate drawing with existing and proposed structure dimensions clearly annotated to:

- ☒ Document existing site conditions;
- ☒ Detail the precise location of the project and show the impact of the proposed activity on jurisdictional areas;
- ☒ Show existing and proposed contours at 2-foot intervals;
- ☒ Show existing and proposed structure invert elevations on the plans; and
- ☒ Use a scale based on standard measures of whole units, such as an engineering rule of one to 10, provided that if plans are not printed at full scale, a secondary scale shall be noted on the plans that identifies the half scale unit of measurement;

☒ All easements and right-of-way acquisition area outlines in relation to the project;

☒ The name of the professional engineer who developed the plans, whether an employee of the applicant or at a consulting firm; and

☒ An erosion control plan that shows:

- ☒ Existing and proposed contours at 2-foot intervals, with existing contours shown with a lighter line weight and proposed contours shown with a heavier line weight such as a bold font; and
- ☒ The outermost limit of all work areas, including temporary phasing work, with perimeter controls.

SECTION 4 - DESIGN REQUIREMENTS FOR PUBLIC HIGHWAY PROJECTS (Env-Wt 527.04)

In addition to meeting all applicable criteria established in Env-Wt 300, all projects must:

☒ Protect significant function wetlands, watercourses, and priority resource area(s);

☒ Minimize impacts to wetland and riparian function;

☒ Maintain wetland and stream hydrology and function to the remaining aquatic resources;

☒ Use on-site measures to compensate for any loss of flood storage where the project proposes:

- Filling or placement of structures in a 100-year floodplain; or
- Greater than 0.5 acre-feet of fill volume or a road crossing that affects floodplain conveyance;

☒ Use on-site minimization and water quality protection measures to prevent direct discharge to surface waters and wetlands, including retention of vegetated filter strips between the construction area and the aquatic resource areas to disperse runoff with no direct discharge to natural wetlands or surface waters; and

☒ Where temporary impacts will occur, include re-establishment of a similar ecosystem using vegetative species and spacing that are as similar as practicable to what was removed unless the applicant shows that the proposed vegetative composition will provide higher functions and values.

SECTION 5 - CONSTRUCTION REQUIREMENTS FOR PUBLIC HIGHWAY PROJECTS (Env-Wt 527.05)

In addition to complying with all applicable conditions in Env-Wt 307, the following construction requirements apply to public highway projects:

☒ The permit shall be contingent on review and approval by the department of final stream diversion and erosion control plans that detail the timing and method of stream flow diversion during construction and show temporary siltation, erosion, and turbidity control measures to be implemented; and

☒ The contractor responsible for completion of the work shall use techniques described in Env-Wq 1504.06, Env-Wq 1504.16, Env-Wq 1505.02, Env-Wq 1506, and Env-Wq 1508.

SECTION 6 - PUBLIC HIGHWAY PROJECTS PROJECT CLASSIFICATION (Env-Wt 527.07)

Public highway projects shall be classified based on the dimensions established in Env-Wt 407, subject to the adjustments and project exceptions established in Env-Wt 407.

CONFIDENTIAL – NH Dept. of Environmental Services review

Memo

NH Natural Heritage Bureau
HB Datacheck Results Letter

To: Tucker Gordon, HEB Engineers, Inc.
PO 440
North Conway, NH 03860

From: Amy Lamb, NH Natural Heritage Bureau
Date: 11/3/2020 (valid for one year from this date)
Re: Review by NH Natural Heritage Bureau
NHB File ID: NHB20-3285 Town: Center Harbor, New Hampton Location: Tax Maps: ROW
Description: Rehabilitation of the redlisted bridge on Waukewan Road between Center Harbor and New Hampton. This is a renewal of NHB19-3169.
cc: Kim Tuttle

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

Comments: Please continue to coordinate with the NH Fish & Game Department.

Vertebrate species	State[1]	Federal	Notes
Common Loon (*Gavia immer*)	T	--	Contact the NH Fish & Game Dept (see below).

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

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

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.

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

Tucker Gordon

From: jcooley@loon.org
Sent: Friday, September 27, 2019 4:18 PM
To: Tucker Gordon
Subject: RE: NHDOT Center Harbor-New Hampton 24579 Project

Greetings Tucker,

Thank you for contacting me and providing the materials related to the bridge project on Waukewan. Fortunately, all recent nesting and brooding has occurred at the red circles indicated on the eastern portion of the map frame shown in the Natural Heritage Bureau report, towards the middle of the lake. The circles indicated on the Snake River reflect historic nest sites that have not been used in recent years. Therefore, there are no concerns about bridge work disturbing an active loon nest, regardless of the time of year.

Best regards,

John

John Cooley, Jr.
Senior Biologist
Loon Preservation Committee
(603) 476-5666 x 17
www.loon.org

From: Tucker Gordon <tgordon@hebengineers.com>
Sent: Friday, September 27, 2019 12:22 PM
To: jcooley@loon.org
Cc: Chris Fournier <cfournier@hebengineers.com>; Alison Harris <aharris@hebengineers.com>; melilotus.dube@dot.nh.gov
Subject: NHDOT Center Harbor-New Hampton 24579 Project

John,

Please see the attached letter and associated documents regarding an upcoming bridge project in Center Harbor/New Hampton. Don't hesitate to reach out if you have any questions.

Thank you,

Tucker Gordon
Civil Engineer Technician

HEB Engineers, Inc.
Civil* | *Structural* | *Survey
New Hampshire (603) 356-6936 • Maine (207) 803-8265
tgordon@hebengineers.com • www.hebengineers.com

September 27, 2019

John Cooley, Loon Preservation Committee
PO Box 604
Moultonborough, NH 03254

Re: Center Harbor – New Hampton 24579, X-A002(923)
Waukewan Road Bridge #080/040 over the Lake Waukewan Inlet

The NHDOT is planning a project to rehabilitate the existing bridge located along Waukewan Road over the Snake River at the Inlet of Waukewan Lake, on the town line between the Town of Center Harbor and Town of New Hampton. The bridge has been on the State's red list since 2010. The proposed project includes closing the road to traffic, removing the concrete deck, constructing new abutments outside of the existing abutments, and spanning over the existing stone abutments with a new superstructure.

The scope and limits of work necessary for this project have been refined, and HEB Engineers, Inc. (HEB) is in the process of preparing the environmental documentation for this project. The project area is indicated on the attached USGS map.

An NHB datacheck returned records that indicated the presence of the Common Loon in the vicinity of the project. The areas noted are not within in the limits of the project. Carol Henderson (NH F&G) asked us to reach out to you regarding any possible impacts to the Common Loon. Any feedback and/or comments that you have to assist in limiting any potential impacts to the Common Loon would be appreciated; including specific project timing and/or construction methods.

If you have any questions or require further information regarding the above reference project, please do not hesitate to contact me.

Thank you.

Sincerely,

HEB Engineers, Inc.

Christopher R. Fournier, PE
Vice President / Lead Structural Engineer

Enclosure: USGS Map
NHB Datacheck

Copy: Melilotus Dube, NHDOT
File

P:\Jobs\2014\2014-052 NHDOT - Center Harbor-New Hampton 24579\Permitting\Categorical Exclusion\Correspondence\Endangered Species (Not Sent)\Ltr J. Cooley Loon Preservation Committee NEPA Corresp 09-27-19.docx

United States Department of the Interior

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

In Reply Refer To: March 18, 2020
Consultation Code: 05E1NE00-2017-SLI-2220
Event Code: 05E1NE00-2020-E-05202
Project Name: Center Harbor-New Hampton 24579

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

To Whom It May Concern:

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

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

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

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

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

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

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

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

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

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

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

Project Summary

Consultation Code: 05E1NE00-2017-SLI-2220

Event Code: 05E1NE00-2020-E-05202

Project Name: Center Harbor-New Hampton 24579

Project Type: TRANSPORTATION

Project Description: The proposed project will construct a new bridge carrying Waukewan Road over Lake Waukewan Inlet/Snake River between the Towns of Center Harbor and New Hampton. The existing bridge is structurally deficient, however, due to public input it will remain partially in place while new abutments will be constructed behind the existing stone abutments with a new voided slab bridge spanning the new abutments. This will require raising the grade and slightly widening the road at both approaches.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/43.66456541564186N71.54519095657432W

Counties: Belknap, NH

Endangered Species Act Species

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

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

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

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

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

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Flowering Plants

NAME	STATUS
Small Whorled Pogonia *Isotria medeoloides* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1890	Threatened

Critical habitats

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

United States Department of the Interior

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

IPaC Record Locator: 461-20898705 March 23, 2020

Subject: Consistency letter for the 'Center Harbor-New Hampton 24579' project (TAILS 05E1NE00-2017-R-2220) under the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

To whom it may concern:

The U.S. Fish and Wildlife Service (Service) has received your request to verify that the **Center Harbor-New Hampton 24579** (Proposed Action) may rely on the concurrence provided in the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (PBO) to satisfy requirements under Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 *et seq.*).

Based on the information you provided (Project Description shown below), you have determined that the Proposed Action is within the scope and adheres to the criteria of the PBO, including the adoption of applicable avoidance and minimization measures, and may affect, but is not likely to adversely affect the endangered Indiana bat (*Myotis sodalis*) and/or the threatened Northern long-eared bat (*Myotis septentrionalis*). Consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) is required.

This "may affect - not likely to adversely affect" determination becomes effective when the lead Federal action agency or designated non-federal representative requests the Service rely on the PBO to satisfy the agency's consultation requirements for this project.

Please provide this consistency letter to the lead Federal action agency or its designated non-federal representative with a request for review, and as the agency deems appropriate, to submit for concurrence verification through the IPaC system. The lead Federal action agency or designated non-federal representative should log into IPaC using their agency email account and click "Search by record locator". They will need to enter the record locator **461-20898705**.

For Proposed Actions that include bridge/structure removal, replacement, and/or maintenance activities: If your initial bridge/structure assessments failed to detect Indiana bats, but you later detect bats during construction, please submit the Post Assessment Discovery of Bats at Bridge/Structure Form (User Guide Appendix E) to this Service Office. In these instances, potential incidental take of Indiana bats may be exempted provided that the take is reported to the Service.

If the Proposed Action may affect any other federally-listed or proposed species and/or designated critical habitat, additional consultation between the lead Federal action agency and this Service Office is required. If the proposed action has the potential to take bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act may also be required. In either of these circumstances, please advise the lead Federal action agency accordingly.

The following species may occur in your project area and **are not** covered by this determination:

- Small Whorled Pogonia, *Isotria medeoloides* (Threatened)

Project Description

The following project name and description was collected in IPaC as part of the endangered species review process.

Name

Center Harbor-New Hampton 24579

Description

The proposed project will construct a new bridge carrying Waukewan Road over Lake Waukewan Inlet/Snake River between the Towns of Center Harbor and New Hampton. The existing bridge is structurally deficient, however, due to public input it will remain partially in place while new abutments will be constructed behind the existing stone abutments with a new voided slab bridge spanning the new abutments. This will require raising the grade and slightly widening the road at both approaches.

Determination Key Result

Based on your answers provided, this project(s) may affect, but is not likely to adversely affect the endangered Indiana bat and/or the threatened Northern long-eared bat, therefore, consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required. However, also based on your answers provided, this project may rely on the concurrence provided in the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

Qualification Interview

1. Is the project within the range of the Indiana bat[1]?

   [1] See Indiana bat species profile

   Automatically answered
   No

2. Is the project within the range of the Northern long-eared bat[1]?

   [1] See Northern long-eared bat species profile

   Automatically answered
   Yes

3. Which Federal Agency is the lead for the action?
   A) Federal Highway Administration (FHWA)

4. Are *all* project activities limited to non-construction[1] activities only? (examples of non-construction activities include: bridge/abandoned structure assessments, surveys, planning and technical studies, property inspections, and property sales)

   [1] Construction refers to activities involving ground disturbance, percussive noise, and/or lighting.

   No

5. Does the project include *any* activities that are **greater than** 300 feet from existing road/rail surfaces[1]?

   [1] Road surface is defined as the actively used [e.g. motorized vehicles] driving surface and shoulders [may be pavement, gravel, etc.] and rail surface is defined as the edge of the actively used rail ballast.

   No

6. Does the project include *any* activities **within** 0.5 miles of a known Indiana bat and/or NLEB hibernaculum[1]?

   [1] For the purpose of this consultation, a hibernaculum is a site, most often a cave or mine, where bats hibernate during the winter (see suitable habitat), but could also include bridges and structures if bats are found to be hibernating there during the winter.

   No

7. Is the project located **within** a karst area?

   No

8. Is there *any* suitable[1] summer habitat for Indiana Bat or NLEB **within** the project action area[2]? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

   [1] See the Service's summer survey guidance for our current definitions of suitable habitat.

   [2] The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR Section 402.02). Further clarification is provided by the national consultation FAQs.

   Yes

9. Will the project remove *any* suitable summer habitat[1] and/or remove/trim any existing trees **within** suitable summer habitat?

   [1] See the Service's summer survey guidance for our current definitions of suitable habitat.

   No

10. Does the project include activities **within documented NLEB habitat**[1][2]?

    [1] Documented roosting or foraging habitat – for the purposes of this consultation, we are considering documented habitat as that where Indiana bats and/or NLEB have actually been captured and tracked using (1) radio telemetry to roosts; (2) radio telemetry biangulation/triangulation to estimate foraging areas; or (3) foraging areas with repeated use documented using acoustics. Documented roosting habitat is also considered as suitable summer habitat within 0.25 miles of documented roosts.)

    [2] For the purposes of this key, we are considering documented corridors as that where Indiana bats and/or NLEB have actually been captured and tracked to using (1) radio telemetry; or (2) treed corridors located directly between documented roosting and foraging habitat.

    No

11. Does the project include wetland or stream protection activities associated with compensatory wetland mitigation?

    Yes

12. Does the project include slash pile burning?

    No

13. Does the project include *any* bridge removal, replacement, and/or maintenance activities (e.g., any bridge repair, retrofit, maintenance, and/or rehabilitation work)?

    Yes

14. Is there *any* suitable habitat[1] for Indiana bat or NLEB **within** 1,000 feet of the bridge? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

    [1] See the Service's current summer survey guidance for our current definitions of suitable habitat.

    Yes

15. Has a bridge assessment[1] been conducted **within** the last 24 months[2] to determine if the bridge is being used by bats?

    [1] See User Guide Appendix D for bridge/structure assessment guidance

    [2] Assessments must be completed no more than 2 years prior to conducting any work below the deck surface on all bridges that meet the physical characteristics described in the Programmatic Consultation, regardless of whether assessments have been conducted in the past. Due to the transitory nature of bat use, a negative result in one year does not guarantee that bats will not use that bridge/structure in subsequent years.

    Yes

    SUBMITTED DOCUMENTS

    - *Exhibit 20 - Tucker Gordon HEB Engineers Inc. NLEB Inspection Report 10-31-19.pdf https://ecos.fws.gov/ipac/project/B3LNEKT35ZD57PZNPQ4CDVWQHE/projectDocuments/18954514*

16. Did the bridge assessment detect *any* signs of Indiana bats and/or NLEBs roosting in/under the bridge (bats, guano, etc.)[1]?

    [1] If bridge assessment detects signs of *any* species of bats, coordination with the local FWS office is needed to identify potential threatened or endangered bat species. Additional studies may be undertaken to try to identify which bat species may be utilizing the bridge prior to allowing *any* work to proceed.

    Note: There is a small chance bridge assessments for bat occupancy do not detect bats. Should a small number of bats be observed roosting on a bridge just prior to or during construction, such that take is likely to occur or does occur in the form of harassment, injury or death, the PBO requires the action agency to report the take. Report all unanticipated take within 2 working days of the incident to the USFWS. Construction activities may continue without delay provided the take is reported to the USFWS and is limited to 5 bats per project.

    No

17. Will the bridge removal, replacement, and/or maintenance activities include installing new or replacing existing **permanent** lighting?

    No

18. Does the project include the removal, replacement, and/or maintenance of *any* structure other than a bridge? (e.g., rest areas, offices, sheds, outbuildings, barns, parking garages, etc.)

    No

19. Will the project involve the use of **temporary** lighting *during* the active season?

    No

20. Will the project install new or replace existing **permanent** lighting?

    No

21. Does the project include percussives or other activities (**not including tree removal/ trimming or bridge/structure work**) that will increase noise levels above existing traffic/ background levels?

    No

22. Are *all* project activities that are **not associated with** habitat removal, tree removal/ trimming, bridge and/or structure activities, temporary or permanent lighting, or use of percussives, limited to actions that DO NOT cause any additional stressors to the bat species?

    Examples: lining roadways, unlighted signage , rail road crossing signals, signal lighting, and minor road repair such as asphalt fill of potholes, etc.

    Yes

23. Will the project raise the road profile **above the tree canopy**?

    No

24. Are the wetland or stream protection activities associated with compensatory wetland/ stream mitigation portion of this project consistent with a Not Likely to Adversely Affect determination in this key?

    Automatically answered
    Yes, because your activities associated with compensatory wetland/stream mitigation activities do not clear suitable summer habitat and are not within 0.5 miles of Indiana bat or NLEB hibernaculum.

25. Are the project activities that are not associated with habitat removal, tree removal/ trimming, bridge and/or structure activities, temporary or permanent lighting, or use of percussives consistent with a No Effect determination in this key?

    Automatically answered
    Yes, other project activities are limited to actions that DO NOT cause any additional stressors to the bat species as described in the BA/BO

26. Is the bridge removal, replacement, or maintenance activities portion of this project consistent with a No Effect determination in this key?

    Automatically answered
    Yes, because the bridge has been assessed using the criteria documented in the BA and no signs of bats were detected

27. **General AMM 1**
    Will the project ensure *all* operators, employees, and contractors working in areas of known or presumed bat habitat are aware of *all* FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable Avoidance and Minimization Measures?

    Yes

Project Questionnaire

1. Have you made a No Effect determination for *all* other species indicated on the FWS IPaC generated species list?

   Yes

2. Have you made a May Affect determination for *any* other species on the FWS IPaC generated species list?

   No

3. Please describe the proposed bridge work:

   The proposed project would involve removing the existing bridge superstructure, constructing new abutments behind the existing abutments, and constructing a new butted deck beam superstructure that spans over the exiting stone abutments.

4. Please state the timing of all proposed bridge work:

   The proposed project is scheduled to take place in the Summer of 2021.

5. Please enter the date of the bridge assessment:

   10-31-2019

Avoidance And Minimization Measures (AMMs)

This determination key result includes the committment to implement the following Avoidance and Minimization Measures (AMMs):

GENERAL AMM 1

Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable AMMs.

Determination Key Description: FHWA, FRA, FTA Programmatic Consultation For Transportation Projects Affecting NLEB Or Indiana Bat

This key was last updated in IPaC on December 02, 2019. Keys are subject to periodic revision.

This decision key is intended for projects/activities funded or authorized by the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and/or Federal Transit Administration (FTA), which may require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 of the Endangered Species Act (ESA) for the endangered **Indiana bat** (*Myotis sodalis*) and the threatened **Northern long-eared bat** (NLEB) (*Myotis septentrionalis*).

This decision key should only be used to verify project applicability with the Service's February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects. The programmatic biological opinion covers limited transportation activities that may affect either bat species, and addresses situations that are both likely and not likely to adversely affect either bat species. This decision key will assist in identifying the effect of a specific project/activity and applicability of the programmatic consultation. The programmatic biological opinion is not intended to cover all types of transportation actions. Activities outside the scope of the programmatic biological opinion, or that may affect ESA-listed species other than the Indiana bat or NLEB, or any designated critical habitat, may require additional ESA Section 7 consultation.

APPENDIX D: Bridge/Structure Assessment Form

This form will be completed and submitted to the District Environmental Manager by the Contractor prior to conducting any work below the deck surface either from the underside; from activities above that bore down to the underside; from activities that could impact expansion joints; from deck removal on bridges; or from structure demolition for bridges/structures within 1000 feet of suitable bat habitat.

DOT Project #	Water Body	Date/Time of Inspection	Within 1,000ft of suitable bat habitat (circle one)
Center Harbor-New Hampton 24579	Waukewan Lake Inlet	10:00 am 10/31/2019	(Yes) No

Route	County	Federal Structure ID
Waukewan Road	Belknap	080/040

If the bridge/structure is 1,000 feet or more from suitable bat habitat (e.g., an urban or agricultural area without suitable foraging habitat or corridors linking the bridge to suitable foraging habitat), check box and STOP HERE. No assessment required. ☐
Please submit to the U.S. Fish and Wildlife Service.

Areas Inspected (Check all that apply)

Bridges		Culverts/Other Structures		Summary Info (circle all that apply)			
All vertical crevices sealed at the top and 0.5-1.25" wide & ≥4" deep	✓	Crevices, rough surfaces or imperfections in concrete	✓	Human disturbance or traffic under bridge/in culvert or at the structure	High	(Low)	None
All crevices >12" deep & not sealed	✓	Spaces between walls, ceiling joists	N/A	Possible corridors for netting	None/(poor)	Marginal	Excellent
All guardrails	✓						
All expansion joints	N/A						
Spaces between concrete end walls and the bridge deck	N/A						

Vertical surfaces on concrete I-beams	N/A						

Evidence of Bats (Circle all that apply) Presence of one or more indicators is sufficient evidence that bats may be using the structure.

None

Visual (e.g. survey, thermal, emergent etc.)
- Live __number seen 0
- Dead __number seen 0

Photo documentation Y/N

Guano No
Odor Y/N
Photo documentation Y/N

Staining definitively from bats No
Photo documentation Y/N

Audible No

Assessment Conducted By: Tucker Gordon **Signature(s):** [signature] 10-31-19

District Environmental Use Only: Date Received by District Environmental Manager: _____

DOT Bat Assessment Form Instructions

1. Assessments must be completed no more than 2 years prior to conducting any work below the deck surface on all bridges, regardless of whether assessments have been conducted in the past.
2. Any bridge/structure suspected of providing habitat for any species of bat will be removed from work schedules until such time that the DOT has coordinated with the USFWS. Additional studies may be undertaken by the DOT to determine what species may be utilizing each structure identified as supporting bats prior to allowing any work to proceed.
3. Any questions should be directed to the District Environmental Manager.

United States Department of the Interior

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

In Reply Refer To:
Consultation Code: 05E1NE00-2017-I-2220
Event Code: 05E1NE00-2020-E-05421
Project Name: Center Harbor-New Hampton 24579

March 24, 2020

Subject: Concurrence verification letter for the 'Center Harbor-New Hampton 24579' project under the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

To whom it may concern:

The U.S. Fish and Wildlife Service (Service) has received your request to verify that the **Center Harbor-New Hampton 24579** (Proposed Action) may rely on the concurrence provided in the February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (PBO) to satisfy requirements under Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C 1531 *et seq.*).

Based on the information you provided (Project Description shown below), you have determined that the Proposed Action is within the scope and adheres to the criteria of the PBO, including the adoption of applicable avoidance and minimization measures, and may affect, but is not likely to adversely affect (NLAA) the endangered Indiana bat (*Myotis sodalis*) and/or the threatened Northern long-eared bat (*Myotis septentrionalis*).

The Service has 14 calendar days to notify the lead Federal action agency or designated non-federal representative if we determine that the Proposed Action does not meet the criteria for a NLAA determination under the PBO. If we do not notify the lead Federal action agency or designated non-federal representative within that timeframe, you may proceed with the Proposed Action under the terms of the NLAA concurrence provided in the PBO. This verification period allows Service Field Offices to apply local knowledge to implementation of the PBO, as we may identify a small subset of actions having impacts that were unanticipated. In such instances, Service Field Offices may request additional information that is necessary to verify inclusion of the proposed action under the PBO.

For Proposed Actions that include bridge/structure removal, replacement, and/or maintenance activities: If your initial bridge/structure assessments failed to detect Indiana bats, but you later detect bats during construction, please submit the Post Assessment Discovery of Bats at Bridge/Structure Form (User Guide Appendix E) to this Service Office. In these instances, potential incidental take of Indiana bats may be exempted provided that the take is reported to the Service.

If the Proposed Action is modified, or new information reveals that it may affect the Indiana bat and/or Northern long-eared bat in a manner or to an extent not considered in the PBO, further review to conclude the requirements of ESA Section 7(a)(2) may be required. If the Proposed Action may affect any other federally-listed or proposed species, and/or any designated critical habitat, additional consultation between the lead Federal action agency and this Service Office is required. If the proposed action has the potential to take bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act may also be required. In either of these circumstances, please contact this Service Office.

The following species may occur in your project area and **are not** covered by this determination:

- Small Whorled Pogonia, *Isotria medeoloides* (Threatened)

Project Description

The following project name and description was collected in IPaC as part of the endangered species review process.

Name

Center Harbor-New Hampton 24579

Description

The proposed project will construct a new bridge carrying Waukewan Road over Lake Waukewan Inlet/Snake River between the Towns of Center Harbor and New Hampton. The existing bridge is structurally deficient, however, due to public input it will remain partially in place while new abutments will be constructed behind the existing stone abutments with a new voided slab bridge spanning the new abutments. This will require raising the grade and slightly widening the road at both approaches.

Determination Key Result

Based on your answers provided, this project(s) may affect, but is not likely to adversely affect the endangered Indiana bat and/or the threatened Northern long-eared bat, therefore, consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required. However, also based on your answers provided, this project may rely on the concurrence provided in the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

Qualification Interview

1. Is the project within the range of the Indiana bat[1]?

   [1] See Indiana bat species profile

   Automatically answered
   No

2. Is the project within the range of the Northern long-eared bat[1]?

   [1] See Northern long-eared bat species profile

   Automatically answered
   Yes

3. Which Federal Agency is the lead for the action?
   A) Federal Highway Administration (FHWA)

4. Are *all* project activities limited to non-construction[1] activities only? (examples of non-construction activities include: bridge/abandoned structure assessments, surveys, planning and technical studies, property inspections, and property sales)

   [1] Construction refers to activities involving ground disturbance, percussive noise, and/or lighting.

   No

5. Does the project include *any* activities that are **greater than** 300 feet from existing road/rail surfaces[1]?

   [1] Road surface is defined as the actively used [e.g. motorized vehicles] driving surface and shoulders [may be pavement, gravel, etc.] and rail surface is defined as the edge of the actively used rail ballast.

   No

6. Does the project include *any* activities **within** 0.5 miles of a known Indiana bat and/or NLEB hibernaculum[1]?

   [1] For the purpose of this consultation, a hibernaculum is a site, most often a cave or mine, where bats hibernate during the winter (see suitable habitat), but could also include bridges and structures if bats are found to be hibernating there during the winter.

   No

7. Is the project located **within** a karst area?

   No

8. Is there *any* suitable[1] summer habitat for Indiana Bat or NLEB **within** the project action area[2]? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

   [1] See the Service's summer survey guidance for our current definitions of suitable habitat.

   [2] The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR Section 402.02). Further clarification is provided by the national consultation FAQs.

   Yes

9. Will the project remove *any* suitable summer habitat[1] and/or remove/trim any existing trees **within** suitable summer habitat?

   [1] See the Service's summer survey guidance for our current definitions of suitable habitat.

   No

10. Does the project include activities **within documented NLEB habitat**[1][2]?

    [1] Documented roosting or foraging habitat – for the purposes of this consultation, we are considering documented habitat as that where Indiana bats and/or NLEB have actually been captured and tracked using (1) radio telemetry to roosts; (2) radio telemetry biangulation/triangulation to estimate foraging areas; or (3) foraging areas with repeated use documented using acoustics. Documented roosting habitat is also considered as suitable summer habitat within 0.25 miles of documented roosts.)

    [2] For the purposes of this key, we are considering documented corridors as that where Indiana bats and/or NLEB have actually been captured and tracked to using (1) radio telemetry; or (2) treed corridors located directly between documented roosting and foraging habitat.

    No

11. Does the project include wetland or stream protection activities associated with compensatory wetland mitigation?

    Yes

12. Does the project include slash pile burning?

    No

13. Does the project include *any* bridge removal, replacement, and/or maintenance activities (e.g., any bridge repair, retrofit, maintenance, and/or rehabilitation work)?

    Yes

14. Is there *any* suitable habitat[1] for Indiana bat or NLEB **within** 1,000 feet of the bridge? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

    [1] See the Service's current summer survey guidance for our current definitions of suitable habitat.

    Yes

15. Has a bridge assessment[1] been conducted **within** the last 24 months[2] to determine if the bridge is being used by bats?

    [1] See User Guide Appendix D for bridge/structure assessment guidance

    [2] Assessments must be completed no more than 2 years prior to conducting any work below the deck surface on all bridges that meet the physical characteristics described in the Programmatic Consultation, regardless of whether assessments have been conducted in the past. Due to the transitory nature of bat use, a negative result in one year does not guarantee that bats will not use that bridge/structure in subsequent years.

    Yes

    SUBMITTED DOCUMENTS

    - *Exhibit 20 - Tucker Gordon HEB Engineers Inc. NLEB Inspection Report 10-31-19.pdf https://ecos.fws.gov/ipac/project/B3LNEKT35ZD57PZNPQ4CDVWQHE/projectDocuments/18954514*

16. Did the bridge assessment detect *any* signs of Indiana bats and/or NLEBs roosting in/under the bridge (bats, guano, etc.)[1]?

    [1] If bridge assessment detects signs of *any* species of bats, coordination with the local FWS office is needed to identify potential threatened or endangered bat species. Additional studies may be undertaken to try to identify which bat species may be utilizing the bridge prior to allowing *any* work to proceed.

    Note: There is a small chance bridge assessments for bat occupancy do not detect bats. Should a small number of bats be observed roosting on a bridge just prior to or during construction, such that take is likely to occur or does occur in the form of harassment, injury or death, the PBO requires the action agency to report the take. Report all unanticipated take within 2 working days of the incident to the USFWS. Construction activities may continue without delay provided the take is reported to the USFWS and is limited to 5 bats per project.

    No

17. Will the bridge removal, replacement, and/or maintenance activities include installing new or replacing existing **permanent** lighting?

    No

18. Does the project include the removal, replacement, and/or maintenance of *any* structure other than a bridge? (e.g., rest areas, offices, sheds, outbuildings, barns, parking garages, etc.)

    No

19. Will the project involve the use of **temporary** lighting *during* the active season?

    No

20. Will the project install new or replace existing **permanent** lighting?

    No

21. Does the project include percussives or other activities (**not including tree removal/ trimming or bridge/structure work**) that will increase noise levels above existing traffic/ background levels?

    No

22. Are *all* project activities that are **not associated with** habitat removal, tree removal/ trimming, bridge and/or structure activities, temporary or permanent lighting, or use of percussives, limited to actions that DO NOT cause any additional stressors to the bat species?

    Examples: lining roadways, unlighted signage , rail road crossing signals, signal lighting, and minor road repair such as asphalt fill of potholes, etc.

    Yes

23. Will the project raise the road profile **above the tree canopy**?

    No

24. Are the wetland or stream protection activities associated with compensatory wetland/ stream mitigation portion of this project consistent with a Not Likely to Adversely Affect determination in this key?

    Automatically answered
    Yes, because your activities associated with compensatory wetland/stream mitigation activities do not clear suitable summer habitat and are not within 0.5 miles of Indiana bat or NLEB hibernaculum.

25. Are the project activities that are not associated with habitat removal, tree removal/ trimming, bridge and/or structure activities, temporary or permanent lighting, or use of percussives consistent with a No Effect determination in this key?

    Automatically answered
    Yes, other project activities are limited to actions that DO NOT cause any additional stressors to the bat species as described in the BA/BO

26. Is the bridge removal, replacement, or maintenance activities portion of this project consistent with a No Effect determination in this key?

    Automatically answered
    Yes, because the bridge has been assessed using the criteria documented in the BA and no signs of bats were detected

27. **General AMM 1**
    Will the project ensure *all* operators, employees, and contractors working in areas of known or presumed bat habitat are aware of *all* FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable Avoidance and Minimization Measures?

    Yes

Project Questionnaire

1. Have you made a No Effect determination for *all* other species indicated on the FWS IPaC generated species list?

   Yes

2. Have you made a May Affect determination for *any* other species on the FWS IPaC generated species list?

   No

3. Please describe the proposed bridge work:

   The proposed project would involve removing the existing bridge superstructure, constructing new abutments behind the existing abutments, and constructing a new butted deck beam superstructure that spans over the exiting stone abutments.

4. Please state the timing of all proposed bridge work:

   The proposed project is scheduled to take place in the Summer of 2021.

5. Please enter the date of the bridge assessment:

   10-31-2019

Avoidance And Minimization Measures (AMMs)

This determination key result includes the committment to implement the following Avoidance and Minimization Measures (AMMs):

GENERAL AMM 1

Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable AMMs.

Determination Key Description: FHWA, FRA, FTA Programmatic Consultation For Transportation Projects Affecting NLEB Or Indiana Bat

This key was last updated in IPaC on December 02, 2019. Keys are subject to periodic revision.

This decision key is intended for projects/activities funded or authorized by the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and/or Federal Transit Administration (FTA), which may require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 of the Endangered Species Act (ESA) for the endangered **Indiana bat** (*Myotis sodalis*) and the threatened **Northern long-eared bat** (NLEB) (*Myotis septentrionalis*).

This decision key should only be used to verify project applicability with the Service's February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects. The programmatic biological opinion covers limited transportation activities that may affect either bat species, and addresses situations that are both likely and not likely to adversely affect either bat species. This decision key will assist in identifying the effect of a specific project/activity and applicability of the programmatic consultation. The programmatic biological opinion is not intended to cover all types of transportation actions. Activities outside the scope of the programmatic biological opinion, or that may affect ESA-listed species other than the Indiana bat or NLEB, or any designated critical habitat, may require additional ESA Section 7 consultation.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
http://www.fws.gov/newengland

January 22, 2020

To Whom It May Concern:

This project was reviewed for the presence of federally listed or proposed, threatened or endangered species or critical habitat per instructions provided on the U.S. Fish and Wildlife Service's New England Field Office website:

https://www.fws.gov/newengland/endangeredspecies/index.html (accessed January 2020)

Based on information currently available to us, no federally listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project area(s). Preparation of a Biological Assessment or further consultation with us under section 7 of the Endangered Species Act is not required. No further Endangered Species Act coordination is necessary for a period of one year from the date of this letter, unless additional information on listed or proposed species becomes available.

Thank you for your cooperation. Please contact David Simmons of this office at 603-227-6425 if we can be of further assistance.

Sincerely yours,

Thomas R. Chapman
Supervisor
New England Field Office

Please mail 2 copies of the completed form and required materials to:

Cultural Resources Staff
Bureau of Environment
NH Department of Transportation
7 Hazen Drive
Concord, NH 03302

RECEIVED DEC 08 2015

DHR Use Only	
R&C #	7273
Log In Date	___/___/___
Response Date	___/___/___
Sent Date	___/___/___

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

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

GENERAL PROJECT INFORMATION

DOT Project Name & Number: Center Harbor-New Hampton, 24579

Brief Descriptive Project Title: Bridge Rehabilitation or Replacement 080/040

Project Location: Waukewan Road over Lake Waukewan Inlet (Snake River)

City/Town: Center Harbor and New Hampton

Lead Federal Agency and Contact *(if applicable)*
(Agency providing funds, licenses, or permits)

Permit Type and Permit or Job Reference #

DOT Environmental Manager *(if applicable)*: Ronald Crickard

PROJECT SPONSOR INFORMATION

Project Sponsor Name: NHDOT

Mailing Address: PO Box 483, 7 Hazen Drive — Phone Number: (603) 271-3734

City: Concord — State: NH — Zip: 03302 — Email: rlandry@dot.state.nh.us

CONTACT PERSON TO RECEIVE RESPONSE

Name/Company: Christopher R. Fournier, PE / HEB Engineers, Inc.

Mailing Address: PO Box 440 — Phone Number: (603) 356-6936

City: North Conway — State: NH — Zip: 03860 — Email: cfournier@hebengineers.com

This form is updated periodically. Please download the current form at http://www.nh.gov/nhdhr/review. *Please refer to the Request for Project Review for Transportation Projects Instructions for direction on completing this form.* Submit 2 copies of this project review form for each project for which review is requested. Include 1 self-addressed stamped envelope to expedite review response. Project submissions will not be accepted via facsimile or e-mail. This form is required. Review request form must be complete for review to begin. Incomplete forms will be sent back to the applicant without comment. Please be aware that this form may only initiate consultation. For some projects, additional information will be needed to complete the Section 106 review. All items and supporting documentation submitted with a review request, including photographs and publications, will be retained by the DOT and the DHR as part of its review records. Items to be kept confidential should be clearly identified. For questions regarding the DHR review process and the DHR's role in it, please visit our website at: http://www.nh.gov/nhdhr/review or contact the R&C Specialist at christina.st.louis@dcr.nh.gov or 603.271.3558.

PROJECTS CANNOT BE PROCESSED WITHOUT THIS INFORMATION

Project Boundaries and Description

- [x] Attach the relevant portion of a 7.5' USGS Map (photocopied or computer-generated) ***indicating the proposed area of potential effect (APE).*** *(See RPR for Transportation Projects Instructions and R&C FAQs for guidance. Note that the APE is subject to approval by lead federal agency and SHPO.)*
- [x] Attach a detailed narrative description of the proposed project.
- [ ] Attach current engineering plans with tax parcel, landscape, and building references, and areas of proposed excavation, if available.
- [x] Attach photos of the project area/APE with mapped photo key (overview of project location and area adjacent to project location, and specific areas of proposed impacts and disturbances.) *(Blank photo logs are available on the DHR website. Informative photo captions can be used in place of a photo log.)*
- [x] A DHR file review must be conducted to identify properties within or adjacent to the APE. Provide file review results in **Table 1**. *(Blank table forms are available on the DHR website.)*
  File review conducted on 07 / 01 / 2015 .*

  **The DHR recommends that all survey/National Register nomination forms and their Determination of Eligibility (green) sheets are copied for your use in project development.*

Architecture

Are there any buildings, structures (bridges, walls, culverts, etc.) objects, districts or landscapes within the APE? [x] Yes [ ] No
If no, skip to Archaeology section. If yes, submit all of the following information:

- [x] Attach completed **Table 2.**
- [x] Photographs of ***each*** resource or streetscape located within the APE. Add to the mapped photo key and photo log noted above. (Digital photographs are accepted. All photographs must be clear, crisp and focused.)
- [ ] Copies of National Register boundary (listed *or* eligible) mapping, and add National Register boundaries for listed and eligible properties to the 7.5' USGS project map *(if applicable).*

Archaeology

Does the proposed undertaking involve ground-disturbing activity? [x] Yes [ ] No
If yes, submit all of the following information:

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

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

AGENCY COMMENT *This Space for DOT and Division of Historical Resources Use Only*

Sent to DHR; Authorized DOT Signature: _____ Date: 12/8/2015

- [ ] Insufficient information to initiate review.
- [ ] Additional information is needed in order to complete review.

Comments: no archaeological issues as long as construction will in existing footprint.
Continue consultation after the inventory form has been reviewed at a Determination of Eligibility meeting.
Please confirm the ages of properties in the four quadrants of the bridge (or note vacant land).

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

Authorized DHR Signature: Laura A Black Date: Dec 15, 2015

NEW HAMPSHIRE DIVISION OF HISTORICAL RESOURCES
State of New Hampshire, Department of Cultural Resources
19 Pillsbury Street, Concord, NH 03301-3570
TDD Access: Relay NH 1-800-735-2964
www.nh.gov/nhdhr

603-271-3483
603-271-3558
FAX 603-271-3433
preservation@dcr.nh.gov

May 17, 2016

Jillian Edelmann
Bureau of Environment
NH Department of Transportation
Hazen Drive
Concord NH 03302-0483

Re: DOT/FHWA X-A002(923), 24579, RPR 7273

Dear Jill:

Thank you for requesting a determination of National Register eligibility for the property listed below. As requested, the Division of Historical Resources' Determination of Eligibility Committee has reviewed the *DHR Inventory Form* prepared by Historic Documentation Company; based on the information available, the DOE Committee's evaluation of National Register eligibility is:

TOWN/CITY	PROPERTY	DETERMINATION
Center Harbor	Revised Waukewan Bridge 080/040 over Lake Waukewan Inlet (Snake River), CEN0008	Not Eligible

A copy of the DHR evaluation form is attached for your use. The inventory data and the evaluation will also be added to the statewide survey database for historic properties in New Hampshire.

Please contact Mary Kate Ryan at 271-6435 or MaryKate.Ryan@dcr.nh.gov if you have questions.

Sincerely,

Chris

Christina St.Louis
Program Specialist

Enclosure

cc: Elizabeth Muzzey / State Historic Preservation Officer
FHWA
Richard Casella, Historic Documentation Company
HEB

Determination of Eligibility (DOE)

Inventory #: CEN0008

Review Date: 5/11/2016 *DOE Date:* 2/12/2016

☑ Final DOE Approved

Property Name: Bridge (080/040)

Area:

Address: Waukewan Road over Lake Waukewan Inlet

Town: Center Harbor **County:** Belknap

Reviewed For: R&C

DOE Program(s):
Federal Highway, NH Dept. of Transportatio

DETERMINATION OF ELIGIBILITY

Not eligible for either NR or SR

Integrity: Partial **Level:** Local

Criteria: *A:* No *B:* No *C:* No *D:* No *E:* N

STATEMENT OF SIGNIFICANCE:

The DOE Committee agrees that the 1-span concrete slab bridge in Center Harbor built in 1928 does not meet Criterion C, nor does it retain integrity under that criterion. However, more information is needed on the bridge and its 20th century history, particularly associated with automobile travel and tourism in the Lakes Region, and the potential for associations with summer cottage development on Lake Waukewan before eligibility under Criterion A can be determined.
Updated 5/11/16: As requested, more information including 20th century maps of the area were provide on continuations sheets. The DOE Committee agrees that the bridge, which replaced an earlier crossing, is not associated with events important to the broad patterns of development of the area and is not elligible for the National Register under Criterion A.

Period of Significance:
to
☐ Period not applicable

Boundary: bridge including abutments and approaches.

Follow Up:
notify appropriate parties

Comments:

Section 106 Programmatic Agreement – Cultural Resources Review Effect Finding

Appendix B Certification – Projects with Minimal Potential to Cause Effects

Date Reviewed: 5/17/2016

Project Name: Center Harbor – New Hampton Waukewan Road Bridge over Lake Waukewan Inlet #080/040

State Number: 24579 **FHWA Number:** X-A002(923)

Environmental Contact: Melilotus Dube
Email Address: Melilotus.dube@dot.nh.gov
DOT Project Manager: Joe Adams, P.E.

Project Description: Rehabilitation of 13-foot span concrete slab bridge with stone abutments including: removal of concrete slab superstructure, installation of new cast-in-place abutments behind existing stone abutments, stabilization of existing stone abutments and wingwalls, installation of new precast concrete voided slab beam superstructure, installation of cast-in-place concrete approach slabs, installation of bridge and approach rails with appropriate terminal end units, reconstruction of roadway approaches with slight vertical profile and horizontal alignment changes, construction of fill slopes and rockery walls within existing R.O.W., and wetland restoration utilizing plantings of native species.

Please select the applicable undertaking type(s):

☒	1. Modernization and general highway maintenance **that may require additional highway right-of-way or easement**, and which is **not within the boundaries of an historic property or district,** including:
	I. construction of wetland mitigation areas in previously disturbed areas of the roadway ROW Choose an item.
☒	2. Non-historic bridge and culvert maintenance, renovation, or total replacement, **that may require minor additional right-of-way or easement**, and which is **not within the boundaries of an historic property or district**, including:
	b. replacement or maintenance of non-historic bridges
☐	3. Historic bridge maintenance activities within the limits of existing right-of-way, including:
	Choose an item. Choose an item.
☐	4. Stream stabilization and restoration activities (including removal of debris or sediment obstructing the natural waterway, or any non-invasive action to restore natural conditions).
☐	5. Construction of bicycle lanes and pedestrian walkways, sidewalks, shared-use paths and facilities, small passenger shelters, and alterations to facilities or vehicles in order to make them accessible for elderly and handicapped persons, **not within the boundaries of an historic property or district**.
☐	6. Installation of bicycle racks, **not within the boundaries of an historic property or district**.
☐	7. Recreational trail construction, **not within the boundaries of an historic property or district**.
☐	8. Recreational trail maintenance when done on existing alignment.
☐	9. Modernization, maintenance, and safety improvements of railroad facilities within the existing railroad or highway right-of-way, **not within the boundaries of an historic property or district, and no historic railroad features are impacted,** including, but not limited to:
	Choose an item. Choose an item.
☐	10. Acquisition or renewal of scenic, conservation, habitat, or other land preservation easements

Section 106 Programmatic Agreement – Cultural Resources Review Effect Finding

Appendix B Certification – Projects with Minimal Potential to Cause Effects

☐	11. Installation of Intelligent Transportation Systems.

Please describe how this project is applicable under Appendix B of the Programmatic Agreement.

The project is intended to largely replace the functional components of the bridge, while maintaining the character of the bridge site and roadway. The existing stone abutments and wingwalls from the original construction in the 1800's are to remain, be stabilized, and restored, while new load carrying abutments are added. The new superstructure is intended to span over the existing abutments and bear on the new abutments. Although, following the completion of an Individual Inventory Form, the bridge was determined to be ineligible for the National Register of Historic Places, persistent and clear public support of a bridge rehabilitation largely drove the scope of the project.

NHDOT in-house projects: Please append photographs, USGS maps, design plans and as-built plans, if available, for review.
LPA projects: Please submit this Certification Form along with the Transportation RPR

Coordination Efforts:

Has an RPR been submitted to NHDOT for this project?	Yes	NHDHR R&C # assigned?	7273
Please identify public outreach effort contacts; method of outreach and date:	Three Public Informational Meetings were held (10/27/2015, 06/08//2016, 09/27/2016) and two additional workgroup sessions were held (7/18/2016 & 9/19/2017) with select members of the towns.		

Finding: (To be filled out by NHDOT Cultural Resources Staff)

☐	**No Potential to Cause Effects**	☒	**No Historic Properties Affected**
This finding serves as the Section 106 Memorandum for your environmental documents, no further coordination is necessary.			
☐	This project does *not* comply with Appendix B, and will continue under the Section 106 review process outlined in 36 CFR 800.3-800.7. Please contact NHDOT Cultural Resources Staff to determine next steps.		
	NHDOT comments:		

Jill Edleson — NHDOT Cultural Resources Staff

4/19/2018 — Date

Coordination of the Section 106 process should begin as early as possible in the planning phase of the project (undertaking) so as not to cause a delay.

Project sponsors should not predetermine a Section 106 finding under the assumption that an undertaking conforms to the types listed in Appendix B until this form is signed by the NHDOT Bureau of Environment Cultural Resources Program staff.

Every project shall be coordinated with, and reviewed by the NHDOT-BOE Cultural Resources Program in accordance with the Cultural Resources Programmatic Agreement among the Advisory Council on Historic Preservation, Federal Highway Administration, NH Department of Transportation, and the State Historic Preservation Office. In accordance with the Advisory Council's regulations, we will continue to consult, as appropriate, as this project proceeds.

If any portion of the undertaking is not entirely limited to any one or a combination of the types specified in Appendix B (with, or without a portion that is included as a type listed in Appendix A), please continue discussions with NHDOT Cultural Resources staff.

NEW HAMPSHIRE DIVISION OF HISTORICAL RESOURCES
State of New Hampshire, Department of Cultural Resources
19 Pillsbury Street, Concord, NH 03301-3570
TDD Access: Relay NH 1-800-735-2964
www.nh.gov/nhdhr

603-271-3483
603-271-3558
FAX 603-271-3433
preservation@dcr.nh.gov

May 17, 2016

Jillian Edelmann
Bureau of Environment
NH Department of Transportation
Hazen Drive
Concord NH 03302-0483

Re: DOT/FHWA X-A002(923), 24579, RPR 7273

Dear Jill:

Thank you for requesting a determination of National Register eligibility for the property listed below. As requested, the Division of Historical Resources' Determination of Eligibility Committee has reviewed the *DHR Inventory Form* prepared by Historic Documentation Company; based on the information available, the DOE Committee's evaluation of National Register eligibility is:

TOWN/CITY	PROPERTY	DETERMINATION
Center Harbor	Revised Waukewan Bridge 080/040 over Lake Waukewan Inlet (Snake River), CEN0008	Not Eligible

A copy of the DHR evaluation form is attached for your use. The inventory data and the evaluation will also be added to the statewide survey database for historic properties in New Hampshire.

Please contact Mary Kate Ryan at 271-6435 or MaryKate.Ryan@dcr.nh.gov if you have questions.

Sincerely,

Chris

Christina St.Louis
Program Specialist

Enclosure

cc: Elizabeth Muzzey / State Historic Preservation Officer
FHWA
Richard Casella, Historic Documentation Company
HEB

Determination of Eligibility (DOE)

Inventory #: CEN0008

Review Date: 5/11/2016 ***DOE Date:*** 2/12/2016 ☑ Final DOE Approved

Property Name: Bridge (080/040)

Area:

Address: Waukewan Road over Lake Waukewan Inlet

Town: Center Harbor **County:** Belknap

Reviewed For: R&C **DOE Program(s):** Federal Highway, NH Dept. of Transportatio

DETERMINATION OF ELIGIBILITY

Not eligible for either NR or SR **Integrity:** Partial **Level:** Local

Criteria: ***A:*** No ***B:*** No ***C:*** No ***D:*** No ***E:*** N

STATEMENT OF SIGNIFICANCE:

The DOE Committee agrees that the 1-span concrete slab bridge in Center Harbor built in 1928 does not meet Criterion C, nor does it retain integrity under that criterion. However, more information is needed on the bridge and its 20th century history, particularly associated with automobile travel and tourism in the Lakes Region, and the potential for associations with summer cottage development on Lake Waukewan before eligibility under Criterion A can be determined.
Updated 5/11/16: As requested, more information including 20th century maps of the area were provide on continuations sheets. The DOE Committee agrees that the bridge, which replaced an earlier crossing, is not associated with events important to the broad patterns of development of the area and is not elligible for the National Register under Criterion A.

Period of Significance:
to
☐ Period not applicable

Boundary: bridge including abutments and approaches.

Follow Up:

notify appropriate parties

Comments:

US Army Corps of Engineers®
New England District

Appendix B

Regional General Permits (GPs)
Required Information and Corps Secondary Impacts Checklist

In order for the Corps of Engineers to properly evaluate your application, applicants must submit the following information along with the New Hampshire DES Wetlands Bureau application or permit notification forms. Some projects may require more information. For a more comprehensive checklist, go to www.nae.usace.army.mil/regulatory, "Forms/Publications" and then "Application and Plan Guideline Checklist." Check with the Corps at (978) 318-8832 for project-specific requirements. For your convenience, this Appendix B is also attached to the State of New Hampshire DES Wetlands Bureau application and Permit by Notification forms.

All Projects:

- Corps application form (ENG Form 4345) as appropriate.
- Photographs of wetland/waterway to be impacted.
- Purpose of the project.
- Legible, reproducible black and white (no color) plans no larger than 11"x17" with bar scale. Provide locus map and plan views of the entire property.
- Typical cross-section views of all wetland and waterway fill areas and wetland replication areas.
- In navigable waters, show mean low water (MLW) and mean high water (MHW) elevations. Show the high tide line (HTL) elevations when fill is involved. In other waters, show ordinary high water (OHW) elevation.
- On each plan, show the following for the project:
- Vertical datum and the NAVD 1988 equivalent with the vertical units as U.S. feet. Don't use local datum. In coastal waters this may be mean higher high water (MHHW), mean high water (MHW), mean low water (MLW), mean lower low water (MLLW) or other tidal datum with the vertical units as U.S. feet. MLLW and MHHW are preferred. Provide the correction factor detailing how the vertical datum (e.g., MLLW) was derived using the latest National Tidal Datum Epoch for that area, typically 1983-2001.
- Horizontal state plane coordinates in U.S. survey feet based on the Traverse Mercator Grid system for the State of New Hampshire (Zone 2800) NAD 83.
- Show project limits with existing and proposed conditions.
- Limits of any Federal Navigation Project in the vicinity of the project area and horizontal State Plane Coordinates in U.S. survey feet for the limits of the proposed work closest to the Federal Navigation Project;
- Volume, type, and source of fill material to be discharged into waters and wetlands, including the area(s) (in square feet or acres) of fill in wetlands, below the ordinary high water in inland waters and below the high tide line in coastal waters.
- Delineation of all waterways and wetlands on the project site,:
- Use Federal delineation methods and include Corps wetland delineation data sheets. See GC 2 and www.nero.noaa.gov/hcd for eelgrass survey guidance.
- GP 3, Moorings, contains eelgrass survey requirements for the placement of moorings.
- For activities involving discharges of dredged or fill material into waters of the U.S., include a statement describing how impacts to waters of the U.S. are to be avoided and minimized, and either a statement describing how impacts to waters of the U.S. are to be compensated for (or a conceptual or detailed mitigation plan) or a statement explaining why compensatory mitigation should not be required for the proposed impacts. Please contact the Corps for guidance.

US Army Corps of Engineers ®
New England District

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

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

1. Impaired Waters	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm to determine if there is an impaired water in the vicinity of your work area.*	X	
2. Wetlands	Yes	No
2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?	X	
2.2 Are there proposed impacts to SAS, special wetlands. Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) DataCheck Tool for information about resources located on the property at https://www2.des.state.nh.us/nhb_datacheck/. The book Natural Community Systems of New Hampshire also contains specific information about the natural communities found in NH.	X	
2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage?	X	
2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent to streams where vegetation is strongly influenced by the presence of water. They are often thin lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream banks. They are also called vegetated buffer zones.)		X
2.5 The overall project site is more than 40 acres?		X
2.6 What is the area of the previously filled wetlands?	UNKNOWN	
2.7 What is the area of the proposed fill in wetlands?	158 SF	
2.8 What is the % of previously and proposed fill in wetlands to the overall project site?	N/A	
3. Wildlife	Yes	No
3.1 Has the NHB & USFWS determined that there are known occurrences of rare species, exemplary natural communities, Federal and State threatened and endangered species and habitat, in the vicinity of the proposed project? (All projects require an NHB ID number & a USFWS IPAC determination.) NHB DataCheck Tool: https://www2.des.state.nh.us/nhb_datacheck/ USFWS IPAC website: https://ecos.fws.gov/ipac/location/index	X	

3.2 Would work occur in any area identified as either "Highest Ranked Habitat in N.H." or "Highest Ranked Habitat in Ecological Region"? (These areas are colored magenta and green, respectively, on NH Fish and Game's map, "2010 Highest Ranked Wildlife Habitat by Ecological Condition.") Map information can be found at: • PDF: www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/highest_ranking_habitat.htm. • Data Mapper: www.granit.unh.edu. • GIS: www.granit.unh.edu/data/downloadfreedata/category/databycategory.html.	X	
3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)?		X
3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development?		X
3.5 Are stream crossings designed in accordance with the GC 21?	N / A	
4. Flooding/Floodplain Values	Yes	No
4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?		X
4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage?	N / A	
5. Historic/Archaeological Resources		
For a minimum, minor or major impact project - a copy of the Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review**)** with your DES file number shall be sent to the NH Division of Historical Resources as required on Page 11 GC 8(d) of the GP document**	X	

*Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.
** If your project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law.
`

Photo 1: Looking south on Waukewan Road.

Photo 2: Looking east on Waukewan Road.

Photo 3: Looking southwest on Waukewan Road toward project site.

Photo 4: Looking west at shoulder/private driveway for staging.

Photo 5: Looking north on Waukewan Road toward Project site.


Photo 6: Looking at exposed rebar on underside of deck (NHDOT Photo).

Photo 7: Southern stone abutment leaning (NHDOT Photo).

Photo 8: Crack in stone abutment (NHDOT Photo).

Photo 9: Aerial view looking west at project site (DragonFly Aerials Photo).

Photo 10: Aerial view looking east at project site (DragonFly Aerials Photo).

WETLAND DELINEATION REPORT

FOR THE

WAUKEWAN ROAD BRIDGE REPLACEMENT PROJECT

Center Harbor & New Hampton, NH

View of Lake Waukewan from Waukewan Road bridge

Prepared for the

HEB Engineers

North Conway, NH

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October 23, 2015

Wetland Delineation Completion Report [File 2015-0000]
Waukewan Road
Town of New Hampton & Center Harbor

Background and Site Description:

The NH Department of Transportation intends to replace an existing stone and concrete bridge on the Class II Waukewan Road that crosses the Snake River at its inflow point into Lake Waukewan. This location is on the town line between New Hampton and Center Harbor and is at the northwest edge of Lake Waukewan. The bridge consists of large, cut stone abutments and a +/- 12-inch thick, reinforced concrete bed that is roughly 20 feet wide and spans roughly 30 feet (12 ft. open) across the third order, Tier 3 Snake River.[1]

The Snake River is more of a shallow, emergent to deepwater marsh rather than a river at the location of the bridge. It is beaver mediated, and a large beaver dam spans the width of the Snake River in at least two locations upstream below Winona Lake. An extensive aquatic bed exists on both sides of the primary channel, and the flow between these beds is slow and meandering. The substrate is largely organic muck and peat in the flowage, but is composed of large stones, cobbles and gravel beneath the bridge.

Stream discharge measurements in 2006 on both the Winona Inflow Stream and the Hawkins Pond Outflow Brook suggest that discharge volume beneath the bridge varies from an average of 2.5 – 5.0 cfs during low water to over 25 cfs after 25-year storm events. Based on wrack lines and sediment deposits along the wetland edge upstream of the bridge, it appears that 50-year and even 100-year events (e.g. after Hurricane Irene and Sandy) do not overtop the bridge. Floor elevation of the concrete deck is about five to six feet above the benthos and averages about four feet of clearance at low water.

The 3780-acre watershed above the bridge is largely wooded and undeveloped. There are some residences along Winona Road and around Winona Lake upstream of the bridge, but buildings and other impervious surfaces within the watershed is less than 1% of the total area. With the exception of chlorides, water quality data from the Waukewan Watershed Study (Plymouth State University 2007) indicate good to excellent conditions, as evidenced in the tables below:

[1] The NHD identifies the Snake River as a second order; however, fieldwork in Center Harbor over the past 10 years has demonstrated that the Hawkins Pond outflow stream joins another perennial stream above Winona Lake. The Winona Lake inflow stream is also a second order stream, therefore the Snake River is a third order drainageway at the location of the bridge.

	11 - Snake River Outflow
Subwatershed	I
GPS Coord, (Lat)	43.664727
GPS Coord. (Long)	-71.545329
Cover (%)	0
Cover (Type)	Shrub cover along bank
Width (m)	9.4
Tannin	Yes
Warm/Coldwater	W
Site directions	Sample taken US of Snake River Bridge on Waukewan Road

ID	Sample date	Sampled by	H_2O Temp (C)	DO (mg/L)	A Color	ANC	Sp Cond	Turbidity	EqpH	Total P
11	8/16/2006	MGY	23.42	6.75	23	116.92	63.05	0.24		5
11	10/30/2006	MGY	8.86	12.64	28	107.93	62.67	0.79		7
11	12/11/2006	MGY	1.11		15	192.12	73.85	1.64	7.28	
11	3/15/2007	MGY	frozen							

ID	Sample date	Sampled by	Na (µeq/L)	K (µeq/L)	Mg (µeq/L)	Ca (µeq/L)	F (µeq/L)	Cl (µeq/L)	SO4 (µeq/L)	NO3 (µeq/L)
11	8/16/2006	MGY	336	13.8	48	168	4.0	341	69	0.0
11	10/30/2006	MGY	334	23.4	46	157	3.6	334	77	0.4
11	12/11/2006	MGY	395	17.9	54	183	2.3	386	85	1.4
11	3/15/2007	MGY	frozen							

Table 1. Water quality data from Waukewan Watershed Study (PSU, 2007)

The Volunteer Lakes Assessment Program (VLAP) maintains five water quality sampling stations along the Snake River upstream of the bridge. At least four of these have been in place since 2006, although prior to that time only a single sampling point was located upstream of the bridge (Waukewan Watershed Plan, 2006[2]). Data from the latest report in 2014 indicates comparable results to the PSU study, with moderately elevated levels of conductivity and chlorides but well within drinking water standards for the state. Turbidity and phosphorus continue to be variably low in this mesotrophic water body.

Most wetlands near the bridge entail shallow to deepwater marsh with a scrub-shrub or forested wetland edge. The most common types of wetlands are PEM1/2H, PSS1E, and PFO1/4E (see attached map of wetland cover types). The PUB portion of the Snake River is less than 6.6 feet deep, and has deep layers of muck and peat beneath the water column. The flow and character of the Snake River, as noted above, is more like a lentic water body than a flowing one and hence is mapped as palustrine and not riverine.[3]

Field Delineation Methods

Prior to the initial visit in July, all of the pertinent GIS data was uploaded onto an ArcMap 10.x platform and reviewed. An approximate wetland location map was prepared based on data collected in 2006 for the Waukewan Watershed Project, in 2008 for the Center Harbor Prime Wetlands Project, and in 2013 for the New Hampton Baird Property Assessment. A map field sheet was prepared using the 2010 color infrared aerial photographs available from NH GRANIT. The 2012 data sheets from the Routine On-Site Method were printed and reference works prepared for use in the field. GPS data from the previous project work were uploaded onto a Garmin 12XL hand-held GPS unit.

The first site visit in July was completed in the company of Mr. Chris Fournier from HEB Engineering in North Conway. Site development parameters were discussed and an initial inspection made of the bridge and surrounding wetlands. A second site visit took place on August 2nd in order to check the wetlands mapping classification that had been prepared using remote aerial photograph data. An estimate was also made of the extent of the needed delineation area.

Field delineation took place on September 8th. The requisite data forms were prepared using the Army Corps of Engineers *Wetlands Delineation Manual* and standardized data sheets from Version 2.0 of the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (please see attached). Sample points were taken using a tile spade and 50-m tape, and digital photographs recorded the plots using a Canon SX20 IS digital zoom camera. Once the plot work was completed, wetland boundary flags were hung in the following manner:

Transect A – flags A-1 to A-10 beginning near the NW abutment of the bridge and continuing north and westerly
Transect B – flags B-1 to B-6 in a counter-clockwise direction around a small (+/- 1100 s.f.) forested swamp just north of Transect A

[2] See http://www.meredithnh.org/Joomla/index.php/waukewan-watershed-advisory-committee
[3] The NHD identifies the Snake River channel as an 'artificial path.'

Transect C – flags C-1 to C-10 beginning at the SW bridge abutment and continuing south and west along Waukewan Road
Transect D – flags D-1 to D-22 beginning at the drill hole 23 ft. 114° SE of the SE bridge abutment, and continuing N along the bridge and edge of Lake Waukewan as far as a small culvert and ditch along Waukewan Road

In each case, the wetland boundary flags were hung as far as the red flagging hung by HEB prior to the field survey.

Findings

The wetlands on either side of the Waukewan Road bridge were similar in vegetative cover types but varied somewhat in soil type and hydrologic regime. The Snake River side of the bridge was dominated by aquatic bed vegetation that bordered a fairly shallow, open water channel that meanders slowly down from Winona Lake. The substrate on this side of the bridge was largely organic in nature, with some exposed stones and boulders interspersed between deep muck and peat beds. Only in the vicinity of the bridge were there mineral benthic materials, which were largely a result of the increased velocities through the narrow underpass.

The Lake Waukewan side of the bridge contained both non-persistent emergent and aquatic bed vegetation with a similarly shallow, organic-rich bottom substrate. There appeared to be more muds and silts in this area, although the high water wrack lines contained some coarse debris as well. A narrow border of scrub-shrub vegetation persists along each of the shorelines that approach the bridge, and along the north edge a variable buffer of tree-dominated wetlands occur. On the Snake River side, the latter extends landward nearly 100 feet from the open water. In addition, a small, isolated pocket wetland can be found where an old gravel extraction pit was excavated below the water table. This .03-acre forested wetland contained much shallower surface organic layers than the relatively undisturbed swamp along Snake River.

The current bridge sits above old fill materials that extend at least 50 feet across the former ‘pinch point’ between Lake Waukewan and Snake River. These appear to be stable and are not affected by either upstream flooding or high water wave erosion from the lake. The proposed widening of the bridge will require additional fill materials that will impact the shallow water wetlands on either side of the current bridge. Although these areas appeared suitable for a variety of warmwater fish and shallow, emergent sedges, rushes and grasses, there appeared to be no rare plants or wildlife that would be affected by additional fill. A review of the NH Natural Heritage Bureau records showed historic occurrences of pied-billed grebe in the Snake River, as well as breeding loons. Neither species has been known to breed in these waters for over 25 years, although migratory and feeding activity is likely present from time to time.

Wetland Condition and Potential Impacts of the New Bridge

The wetland condition on both sides of the bridge appears to be good to excellent. Although a formal wetland assessment was not completed, several wetland functions were noted as being high to very high value. The following summarizes these functional values as well as how the bridge construction may impact them.

Ecological Integrity – As noted above, the Snake River watershed has a few scattered residences and limited agricultural activity that has resulted in good water quality. The above-noted VLAP data suggests that the principal residual concern is with slightly elevated levels of chlorides from road salt. Considering the amount of road frontage that borders both the Snake River and Winona Lake, this is not unexpected. Mitigation for this elevated condition in the vicinity of the bridge should be taken into account, especially since Lake Waukewan supplies the town of Meredith with 40% of its drinking water supplies.

Wetland-dependent Wildlife Habitat – the Snake River offers one of the best migratory waterfowl sites in the region. It regularly supports nesting ducks and geese, and is a popular spot for local birding enthusiasts. It was in part for this reason that the abutting property in New Hampton was protected in perpetuity by both New Hampton and Meredith. The Baird property extends from the edge of the bridge and continues westerly and northerly 1500 feet.

Beavers have dammed the Snake River above the bridge and continue to impound the 'river.' While the new bridge will have negligible effects on the generally high wildlife value of the associated wetlands, beavers will likely continue to attempt to block the bridge underpass and will need to be managed to prevent flooding across the road.

Fish and Aquatic Life Habitat - A number of warmwater fish species are present up and down the Snake River, as well as in Lake Waukewan. For this reason, fishermen have been regular users of the bridge, especially in spring and fall when certain coldwater species are moving through the bridge underpass. Aside from the narrow gauge of the current bridge for vehicular traffic, the greatest safety concern appears to be from fishermen, birders, and other pedestrians who use the bridge. Design considerations must take this into account, especially considering the educational and recreational value that these wetland have for the general public.

Scenic Quality – The view across both the Snake River upstream and Lake Waukewan downstream is one of the best in the area. Particularly in the fall this site gets a significant amount of usage by fall foliage photographers. Maintenance of the open view, as well as provisions for safe viewing should also be a part of the new bridge design considerations.

Educational Potential – The VLAP volunteers use the bridge area for regular water quality sampling. A number of other users who canoe or kayak through the bridge and up the Snake River are also educationally inclined. The wetland types in this area are relatively unique, especially considering the variety of cover and substrate types present. Considering that all three of the "social functions" of wetlands – namely, Scenic Quality, Educational Potential, and Wetland-based Recreation, are being utilized extensively in the bridge area, it would be of benefit for the DOT to consider securing permanent easement to continue using and possibly expanding the existing pull-out that is currently on private land. Assistance from a land conservation organization such as the Lakes Region Conservation Trust is also suggested.

Flood Storage – The bridge abutment currently helps desynchronize floodwaters from storm events that affect the Snake River watershed. As noted above, it appears that the current elevation of the roadway has prevented over-top flooding for many decades. Increasing the length and/or height of the bridge span would help alleviate such an event. It is suggested that engineering studies target 100 – 500 year flows when calculating suitable design changes in this regard.

Sediment Trapping – this function is being well-served by the existing wetland configuration near the Waukewan Road bridge. Evidence of this exists in the fact that sediment continues to accumulate on the Waukewan side of the flowage.[4] The bordering vegetated wetlands along the Snake River continue to act as a sediment and debris trap as well, as attested by the depth of organic material and mud on this side of the bridge. Beyond the normal BMP's for sediment and erosion control during construction, it does not appear that the new bridge will impact this function.

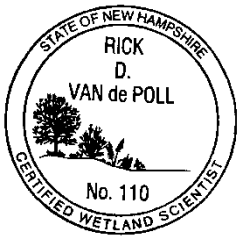
Nutrient Transformation – As noted above, the single greatest nutrient concern in this area is the amount of chlorides that have been slowly increasing in the watershed upstream of the bridge. Reducing the amount of road salt that is spread on Waukewan Road before and after bridge, and posting the roadway for this reduction is suggested as one mitigation measure to take. Otherwise, the dense vegetation present on both sides of the bridge will continue to act as nutrient sinks during the growing season.

Summary

The Snake River and upper Lake Waukewan wetlands contain a number of attributes that should be both protected and enhanced by the construction of a new bridge along Waukewan Road. The relatively good water quality is of great concern to Meredith, who continues to use the lake water for drinking within the downtown area. Suitable erosion and sediment control activities during construction should be able to handle any concerns for this public resource. Expanding the bridge width and length may also enhance other functions that these wetlands currently serve, namely all three of the "social values" associated with these wetlands (i.e. scenic vistas, education and research, and recreation). Securing a long-term user agreement or permanent addition to the right-of-way on the abutting private property next to Camp Road would help realize the enhancement of these values for the general public.

Respectfully submitted,

Rick Van de Poll



Rick Van de Poll, Ph.D., CWS #110

[4] Anecdotal evidence exists for the fact that the current aquatic bed and emergent vegetation in this area did not exist in the 1950's and 1960's.

Selected Photographs of the Proposed Waukewan Bridge Improvement Project


Left: general view of bridge from SW side; Right: view in summer in reverse towards the SW


Left: Plot A-1 in forested swamp edge above Snake River; Right: soil core showing deep organic surface


Left: Plot A-2 in nearby upland strip; Right: soil core showing edge of wet, SPD Roundabout soil


Left: Looking N into small PFO4/1E in old gravel pit; Right: the natural edge to the Snake R. below A-1


Left: Looking SW from end of Transect D along road; Right: culvert and ditch at end of Transect D

Left: view of downstream side of bridge

Right: view upstream from bridge

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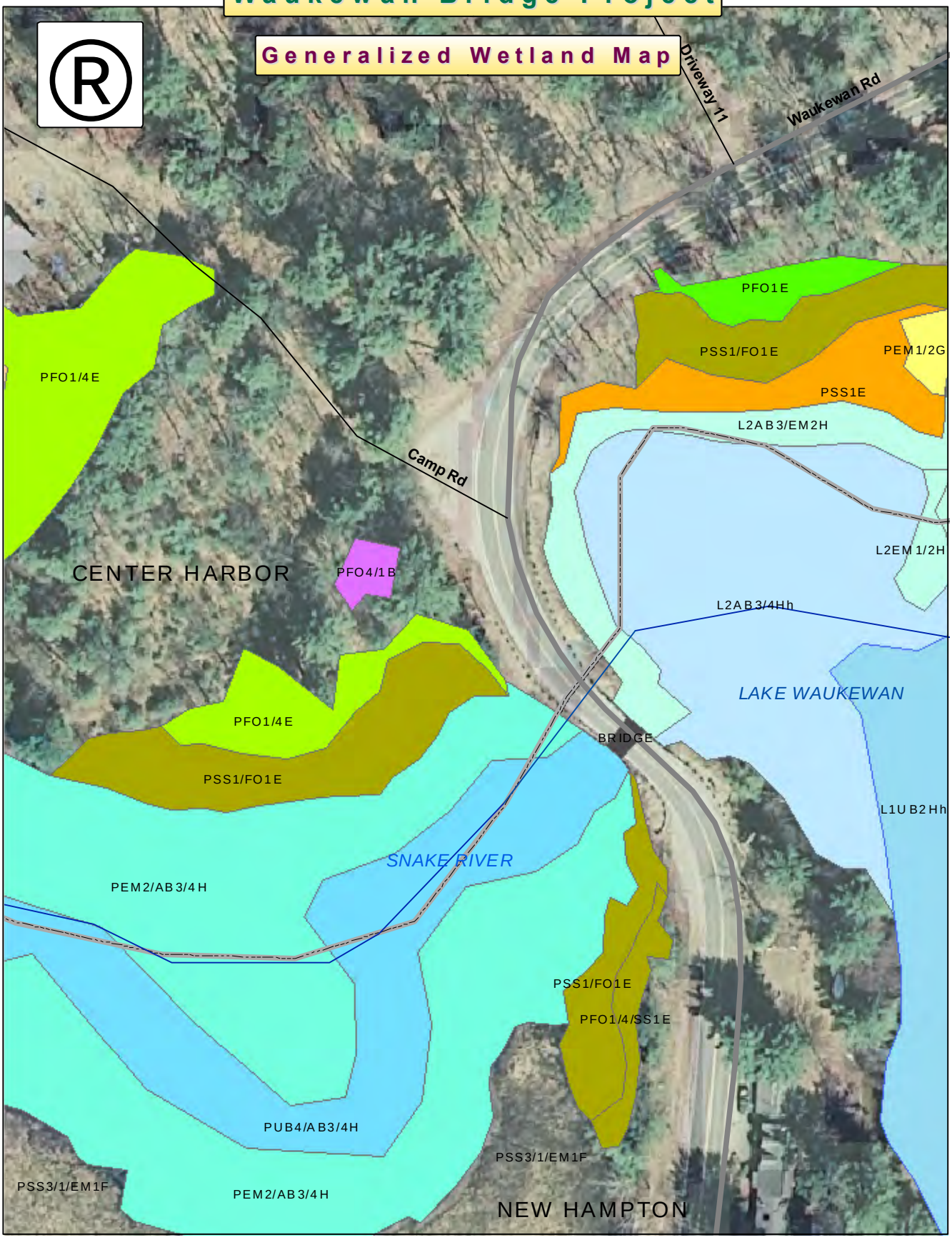
1:1,000

Waukewan Bridge Project

Generalized Wetland Map



200 100 0 200 Feet

50 25 0 50 Meters

Van de Poll / EMC Oct 2015


1:600
Waukewan Bridge Project
Approximate Wetland Flag Locations
®
D-22
D-21
D-19
D-20
D-17
D-16
D-14
D-15
D-13
D-12
D-11
D-10
D-9
D-8
D-7
D-6
D-5
D-4
D-3
D-2
D-1
C-1
C-2
C-3
C-4
C-5
C-6
C-7
C-9
C-8
C-10
B-3
B-2
B-4
B-6
B-1
B-5
A-5
A-4
A-10
A-7
A-6
A-9
A-2
A-1
A-3
A-8
Sampling Points
Camp Rd
Waukewan Rd
CENTER HARBOR
LAKE WAUKEWAN
SNAKE RIVER
NEW HAMPTON
120
60
0
120 Feet
30
15
0
30 Meters
Van de Poll / EMC Oct 2015

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Wonkeewan Bridge City/County: Center Harbor/Belknap Sampling Date: 9-8-15

Applicant/Owner: NH DOT State: NH Sampling Point: A-1

Investigator(s): R. Van de Poll Section, Township, Range:

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 1-5%

Subregion (LRR or MLRA): LRR-R Lat: 43.664844 Long: -71.545658 Datum: NAD 83

Soil Map Unit Name: Medomak NWI classification: PFO1/AE

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology X significantly disturbed? No Are "Normal Circumstances" present? Yes X No ____

Are Vegetation X, Soil X, or Hydrology X naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

All three parameters present in spite of 2-week drought

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- X Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- X Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): 23.5"
Water Table Present?	Yes X	No ____	Depth (inches): 13.0"
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0"

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation to surface even after 2 weeks of no rain in growing season

VEGETATION – Use scientific names of plants. Sampling Point: A-1

Tree Stratum (Plot size: 30' r.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	75	Y	FAC
2. Pinus strobus	35	Y	FACU
3. Quercus rubra	2	N	FACU
4.			
5.			
6.			
7.			
	112	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' r.)			
1. Vaccinium corymbosum	28	Y	FACW
2. Ilex verticillata	24	Y	FACW
3. Acer rubrum	10	N	FAC
4. Cephalanthus occidentalis	7	N	OBL
5. Betula populifolia	5	N	FAC
6. Ilex mucronata	2	N	OBL
7. Lyonia ligustrina	1	N	FACW
	76	= Total Cover	

Herb Stratum (Plot size:)			
1. Carex stricta	65	Y	OBL
2. Ilex verticillata	4	N	FACW
3. Cephalanthus occidentalis	1	N	OBL
4. Maianthemum canadense	1	N	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	71	= Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

2015_09_08 (03)

SOIL

Sampling Point: A-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1.5	10YR 3/3	90					O.M.	Oe
1.5-7	10YR 2/2	100					O.M.	Oa
7-13	10YR 2/1	100					mucky vfsl	A
13-15	10YR 2/2	50					vfsl	A/C
	10YR 5/1	50					vfs	A/C
15-19	10YR 5/1	100	10YR 5/8	2	C	M	vfsl/sil	Bg, somewhat firm
19-25+	GSN	90	10YR 6/6	10	C	M	sil	C Firm

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: densipan

Depth (inches): 19

Hydric Soil Present? Yes X No ___

Remarks:

Version 3 VI Depleted Matrix

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Wankewan Bridge City/County: Center Harbor / Belknap Sampling Date: 9-8-15

Applicant/Owner: NHDOT State: NH Sampling Point: A-2

Investigator(s): R. Vande Poel Section, Township, Range: _____

Landform (hillslope, terrace, etc.): hill slope Local relief (concave, convex, none): convex Slope (%): 5-10

Subregion (LRR or MLRA): LRR-R Lat: 43.664858 Long: -71.515865 Datum: NAD 83

Soil Map Unit Name: Roundabout NWI classification: U edge

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)

Are Vegetation X, Soil _____, or Hydrology X significantly disturbed? No Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation X, Soil X, or Hydrology X naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	If yes, optional Wetland Site ID: _____

Remarks: (Explain alternative procedures here or in a separate report.)

Plot next to old borrow pit that was used for bridge fill over 100 yrs ago. some water table hydrology is affecting lower soil horizons & plant composition in plot

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): > 25"
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 23"

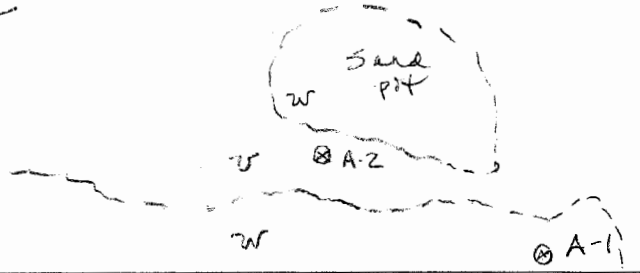
Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

none available

Remarks:

Saturation likely present from adjacent sand pit that was excavated down to firm layer



VEGETATION – Use scientific names of plants.

Sampling Point: A-2

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	55	Y	FACU
2. Acer rubrum	50	Y	FAC
3. Quercus rubra	30	Y	FACU
4.			
5.			
6.			
7.			
	135	= Total Cover	

Sapling/Shrub Stratum (Plot size:)			
1. Vaccinium corymbosum	40	Y	FACW
2. Quercus rubra	15	N	FACU
3. Fagus grandifolia	10	N	FACU
4. Viburnum nudum var. cassinoides	7	N	FACW
5. Ilex monticola	5	N	OBL
6.			
7.			
	77	= Total Cover	

Herb Stratum (Plot size:)			
1. Osmunda cinnamomea	25	Y	FACW
2. Gaultheria procumbens	25	Y	FACU
3. Maianthemum canadense	10	N	FAC
4. Kalmia angustifolia	6	N	FAC
5. Pinus strobus	1	N	FACU
6. Vaccinium corymbosum	1	N	FACW
7. Ilex verticillata	T	N	FACW
8.			
9.			
10.			
11.			
12.			
	68	= Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

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Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

As noted above, adjacent old sandpit elevated VACCOR mats otherwise toe slope edge of wet area

SOIL

Sampling Point: A-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
O-1							Oi	leaf litter
1-3	7.5YR 2/2	100					O.M.	Oe many fine roots
3-5	7.5YR 2.5/1	100					fsl	A " " "
5-7	7.5YR 2.5/1	30					fsl	E/B
	10YR 5/3	60					fsl	E/B
	10YR 4/2	10					fsl	E/B
7-16	7.5YR 3/3	80	2.5YR 3/6	5	C	M	fls	B1
			10YR 5/2	2	D	M		
			7.5YR 2/2	2	C	M		
16-24	2.5Y 5/3	60	5YR 5/8	10	C	M	ls	B2
	10YR 2/2	30						
24+	2.5Y 4/3	100	5YR 5/8	20	C	M	vfls	B3 somewhat firm

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
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- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
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- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- X Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none

Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks:

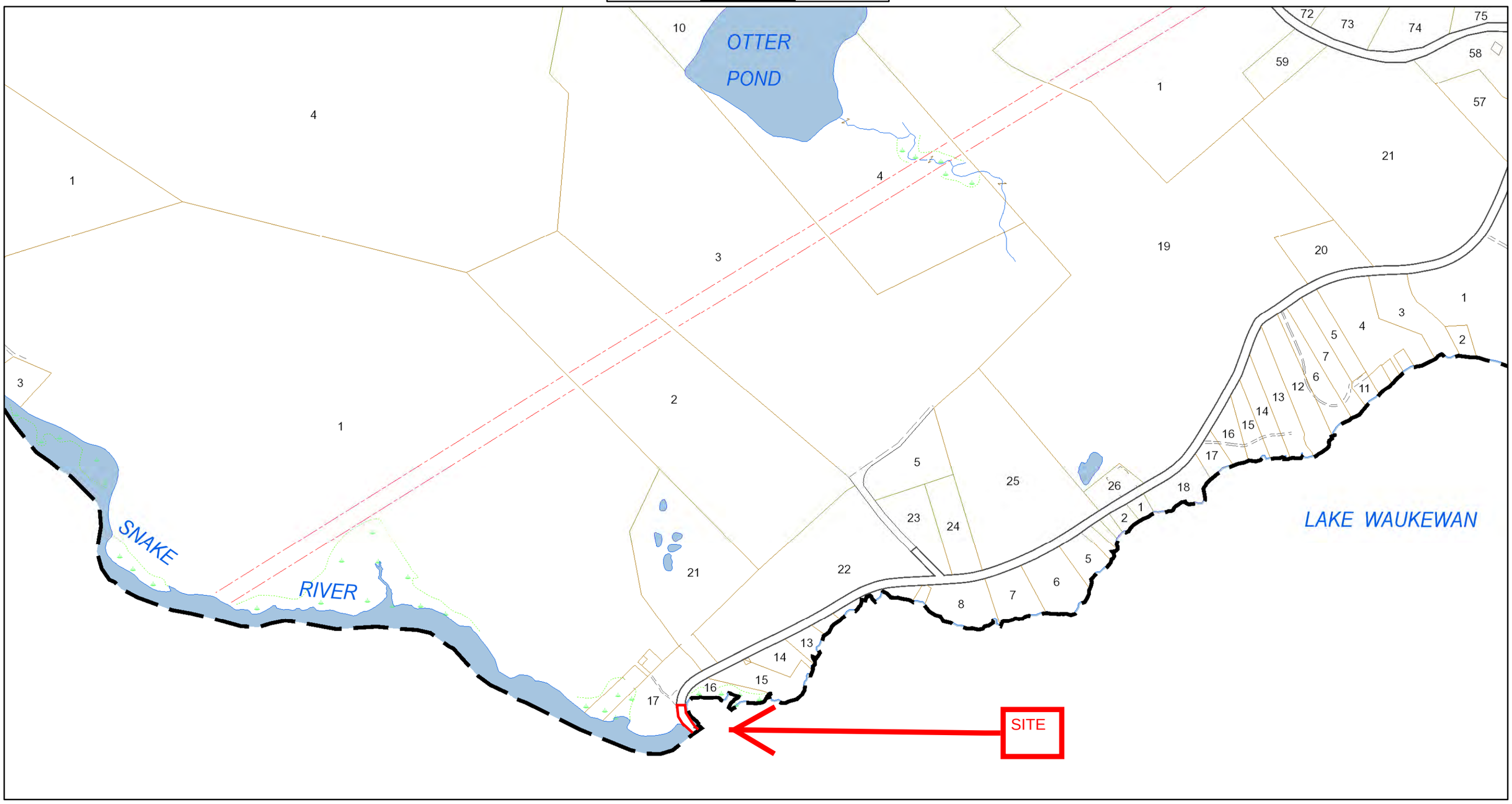
some disturbance from 100+ yr old sand pit adjacent to soil pit

Center Harbor, NH

1 inch = 545 Feet

0 545 1090 1635

January 3, 2020



Data shown on this map is provided for planning and informational purposes only. The municipality and CAI Technologies are not responsible for any use for other purposes or misuse or misrepresentation of this map.

R-8

R-6

U-12

U-11

U-10

Public Service Company Easement

WINONA BROOK

WINONA ROAD

STRAITS ROAD

WAUKEWAN ROAD

SAYWARD BROOK

SEMINOLE AVENUE (PVT)

CEDAR LANE (PVT)

HATCH CORNER ROAD

Boston & Maine Railroad

L/W

1 73.24 Ac
1A 12.6 Ac
1B 5.12 Ac
1C 19.26 Ac
1E 10.0 Ac
1F 10.00 Ac
2 2.5 Ac
3 3.1 Ac
3A 7.69 Ac
3B 9.10 Ac
3C 29.91 Ac
3D 16.12 Ac
3E 12.42 Ac
3F 2.00 Ac
4 5.010 Ac
4A 5.010 Ac
4B 5.020 Ac
4C 5.012 Ac
4D 8.414 Ac
5 4.20 Ac
6 10.64 Ac
6A 8.00 Ac
7 20.51 Ac
8 1.2 Ac
9 1.6 Ac
10 13 Ac
11 1.9 Ac
12 2.3 Ac
13 2.6 Ac
14 2.3 Ac
15
16
17
18 19.5 Ac
19 7.52 Ac
20 7.3 Ac
21 3.21 Ac
21A 1.75Ac
22 34 Ac
22A 28 Ac
23
24
25
26
27
28 5.56 Ac
29 5.14 Ac
30 4.8 Ac
31 5.08 Ac
31A 1.66 Ac
32 1.92 Ac
32A 1.92 Ac
32B 2.39 Ac
33 13 Ac
34 8.0 Ac
35 1.0 Ac
35A
35B 0.69 Ac
35C 1.0 Ac
35D 1.0 Ac
36 0.85 Ac
37
38 23.111 Ac
38A 5.38 Ac
38B 18.688 Ac
39 20.4 Ac
40 6.93 Ac
41 14.887 Ac
41A 33.012 Ac
42 2.35 Ac
43 2.7 Ac
44 5.4 Ac
45
46
47 6.36 Ac
47A 5.09 Ac
48 3.1 Ac

SITE

LAKE WAUKEWAN

CENTER HARBOR

MEREDITH

CHAPMAN ISLAND

NO PARCEL 1D,23,24,25,26,27,35A,37,38B,38C

FOR ASSESSMENT PURPOSES ONLY
NOT FOR PROPERTY CONVEYANCES

PREPARED BY PHOTOGRAMMETRIC METHODS BY
JOHN E. O'DONNELL & ASSOCIATES
AUBURN, MAINE
1977

REVISED & REPRINTED BY
CAI Technologies
Precision Mapping. Geospatial Solutions
11 PLEASANT STREET, LITTLETON, NH 03561
800.322.4540 - WWW.CAI-TECH.COM

PROPERTY MAP

NEW HAMPTON

NEW HAMPSHIRE

LEGEND
ADJACENT SHEET NO. 12
COMMON OWNERSHIP OR
DEVELOPMENT LOT NO. (2)
SCALED DIMENSION ±
CEMETERY †

SCALE IN FEET
0 400 800

R-7

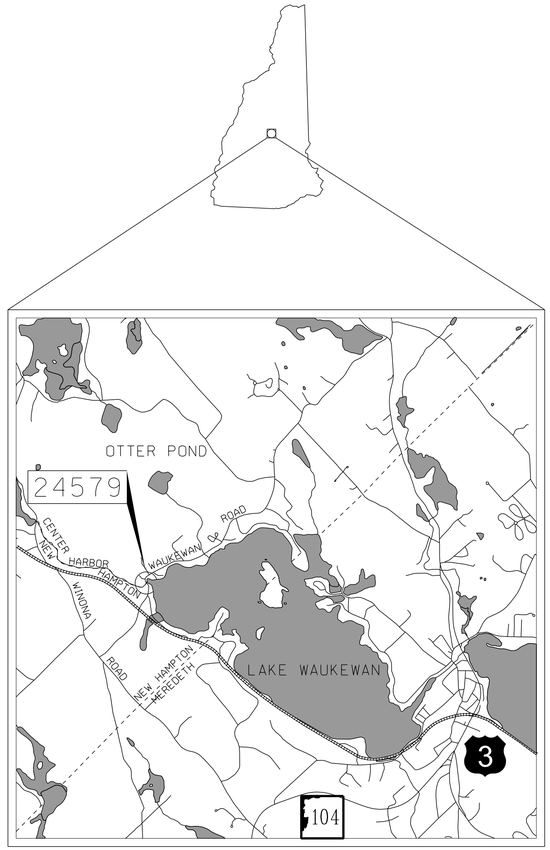
STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION

WETLAND PLANS

X-A002(923)
N.H. PROJECT NO. 24579

WAUKEWAN ROAD BRIDGE OVER LAKE WAUKEWAN INLET
BRIDGE REPLACEMENT

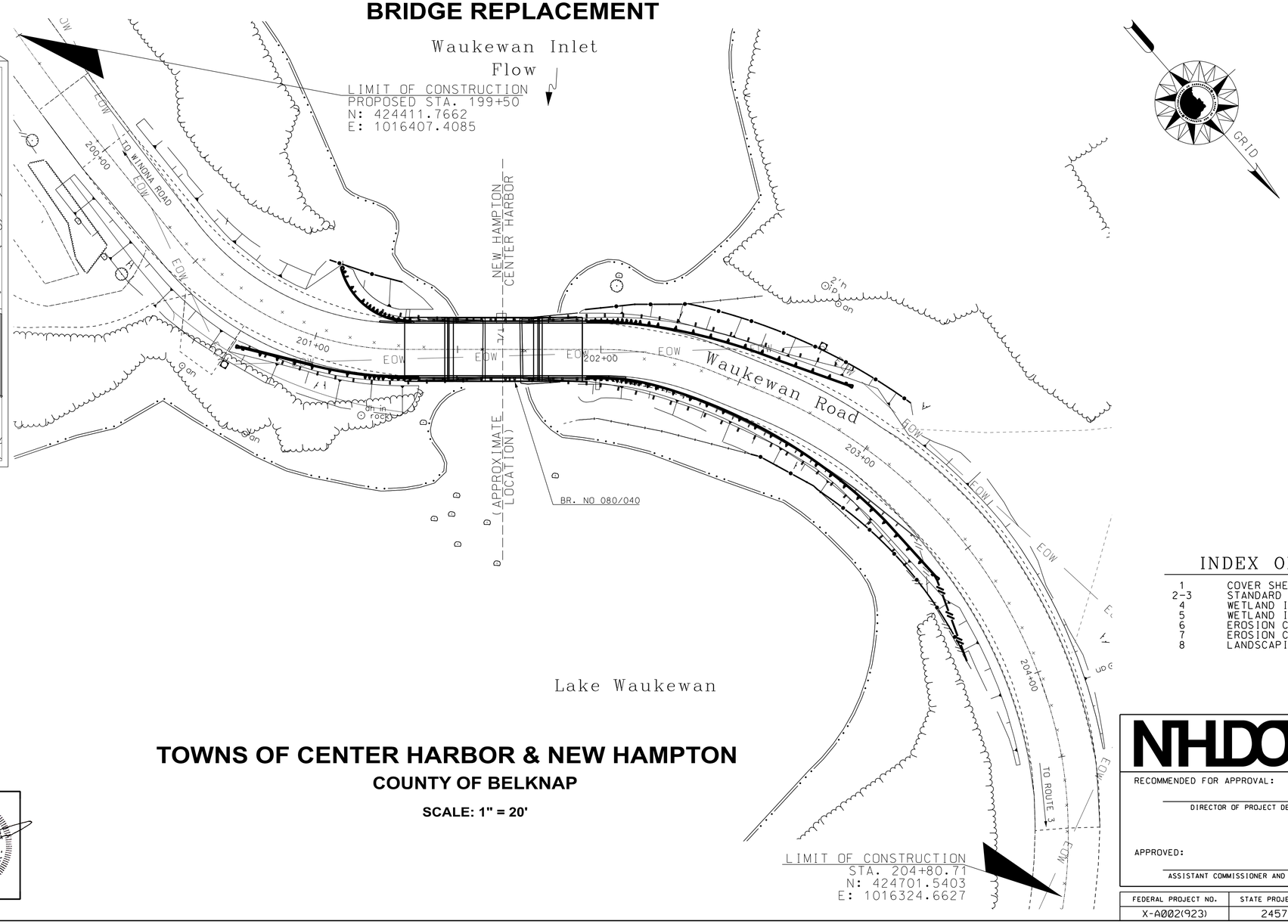
DESIGN DATA	
AVERAGE DAILY TRAFFIC 2017	438
AVERAGE DAILY TRAFFIC 2039	648
PERCENT OF TRUCKS	10%
DESIGN SPEED	20 M.P.H.
LENGTH OF PROJECT	0.101 MILES



LOCATION MAP

2 1 0 2 4 mi.

GRAPHIC SCALE



INDEX OF SHEETS

TOWNS OF CENTER HARBOR & NEW HAMPTON
COUNTY OF BELKNAP

SCALE: 1" = 20'

DRAWN BY	EVS	DATE	10/20/2020
CHECKED BY	CRF	DATE	10/20/2020

HEB Engineers
CIVIL • STRUCTURAL • SURVEY

HEB Engineers, Inc.
Post Office Box 440
2605 White Mountain Hwy.
North Conway, NH 03860
www.hebengineers.com
Office (603) 356-6936
Fax (603) 356-7715

STATE OF NEW HAMPSHIRE
CHRISTOPHER R. FOURNIER
No. 12651
LICENSED
PROFESSIONAL ENGINEER

NHDOT THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION

RECOMMENDED FOR APPROVAL:

DIRECTOR OF PROJECT DEVELOPMENT — DATE

APPROVED:

ASSISTANT COMMISSIONER AND CHIEF ENGINEER — DATE

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
X-A002(923)	24579	1	8

GENERAL

EDGE OF PAVEMENT — PROPOSED ROADWAY
TRAVELED WAY — existing roadway — (pavement removed outside slope lines)

DRIVEWAYS — (label surface type)

BUILDINGS — (building to be removed)
(label house or type of building)

FOUNDATION — (label type)

LEACH FIELD — leach field

BRIDGE CROSSINGS — STREAM — OVERPASS

STEPS AND WALK — (label type)

INTERMITTENT WATER COURSE

SHORE LINE — river/stream — pond — (label name of water body)

POTENTIAL WET AREA SYMBOL

BRUSH OR WOODS LINE

TREES (PLANS) — (deciduous) (coniferous) (stump)

TREE OR STUMP (CROSS-SECTIONS) — (show station, circumference in feet & type)

HEDGE — (label type)

MONITORING WELL — mon W

WELL — W

FLAG POLE — fp

ORIGINAL GROUND (TYPICALS)

ROCK OUTCROP

ROCK LINE (TYPICALS & SECTIONS ONLY)

GUARDRAIL (label type) — existing — PROPOSED — bgr — cgr

JERSEY BARRIER

CURB (LABEL TYPE)

STONE WALL

RETAINING WALL (LABEL TYPE) — (points toward retained ground)

FENCE (LABEL TYPE)

SIGNS — (single post) — (double post)

GAS PUMP — gp

FUEL TANK (ABOVE GROUND) — ft (label size & type)

STORAGE TANK FILLER CAP — fc

SEPTIC TANK — S

GRAVE — gr

MAILBOX — mb

VENT PIPE — vp

SATELLITE DISH ANTENNA — da

PHONE — ph

GROUND LIGHT/LAMP POST — gl — lp

BORING LOCATION — B

TEST PIT — TP

INTERSTATE NUMBERED HIGHWAY — 293

UNITED STATES NUMBERED HIGHWAY — 3

STATE NUMBERED HIGHWAY — 102

SHORELAND - WETLAND

WETLAND DESIGNATION AND TYPE — 2 PUB2E

DELINEATED WETLAND — DW
ORDINARY HIGH WATER — OHW
TOP OF BANK — TOB
TOP OF BANK & ORDINARY HIGH WATER — TOBOHW
NORMAL HIGH WATER — NHW
WIDTH AT BANK FULL — WBF
PRIME WETLAND — PWET
PRIME WETLAND 100' BUFFER — PWET100
NON-JURISDICTIONAL DRAINAGE AREA — NJDA
COWARDIN DISTINCTION LINE — CDL
TIDAL BUFFER ZONE — TBZ
DEVELOPED TIDAL BUFFER ZONE — DTBZ
HIGHEST OBSERVABLE TIDE LINE — HOTL
MEAN HIGH WATER — MHW
MEAN LOW WATER — MLW
VERNAL POOL — VP
SPECIAL AQUATIC SITE — SAS
REFERENCE LINE — REF
WATER FRONT BUFFER — WB50
NATURAL WOODLAND BUFFER — NWB150
PROTECTED SHORELAND — PS250
INVASIVE SPECIES LABEL — I.S. I — I.S. II
INVASIVE SPECIES — INV

FLOODPLAIN / FLOODWAY

500 YEAR FLOODPLAIN BOUNDARY — FP500
100 YEAR FLOODPLAIN BOUNDARY — FP100
FLOODWAY — FW

ENGINEERING

CONSTRUCTION BASELINE — 30 — 31 — 32

PC. PT. POT (ON CONST BASELINE)

PI (IN CONSTRUCTION BASELINES)

INTERSECTION OR EQUATION OF TWO LINES

ORIGINAL GROUND LINE (PROFILES AND CROSS-SECTIONS)

PROFILE GRADE LINE (PROFILES AND CROSS-SECTIONS)

CLEARING LINE — SLOPE LINE

SLOPE LINE (FILL)

SLOPE LINE (CUT)

PROFILES AND CROSS SECTIONS:
ORIGINAL GROUND ELEVATION (LEFT) — 72.5
FINISHED GRADE ELEVATION (RIGHT) — 79.14

SHEET 1 OF 2

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

STANDARD SYMBOLS

REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
11-21-2014	24579Symbol1_2	24579	2	8

DRAINAGE

MANHOLE

CATCH BASIN

DROP INLET

(existing) (PROPOSED)

DRAINAGE PIPE (existing) (label size & type)

DRAINAGE PIPE (PROPOSED)

UNDERDRAIN (existing) W/ FLUSHING BASIN

UNDERDRAIN (PROPOSED) W/ FLUSHING BASIN

show direction of flow (label size & type)

HEADER (existing & PROPOSED) (with stone outlet protection)

END SECTION (existing & PROPOSED) METAL or PLASTIC, RCP

OPEN DITCH (PROPOSED)

EROSION CONTROL/ STONE SLOPE PROTECTION

BOUNDARIES / RIGHT-OF-WAY

RIGHT-OF-WAY LINE (label type)

RR RIGHT-OF-WAY LINE

PROPERTY LINE

PROPERTY LINE (COMMON OWNER)

TOWN LINE BOW / CONCORD

COUNTY LINE COOS / GRAFTON

STATE LINE MAINE / NEW HAMPSHIRE

NATIONAL FOREST

CONSERVATION LAND

BENCH MARK / SURVEY DISK

BOUND (PROPOSED)

STATE LINE/ TOWN LINE MONUMENT S/L T/L

NHDOT PROJECT MARKER

IRON PIPE OR PIN

DRILL HOLE IN ROCK

TAX MAP AND LOT NUMBER 156 / 14, 1642/341, 6.80 Ac.±

PROPERTY PARCEL NUMBER 12

HISTORIC PROPERTY

UTILITIES

existing PROPOSED

TELEPHONE POLE

POWER POLE

JOINT OCCUPANCY

MISCELLANEOUS/UNKNOWN POLE

GUY POLE OR PUSH BRACE

(plot point at face not center of symbol)

LIGHT POLE

LIGHT ON POWER POLE

LIGHT ON JOINT POLE

POLE STATUS:
REMOVE, LEAVE, PROPOSED, OR TEMPORARY
AS APPLICABLE e.g.:

R L P+04 25.0' T+04 25.0'

RAILROAD (label ownership)

RAILROAD SIGN

RAILROAD SIGNAL

UTILITY JUNCTION BOX jb JB

OVERHEAD WIRE OW (label type) OW

UNDERGROUND UTILITIES

WATER (on existing lines label size, type and note if abandoned) W PW

SEWER S PS

TELEPHONE T PT

ELECTRIC E PE

GAS G PG

LIGHTING L PL

INTELLIGENT TRANSPORTATION SYSTEM ITS

FIBER OPTIC FO PFO

WATER SHUT OFF

GAS SHUT OFF

HYDRANT

MANHOLES

SEWER MHS

TELEPHONE MHT

ELECTRICAL MHE

GAS MHG

UNKNOWN

TRAFFIC SIGNALS / ITS

existing PROPOSED

MAST ARM (existing) 30' MA (NOTE ANGLE FROM ℄)

OPTICOM RECEIVER

OPTICOM STROBE

TRAFFIC SIGNAL

PEDESTAL WITH PEDESTRIAN SIGNAL HEADS AND PUSH BUTTON UNIT

SIGNAL CONDUIT C C C PC PC PC

CONTROLLER CABINET cc CC

METER PEDESTAL mp MP

PULL BOX pb PB

LOOP DETECTOR (QUADRUPOLE) (label size)

LOOP DETECTOR (RECTANGULAR) (label size)

CAMERA POLE (CCTV)

FIBER OPTIC DELINEATOR fod FOD

FIBER OPTIC SPLICE VAULT SVF

ITS EQUIPMENT CABINET its ITS

VARIABLE SPEED LIMIT SIGN

DYNAMIC MESSAGE SIGN

ROAD AND WEATHER INFO SYSTEM

CONSTRUCTION NOTES

CURB MARK NUMBER - BITUMINOUS B-1

CURB MARK NUMBER - GRANITE G-1

CLEARING AND GRUBBING AREA A

DRAINAGE NOTE 1

EROSION CONTROL NOTE A

FENCING NOTE A

GUARDRAIL NOTE 1

ITS NOTE 1

LIGHTING NOTE A

TRAFFIC SIGNAL NOTE 1

SHEET 2 OF 2

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ◦ BUREAU OF HIGHWAY DESIGN

STANDARD SYMBOLS

REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
9-1-2016	24579Symbol1_2	24579	3	8

WETLAND CLASSIFICATION CODES		
PF01E	1	PALUSTRINE, FORESTED, BROAD-LEAVED DECIDUOUS, SEASONALLY FLOODED/SATURATED
PSS1/F01E	2	PALUSTRINE, SCRUB-SHRUB, BROAD-LEAVED DECIDUOUS/FORESTED, BROAD LEAVED DECISUOUS, SEASONALLY FLOODED/SATURATED
PSS1E	3	PALUSTRINE, SCRUB-SHRUB, BROAD-LEAVED DECIDUOUS, SEASONALLY FLOODED/SATURATED
L2AB3/EM2H	4	LACUSTRINE, LITTORAL, AQUATIC BED, ROOTED VASCULAR/EMERGENT, NONPERSISTENT, PERMANENTLY FLOODED
L2AB3/4Hh	5	LACUSTRINE, LITTORAL, AQUATIC BED, ROOTED VASCULAR/FLOATING VASCULAR, PERMANENTLY FLOODED, DIKED/IMPOUNDED
L1UB2Hh	6	LACUSTRINE, LIMNETIC, UNCONSOLIDATED BOTTOM, SAND, PERMANENTLY FLOODED, DIKED/IMPOUNDED
PF01/4E	7	PALUSTRINE, FORESTED, BROAD-LEAVED DECIDUOUS, NEEDLE-LEAVED EVERGREEN, SEASONALLY FLOODED/SATURATED
PF04/1B	8	PAUSTRINE, FORESTED, NEEDLE-LEAVED EVERGREEN/BROAD-LEAVED DECIDUOUS, SATURATED
PEM2/AB3/4H	9	PALUSTRINE, EMERGENT, NONPERSISTENT/AQUATIC BED, ROOTED VASCULAR/ FLOATING VASCULAR, PERMANENTLY FLOODED
PUB4/AB3/4H	10	PALUSTRINE, UNCONSOLIDATED BOTTOM, ORGANIC/AQUATIC BED ROOTED VASCULAR/FLOATING VASCULAR, PERMANENTLY FLOODED
PF01/4/SS1E	11	PALUSTRINE, FORESTED, BROAD-LEAVED DECIDUOUS/NEEDLE-LEAVED EVERGREEN/ SCRUB-SHRUB, BROAD-LEAVED DECIDUOUS, SEASONALLY FLOODED/SATURATED

LEGEND

TYPE OF WETLAND IMPACT	SHADING/ HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	
TEMPORARY IMPACTS	

- # — WETLAND DESIGNATION NUMBER
- # — WETLAND IMPACT LOCATION
- # — WETLAND MITIGATION AREA
- MITIGATION

WETLAND IMPACT SUMMARY

WETLAND NUMBER	WETLAND CLASS-IFICATION	LOCATION	AREA IMPACTS						LINEAR STREAM IMPACTS FOR MITIGATION		
			PERMANENT				TEMPORARY		PERMANENT		
			N.H.W.B. (NON-WETLAND)		N.H.W.B. & A.C.O.E. (WETLAND)				BANK LEFT	BANK RIGHT	CHANNEL
			SF	LF	SF	LF	SF	LF	LF	LF	LF
2	PSS1/F01E	A			105		79				
4	L2AB3/EM2H	B					441	10			
5	L2AB3/4Hh	C			53	8	145	20			
9	PEM2/AB3/4H	D					211	23			
10	PUB4/AB3/4H	E					507	14			
		TOTAL	0 SF	0 LF	158 SF	8 LF	1383 SF	67 LF	0 LF	0 LF	0 LF

PERMANENT IMPACTS: 158 SF
TEMPORARY IMPACTS: 1383 SF
PRIME WETLAND BUFFER IMPACTS: 25,120 SF

TOTAL IMPACTS: 26,661 SF

REVISIONS AFTER PROPOSAL

NUMBER	DESCRIPTION	STATION	DATE

SDR PROCESSED NHDOT DATE
NEW DESIGN EVS DATE 6/30/2020
SHEET CHECKED CRF DATE 6/30/2020
AS BUILT DETAILS DATE

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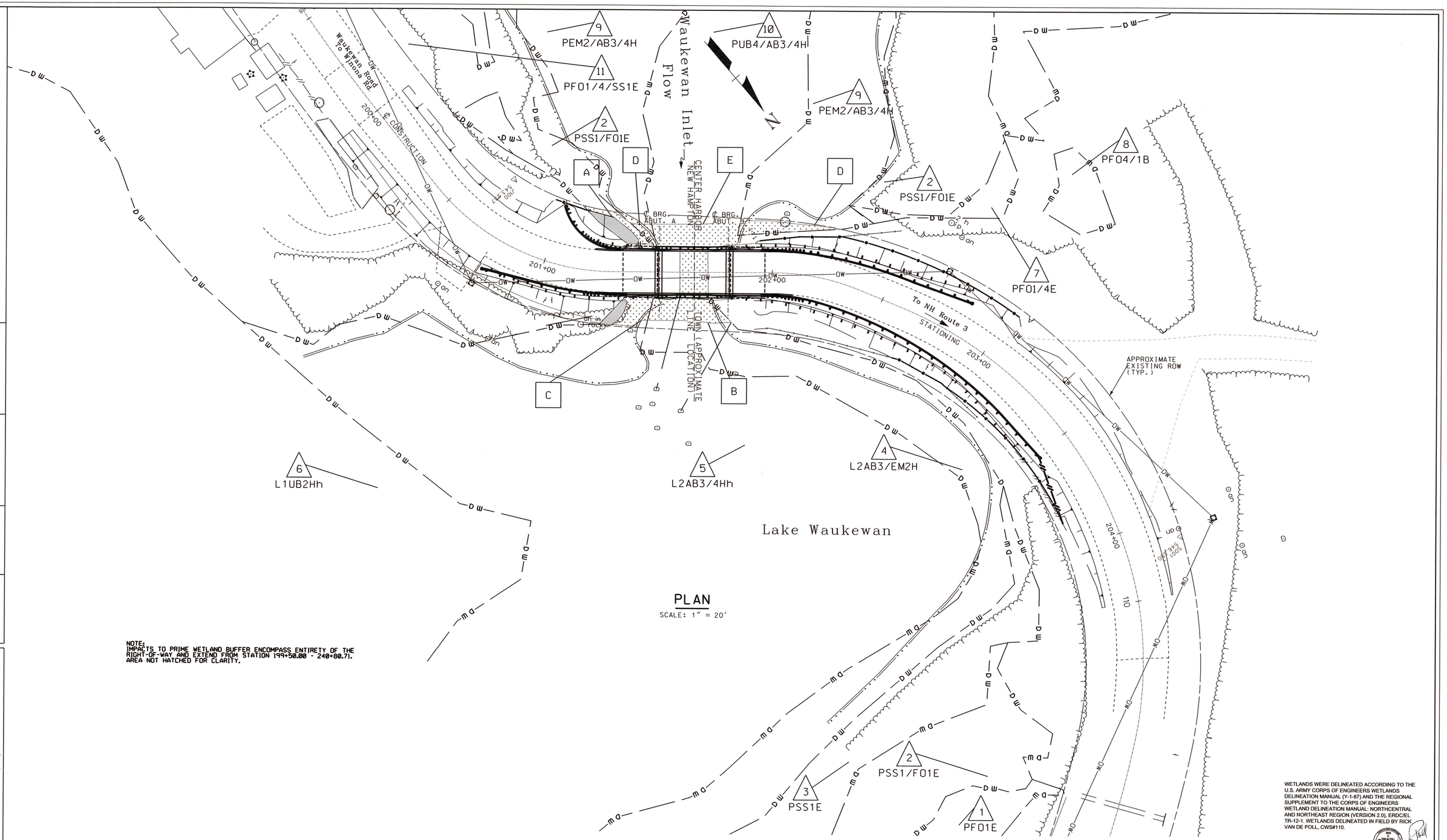
STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION ◦ BUREAU OF HIGHWAY DESIGN

WETLAND IMPACT SUMMARY

SHEET SCALE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
N/A	24579WetPlans	24579	4	8



PLAN

SCALE: 1" = 20'

NOTE:
IMPACTS TO PRIME WETLAND BUFFER ENCOMPASS ENTIRETY OF THE RIGHT-OF-WAY AND EXTEND FROM STATION 199+50.00 - 240+80.71. AREA NOT HATCHED FOR CLARITY.

WETLANDS WERE DELINEATED ACCORDING TO THE U.S. ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL (Y-1-87) AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION (VERSION 2.0), ERDC/EL TR-12-1. WETLANDS DELINEATED IN FIELD BY RICK VAN DE POLL, CWS#110.

REVISIONS AFTER PROPOSAL

NUMBER	DESCRIPTION	STATION	STATION	DATE

SDR PROCESSED	NHDOT	DATE
NEW DESIGN	EVS	DATE 6/18/2020
SHEET CHECKED	CRF	DATE 6/18/2020
AS BUILT DETAILS		DATE

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STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

WETLAND IMPACT PLAN

SHEET SCALE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1" = 20'	24579WetPlans	24579	5	8

EROSION CONTROL STRATEGIES

1. ENVIRONMENTAL COMMITMENTS:
   - 1.1. THESE GUIDELINES DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH ANY CONTRACT PROVISIONS, OR APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.
   - 1.2. THIS PROJECT WILL BE SUBJECT TO THE US EPA'S NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER CONSTRUCTION GENERAL PERMIT AS ADMINISTERED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA). THIS PROJECT IS SUBJECT TO REQUIREMENTS IN THE MOST RECENT CONSTRUCTION GENERAL PERMIT (CGP).
   - 1.3. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE NHDES WETLAND PERMIT, THE US ARMY CORPS OF ENGINEERS PERMIT, WATER QUALITY CERTIFICATION AND THE SPECIAL ATTENTION ITEMS INCLUDED IN THE CONTRACT DOCUMENTS.
   - 1.4. ALL STORM WATER, EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION (DECEMBER 2008) (BMP MANUAL) AVAILABLE FROM THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES (NHDES).
   - 1.5. THE CONTRACTOR SHALL COMPLY WITH RSA 485-A:17, AND ALL, PUBLISHED NHDES ALTERATION OF TERRAIN ENV-WQ 1500 REQUIREMENTS (HTTP://DES.NH.GOV/ORGANIZATION/COMMISSIONER/LEGAL/RULES/INDEX.HTM)
   - 1.6. THE CONTRACTOR IS DIRECTED TO REVIEW AND COMPLY WITH SECTION 107.1 OF THE CONTRACT AS IT REFERS TO SPILLAGE, AND ALSO WITH REGARDS TO EROSION, POLLUTION, AND TURBIDITY PRECAUTIONS.

2. STANDARD EROSION CONTROL SEQUENCING APPLICABLE TO ALL CONSTRUCTION PROJECTS:
   - 2.1. PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH DISTURBING ACTIVITIES. PERIMETER CONTROLS AND STABILIZED CONSTRUCTION EXITS SHALL BE INSTALLED AS SHOWN IN THE BMP MANUAL AND AS DIRECTED BY THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) PREPARER.
   - 2.2. EROSION, SEDIMENTATION CONTROL MEASURES AND INFILTRATION BASINS SHALL BE CLEANED, REPLACED AND AUGMENTED AS NECESSARY TO PREVENT SEDIMENTATION BEYOND PROJECT LIMITS THROUGHOUT THE PROJECT DURATION.
   - 2.3. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT AND SECTION 645 OF THE NHDOT SPECIFICATIONS FOR ROAD AND BRIDGES CONSTRUCTION.
   - 2.4. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
     - (A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
     - (B) A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
     - (C) A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP-RAP HAS BEEN INSTALLED;
     - (D) TEMPORARY SLOPE STABILIZATION CONFORMING TO TABLE 1 HAS BEEN PROPERLY INSTALLED
   - 2.5. ALL STOCKPILES SHALL BE CONTAINED WITH A PERIMETER CONTROL. IF THE STOCKPILE IS TO REMAIN UNDISTURBED FOR MORE THAN 14 DAYS, MULCHING WILL BE REQUIRED.
   - 2.6. A WATER TRUCK SHALL BE AVAILABLE TO CONTROL EXCESSIVE DUST AT THE DIRECTION OF THE CONTRACT ADMINISTRATOR.
   - 2.7. TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL REMAIN UNTIL THE AREA HAS BEEN PERMANENTLY STABILIZED.
   - 2.8. CONSTRUCTION PERFORMED ANY TIME BETWEEN NOVEMBER 30" AND MAY 1" OF ANY YEAR SHALL BE CONSIDERED WINTER CONSTRUCTION AND SHALL CONFORM TO THE FOLLOWING REQUIREMENTS.
     - (A) ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15", OR WHICH ARE DISTURBED AFTER OCTOBER 15", SHALL BE STABILIZED IN ACCORDANCE WITH TABLE 1.
     - (B) ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15", OR WHICH ARE DISTURBED AFTER OCTOBER 15", SHALL BE STABILIZED TEMPORARILY WITH STONE OR IN ACCORDANCE WITH TABLE 1.
     - (C) AFTER NOVEMBER 30" INCOMPLETE ROAD SURFACES, WHERE WORK HAS STOPPED FOR THE SEASON, SHALL BE PROTECTED IN ACCORDANCE WITH TABLE 1.
     - (D) WINTER EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT NO MORE THAN 1 ACRE OF THE PROJECT IS WITHOUT STABILIZATION AT ONE TIME, UNLESS A WINTER CONSTRUCTION PLAN HAS BEEN APPROVED BY NHDOT THAT MEETS THE REQUIREMENTS OF ENV-WQ 1505.02 AND ENV-WQ 1505.05.
     - (E) A SWPPP AMENDMENT SHALL BE SUBMITTED TO THE DEPARTMENT, FOR APPROVAL, ADDRESSING COLD WEATHER STABILIZATION (ENV-WQ 1505.05) AND INCLUDING THE REQUIREMENTS OF NO LESS THAN 30 DAYS PRIOR TO THE COMMENCEMENT OF WORK SCHEDULED AFTER NOVEMBER 30".

GENERAL CONSTRUCTION PLANNING AND SELECTION OF STRATEGIES TO CONTROL EROSION AND SEDIMENT ON HIGHWAY CONSTRUCTION PROJECTS

3. PLAN ACTIVITIES TO ACCOUNT FOR SENSITIVE SITE CONDITIONS:
   - 3.1. CLEARLY FLAG AREAS TO BE PROTECTED IN THE FIELD AND PROVIDE CONSTRUCTION BARRIERS TO PREVENT TRAFFICKING OUTSIDE OF WORK AREAS.
   - 3.2. CONSTRUCTION SHALL BE SEQUENCED TO LIMIT THE DURATION AND AREA OF EXPOSED SOILS.
   - 3.3. PROTECT AND MAXIMIZE EXISTING NATIVE VEGETATION AND NATURAL FOREST BUFFERS BETWEEN CONSTRUCTION ACTIVITY AND SENSITIVE AREAS.
   - 3.4. WHEN WORK IS PERFORMED IN AND NEAR WATER COURSES, STREAM FLOW DIVERSION METHODS SHALL BE IMPLEMENTED PRIOR TO ANY EXCAVATION OR FILLING.
   - 3.5. WHEN WORK IS PERFORMED WITHIN 50 FEET OF SURFACE WATERS (WETLAND, OPEN WATER OR FLOWING WATER), PERIMETER CONTROL SHALL BE ENHANCED CONSISTENT WITH SECTION 2.1.2.1. OF THE 2012 NPDES CONSTRUCTION GENERAL PERMIT.

4. MINIMIZE THE AMOUNT OF EXPOSED SOIL:
   - 4.1. CONSTRUCTION SHALL BE SEQUENCED TO LIMIT THE DURATION AND AREA OF EXPOSED SOILS. MINIMIZE THE AREA OF EXPOSED SOIL AT ANY ONE TIME. PHASING SHALL BE USED TO REDUCE THE AMOUNT AND DURATION OF SOIL EXPOSED TO THE ELEMENTS AND VEHICLE TRACKING.
   - 4.2. UTILIZE TEMPORARY MULCHING OR PROVIDE ALTERNATE TEMPORARY STABILIZATION ON EXPOSED SOILS IN ACCORDANCE WITH TABLE 1.
   - 4.3. THE MAXIMUM AMOUNT OF DISTURBED EARTH SHALL NOT EXCEED A TOTAL OF 5 ACRES FROM MAY 1" THROUGH NOVEMBER 30", OR EXCEED ONE ACRE DURING WINTER MONTHS, UNLESS THE CONTRACTOR DEMONSTRATES TO THE DEPARTMENT THAT THE ADDITIONAL AREA OF DISTURBANCE IS NECESSARY TO MEET THE CONTRACTORS CRITICAL PATH METHOD SCHEDULE (CPM), AND THE CONTRACTOR HAS ADEQUATE RESOURCES AVAILABLE TO ENSURE THAT ENVIRONMENTAL COMMITMENTS WILL BE MET.

5. CONTROL STORMWATER FLOWING ONTO AND THROUGH THE PROJECT:
   - 5.1. DIVERT OFF SITE RUNOFF OR CLEAN WATER AWAY FROM THE CONSTRUCTION ACTIVITY TO REDUCE THE VOLUME THAT NEEDS TO BE TREATED ON SITE.
   - 5.2. DIVERT STORM RUNOFF FROM UPSLOPE DRAINAGE AREAS AWAY FROM DISTURBED AREAS, SLOPES, AND AROUND ACTIVE WORK AREAS AND TO A STABILIZED OUTLET LOCATION.
   - 5.3. CONSTRUCT IMPERMEABLE BARRIERS AS NECESSARY TO COLLECT OR DIVERT CONCENTRATED FLOWS FROM WORK OR DISTURBED AREAS.
   - 5.4. STABILIZE, TO APPROPRIATE ANTICIPATED VELOCITIES, CONVEYANCE CHANNELS OR PUMPING SYSTEMS NEEDED TO CONVEY CONSTRUCTION STORMWATER TO BASINS AND DISCHARGE LOCATIONS PRIOR TO USE.
   - 5.5. DIVERT OFF-SITE WATER THROUGH THE PROJECT IN AN APPROPRIATE MANNER SO NOT TO DISTURB THE UPSTREAM OR DOWNSTREAM SOILS, VEGETATION OR HYDROLOGY BEYOND THE PERMITTED AREA.

6. PROTECT SLOPES:
   - 6.1. INTERCEPT AND DIVERT STORM RUNOFF FROM UPSLOPE DRAINAGE AREAS AWAY FROM UNPROTECTED AND NEWLY ESTABLISHED AREAS AND SLOPES TO A STABILIZED OUTLET OR CONVEYANCE.
   - 6.2. CONSIDER HOW GROUNDWATER SEEPAGE ON CUT SLOPES MAY IMPACT SLOPE STABILITY AND INCORPORATE APPROPRIATE MEASURES TO MINIMIZE EROSION.
   - 6.3. CONVEY STORMWATER DOWN THE SLOPE IN A STABILIZED CHANNEL OR SLOPE DRAIN.
   - 6.4. THE OUTER FACE OF THE FILL SLOPE SHOULD BE IN A LOOSE RUFFLED CONDITION PRIOR TO TURF ESTABLISHMENT. TOPSOIL OR HUMUS LAYERS SHALL BE TRACKED UP AND DOWN THE SLOPE, DISKED, HARROWED, DRAGGED WITH A CHAIN OR MAT, MACHINE-RAKED, OR HAND-WORKED TO PRODUCE A RUFFLED SURFACE.

7. ESTABLISH STABILIZED CONSTRUCTION EXITS:
   - 7.1. INSTALL AND MAINTAIN CONSTRUCTION EXITS, ANYWHERE TRAFFIC LEAVES A CONSTRUCTION SITE ONTO A PUBLIC RIGHT-OF-WAY.
   - 7.2. SWEEP ALL CONSTRUCTION RELATED DEBRIS AND SOIL FROM THE ADJACENT PAVED ROADWAYS AS NECESSARY.

8. PROTECT STORM DRAIN INLETS:
   - 8.1. DIVERT SEDIMENT LADEN WATER AWAY FROM INLET STRUCTURES TO THE EXTENT POSSIBLE.
   - 8.2. INSTALL SEDIMENT BARRIERS AND SEDIMENT TRAPS AT INLETS TO PREVENT SEDIMENT FROM ENTERING THE DRAINAGE SYSTEM.
   - 8.3. CLEAN CATCH BASINS, DRAINAGE PIPES, AND CULVERTS IF SIGNIFICANT SEDIMENT IS DEPOSITED.
   - 8.4. DROP INLET SEDIMENT BARRIERS SHOULD NEVER BE USED AS THE PRIMARY MEANS OF SEDIMENT CONTROL AND SHOULD ONLY BE USED TO PROVIDE AN ADDITIONAL LEVEL OF PROTECTION TO STRUCTURES AND DOWN-GRADIENT SENSITIVE RECEPTORS.

9. SOIL STABILIZATION:
   - 9.1. WITHIN THREE DAYS OF THE LAST ACTIVITY IN AN AREA, ALL EXPOSED SOIL AREAS, WHERE CONSTRUCTION ACTIVITIES ARE COMPLETE, SHALL BE STABILIZED.
   - 9.2. IN ALL AREAS, TEMPORARY SOIL STABILIZATION MEASURES SHALL BE APPLIED IN ACCORDANCE WITH THE STABILIZATION REQUIREMENTS (SECTION 2.2) OF THE 2012 CGP. (SEE TABLE 1 FOR GUIDANCE ON THE SELECTION OF TEMPORARY SOIL STABILIZATION MEASURES.)
   - 9.3. EROSION CONTROL SEED MIX SHALL BE SOWN IN ALL INACTIVE CONSTRUCTION AREAS THAT WILL NOT BE PERMANENTLY SEEDED WITHIN TWO WEEKS OF DISTURBANCE AND PRIOR TO SEPTEMBER 15, OF ANY GIVEN YEAR. IN ORDER TO ACHIEVE VEGETATIVE STABILIZATION PRIOR TO THE END OF THE GROWING SEASON.
   - 9.4. SOIL TACKIFIERS MAY BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND REAPPLIED AS NECESSARY TO MINIMIZE SOIL AND MULCH LOSS UNTIL PERMANENT VEGETATION IS ESTABLISHED.

10. RETAIN SEDIMENT ON-SITE AND CONTROL DEWATERING PRACTICES:
    - 10.1. TEMPORARY SEDIMENT BASINS (CGP-SECTION 2.1.3.2) OR SEDIMENT TRAPS (ENV-WQ 1506.10) SHALL BE SIZED TO RETAIN, ON SITE, THE VOLUME OF A 2-YEAR 24-HOUR STORM EVENT FOR ANY AREA OF DISTURBANCE OR 3,600 CUBIC FEET OF STORMWATER RUNOFF PER ACRE OF DISTURBANCE, WHICHEVER IS GREATER. TEMPORARY SEDIMENT BASINS USED TO TREAT STORMWATER RUNOFF FROM AREAS GREATER THAN 5-ACRES OF DISTURBANCE SHALL BE SIZED TO ALSO CONTROL STORMWATER RUNOFF FROM A 10-YEAR 24 HOUR STORM EVENT. ON-SITE RETENTION OF THE 10-YEAR 24-HOUR EVENT IS NOT REQUIRED.
    - 10.2. CONSTRUCT AND STABILIZE DEWATERING INFILTRATION BASINS PRIOR TO ANY EXCAVATION THAT MAY REQUIRE DEWATERING.
    - 10.3. TEMPORARY SEDIMENT BASINS OR TRAPS SHALL BE PLACED AND STABILIZED AT LOCATIONS WHERE CONCENTRATED FLOW (CHANNELS AND PIPES) DISCHARGE TO THE SURROUNDING ENVIRONMENT FROM AREAS OF UNSTABILIZED EARTH DISTURBING ACTIVITIES.

11. ADDITIONAL EROSION AND SEDIMENT CONTROL GENERAL PRACTICES:
    - 11.1. USE TEMPORARY MULCHING, PERMANENT MULCHING, TEMPORARY VEGETATIVE COVER, AND PERMANENT VEGETATIVE COVER TO REDUCE THE NEED FOR DUST CONTROL. USE MECHANICAL SWEEPERS ON PAVED SURFACES WHERE NECESSARY TO PREVENT DUST BUILDUP. APPLY WATER, OR OTHER DUST INHIBITING AGENTS OR TACKIFIERS, AS APPROVED BY THE NHDES.
    - 11.2. ALL STOCKPILES SHALL BE CONTAINED WITH TEMPORARY PERIMETER CONTROLS. INACTIVE SOIL STOCKPILES SHOULD BE PROTECTED WITH SOIL STABILIZATION MEASURES (TEMPORARY EROSION CONTROL SEED MIX AND MULCH, SOIL BINDER) OR COVERED WITH ANCHORED TARPS.
    - 11.3. EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSPECTED IN ACCORDANCE WITH SECTION 645 OF NHDOT SPECIFICATIONS, WEEKLY AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.25 IN. OF RAIN PER 24-HOUR PERIOD. EROSION AND SEDIMENT CONTROL MEASURES WILL ALSO BE INSPECTED IN ACCORDANCE WITH THE GUIDANCE MEMO FROM THE NHDES CONTAINED WITHIN THE CONTRACT PROPOSAL AND THE EPA CONSTRUCTION GENERAL PERMIT.
    - 11.4. THE CONTRACTOR SHOULD UTILIZE STORM DRAIN INLET PROTECTION TO PREVENT SEDIMENT FROM ENTERING A STORM DRAINAGE SYSTEM PRIOR TO THE PERMANENT STABILIZATION OF THE CONTRIBUTING DISTURBED AREA.
    - 11.5. PERMANENT STABILIZATION MEASURES WILL BE CONSTRUCTED AND MAINTAINED IN LOCATIONS AS SHOWN ON THE CONSTRUCTION PLANS TO STABILIZE AREAS. VEGETATIVE STABILIZATION SHALL NOT BE CONSIDERED PERMANENTLY STABILIZED UNTIL VEGETATIVE GROWTH COVERS AT LEAST 85% OF THE DISTURBED AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL FOR ONE YEAR AFTER PROJECT COMPLETION.
    - 11.6. CATCH BASINS: CARE SHALL BE TAKEN TO ENSURE THAT SEDIMENTS DO NOT ENTER ANY EXISTING CATCH BASINS DURING CONSTRUCTION. THE CONTRACTOR SHALL PLACE TEMPORARY STONE INLET PROTECTION OVER INLETS IN AREAS OF SOIL DISTURBANCE THAT ARE SUBJECT TO SEDIMENT CONTAMINATION.
    - 11.7. TEMPORARY AND PERMANENT DITCHES SHALL BE CONSTRUCTED, STABILIZED AND MAINTAINED IN A MANNER THAT WILL MINIMIZE SCOUR. TEMPORARY AND PERMANENT DITCHES SHALL BE DIRECTED TO DRAIN TO SEDIMENT BASINS OR STORM WATER COLLECTION AREAS.
    - 11.8. WINTER EXCAVATION AND EARTHWORK ACTIVITIES NEED TO BE LIMITED IN EXTENT AND DURATION, TO MINIMIZE POTENTIAL EROSION AND SEDIMENTATION IMPACTS. THE AREA OF EXPOSED SOIL SHALL BE LIMITED TO ONE ACRE, OR THAT WHICH CAN BE STABILIZED AT THE END OF EACH DAY UNLESS A WINTER CONSTRUCTION PLAN, DEVELOPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, IS REVIEWED AND APPROVED BY THE DEPARTMENT.
    - 11.9. CHANNEL PROTECTION MEASURES SHALL BE SUPPLEMENTED WITH PERIMETER CONTROL MEASURES WHEN THE DITCH LINES OCCUR AT THE BOTTOM OF LONG FILL SLOPES. THE PERIMETER CONTROLS SHALL BE INSTALLED ON THE FILL SLOPE TO MINIMIZE THE POTENTIAL FOR FILL SLOPE SEDIMENT DEPOSITS IN THE DITCH LINE.

BEST MANAGEMENT PRACTICES (BMP) BASED ON AMOUNT OF OPEN CONSTRUCTION AREA

12. STRATEGIES SPECIFIC TO OPEN AREAS LESS THAN 5 ACRES:
    - 12.1. THE CONTRACTOR SHALL COMPLY WITH RSA 485:A:17 AND ENV-WQ 1500: ALTERATION OF TERRAIN FOR CONSTRUCTION AND USE ALL CONVENTIONAL BMP STRATEGIES.
    - 12.2. SLOPES STEEPER THAN 3:1 WILL RECEIVE TURF ESTABLISHMENT WITH MATTING.
    - 12.3. SLOPES 3:1 OR FLATTER WILL RECEIVE TURF ESTABLISHMENT ALONE.
    - 12.4. AREAS WHERE HAUL ROADS ARE CONSTRUCTED AND STORMWATER CANNOT BE TREATED THE DEPARTMENT WILL CONSIDER INFILTRATION.
    - 12.5. FOR HAUL ROADS ADJACENT TO SENSITIVE ENVIRONMENTAL AREAS OR STEEPER THAN 5%, THE DEPARTMENT WILL CONSIDER USING EROSION STONE, CRUSHED GRAVEL, OR CRUSHED STONE BASE TO HELP MINIMIZE EROSION ISSUES.
    - 12.6. ALL AREAS THAT CAN BE STABILIZED SHALL BE STABILIZED PRIOR TO OPENING UP NEW TERRITORY.
    - 12.7. DETENTION BASINS SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE A 2 YEAR STORM EVENT.

13. STRATEGIES SPECIFIC TO OPEN AREAS BETWEEN 5 AND 10 ACRES:
    - 13.1. THE CONTRACTOR SHALL COMPLY WITH RSA 485:A:17 AND ENV-WQ 1500 ALTERATION OF TERRAIN AND SHALL USE CONVENTIONAL BMP STRATEGIES AND ALL TREATMENT OPTIONS USED FOR UNDER 5 ACRES WILL BE UTILIZED.
    - 13.2. DETENTION BASINS WILL BE CONSTRUCTED TO ACCOMMODATE THE 2-YEAR 24-HOUR STORM EVENT AND CONTROL A 10-YEAR 24-HOUR STORM EVENT.
    - 13.3. SLOPES STEEPER THAN A 3:1 WILL RECEIVE TURF ESTABLISHMENT WITH MATTING OR OTHER TEMPORARY SOIL STABILIZATION MEASURES DETAILED IN TABLE 1. THE CONTRACTOR MAY ALSO CONSIDER A SOIL BINDER IN ACCORDANCE WITH THE NHDES APPROVALS OR REGULATIONS. OTHER ALTERNATIVE MEASURES, SUCH AS BONDED FIBER MATRIXES (BFMS) OR FLEXIBLE GROWTH MEDIUMS (FGMS) MAY BE UTILIZED, IF MEETING THE NHDES APPROVALS AND REGULATIONS.
    - 13.4. SLOPES 3:1 OR FLATTER WILL RECEIVE TURF ESTABLISHMENT OR OTHER TEMPORARY SOIL STABILIZATION MEASURES DETAILED IN TABLE 1. THE CONTRACTOR MAY ALSO CONSIDER A SOIL BINDER IN ACCORDANCE WITH THE NHDES APPROVALS OR REGULATIONS.

14. STRATEGIES SPECIFIC TO OPEN AREAS OVER 10 ACRES:
    - 14.1. THE CONTRACTOR SHALL COMPLY WITH RSA 485:A:17 AND ENV-WQ 1500 ALTERATION OF TERRAIN AND SHALL USE CONVENTIONAL BMP STRATEGIES AND ALL TREATMENT OPTIONS USED FOR UNDER 5 ACRES AND BETWEEN 5 AND 10 ACRES WILL BE UTILIZED.
    - 14.2. THE DEPARTMENT ANTICIPATES THAT SOIL BINDERS WILL BE NEEDED ON ALL SLOPES STEEPER THAN 3:1, IN ORDER TO MINIMIZE EROSION AND REDUCE THE AMOUNT OF SEDIMENT IN THE STORMWATER TREATMENT BASINS.
    - 14.3. THE CONTRACTOR WILL BE REQUIRED TO HAVE AN APPROVED DESIGN IN ACCORDANCE WITH ENV-WQ 1506.12 FOR AN ACTIVE FLOCCULANT TREATMENT SYSTEM TO TREAT AND RELEASE WATER CAPTURED IN STORM WATER BASINS. THE CONTRACTOR SHALL ALSO RETAIN THE SERVICES OF AN ENVIRONMENTAL CONSULTANT WHO HAS DEMONSTRATED EXPERIENCE IN THE DESIGN OF FLOCCULANT TREATMENT SYSTEMS. THE CONSULTANT WILL ALSO BE RESPONSIBLE FOR THE IMPLEMENTATION AND MONITORING OF THE SYSTEM.

TABLE 1

GUIDANCE ON SELECTING TEMPORARY SOIL STABILIZATION MEASURES

APPLICATION AREAS	DRY MULCH METHODS				HYDRAULICALLY APPLIED MULCHES[2]				ROLLED EROSION CONTROL BLANKETS[3]			
	HMT	WC	SG	CB	HM	SMM	BFM	FRM	SNSB	DNSB	DNSCB	DNCB
SLOPES[1]												
STEEPER THAN 2:1	NO	NO	YES	NO	NO	NO	NO	YES	NO	NO	NO	YES
2:1 SLOPE	YES'	YES'	YES	YES	NO	NO	YES	YES	NO	YES	YES	YES
3:1 SLOPE	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	NO
4:1 SLOPE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
WINTER STABILIZATION	4T/AC	YES	YES	YES	NO	NO	YES	YES	YES	YES	YES	YES
CHANNELS												
LOW FLOW CHANNELS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES
HIGH FLOW CHANNELS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES

ABBREV.	STABILIZATION MEASURE	ABBREV.	STABILIZATION MEASURE	ABBREV.	STABILIZATION MEASURE
HMT	HAY MULCH & TACK	HM	HYDRAULIC MULCH	SNSB	SINGLE NET STRAW BLANKET
WC	WOOD CHIPS	SMM	STABILIZED MULCH MATRIX	DNSB	DOUBLE NET STRAW BLANKET
SG	STUMP GRINDINGS	BFM	BONDED FIBER MATRIX	DNSCB	2 NET STRAW-COCONUT BLANKET
CB	COMPOST BLANKET	FRM	FIBER REINFORCED MEDIUM	DNCB	2 NET COCONUT BLANKET

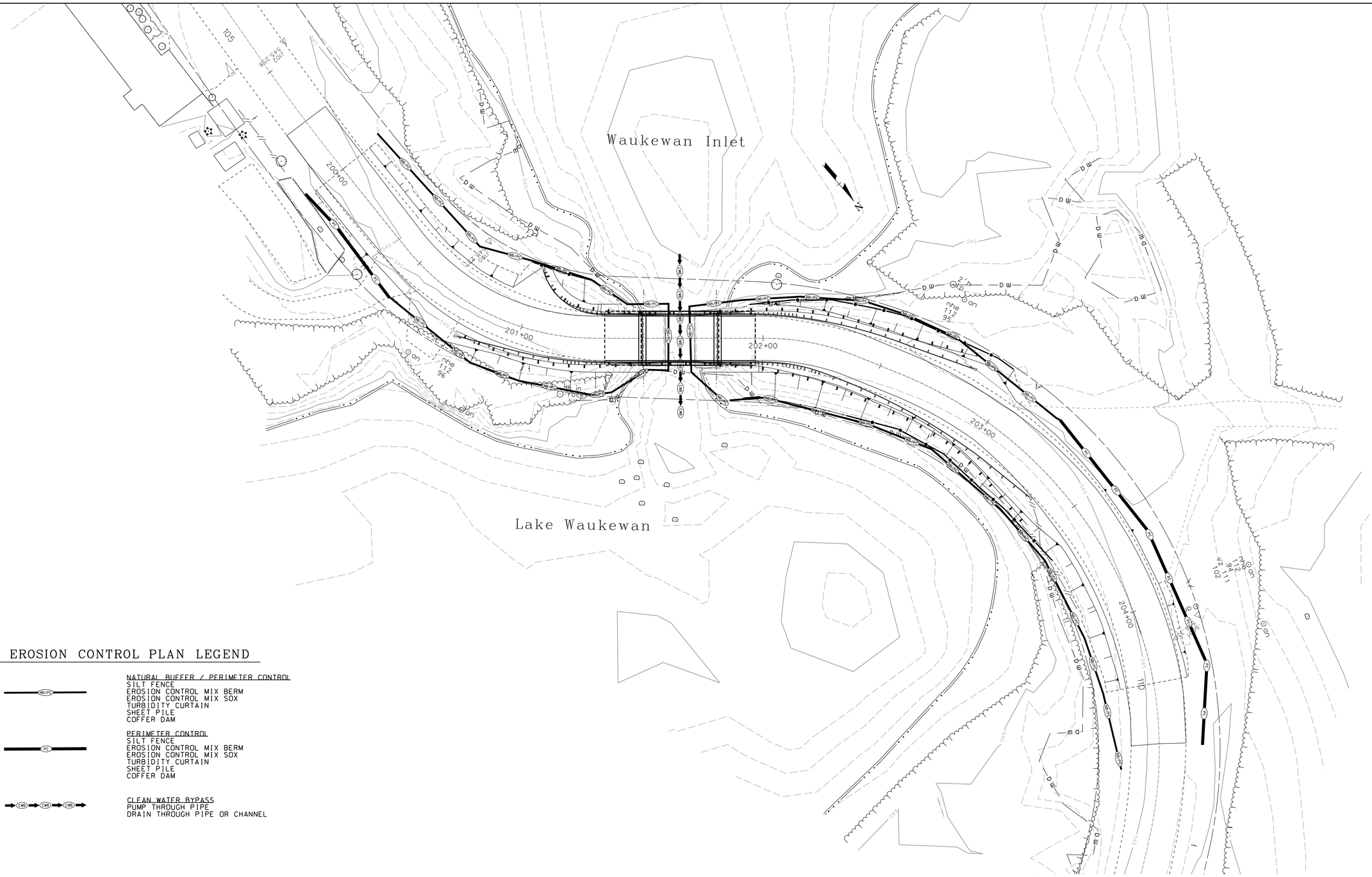
NOTES:
1. ALL SLOPE STABILIZATION OPTIONS ASSUME A SLOPE LENGTH ≤10 TIMES THE HORIZONTAL DISTANCE COMPONENT OF THE SLOPE, IN FEET.
2. PRODUCTS CONTAINING POLYACRYLAMIDE (PAM) SHALL NOT BE APPLIED DIRECTLY TO OR WITHIN 100 FEET OF ANY SURFACE WATER WITHOUT PRIOR WRITTEN APPROVAL FROM THE NH DEPARTMENT OF ENVIRONMENTAL SERVICES.
3. ALL EROSION CONTROL BLANKETS SHALL BE MADE WITH WILDLIFE FRIENDLY BIODEGRADABLE NETTING.

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

WETLAND IMPACT PLANS

REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
12-21-2015	erosstrat	24579	6	8



EROSION CONTROL PLAN LEGEND

NB/PC — NATURAL BUFFER / PERIMETER CONTROL
SILT FENCE
EROSION CONTROL MIX BERM
EROSION CONTROL MIX SOX
TURBIDITY CURTAIN
SHEET PILE
COFFER DAM

PC — PERIMETER CONTROL
SILT FENCE
EROSION CONTROL MIX BERM
EROSION CONTROL MIX SOX
TURBIDITY CURTAIN
SHEET PILE
COFFER DAM

CWD — CLEAN WATER BYPASS
PUMP THROUGH PIPE
DRAIN THROUGH PIPE OR CHANNEL

REVISIONS AFTER PROPOSAL

NUMBER	DESCRIPTION	STATION	DATE

		DATE
SDR PROCCESSED	NHDOT	
NEW DESIGN	EVS	10/20/2020
SHEET CHECKED	CRF	10/20/2020
AS BUILT DETAILS		DATE

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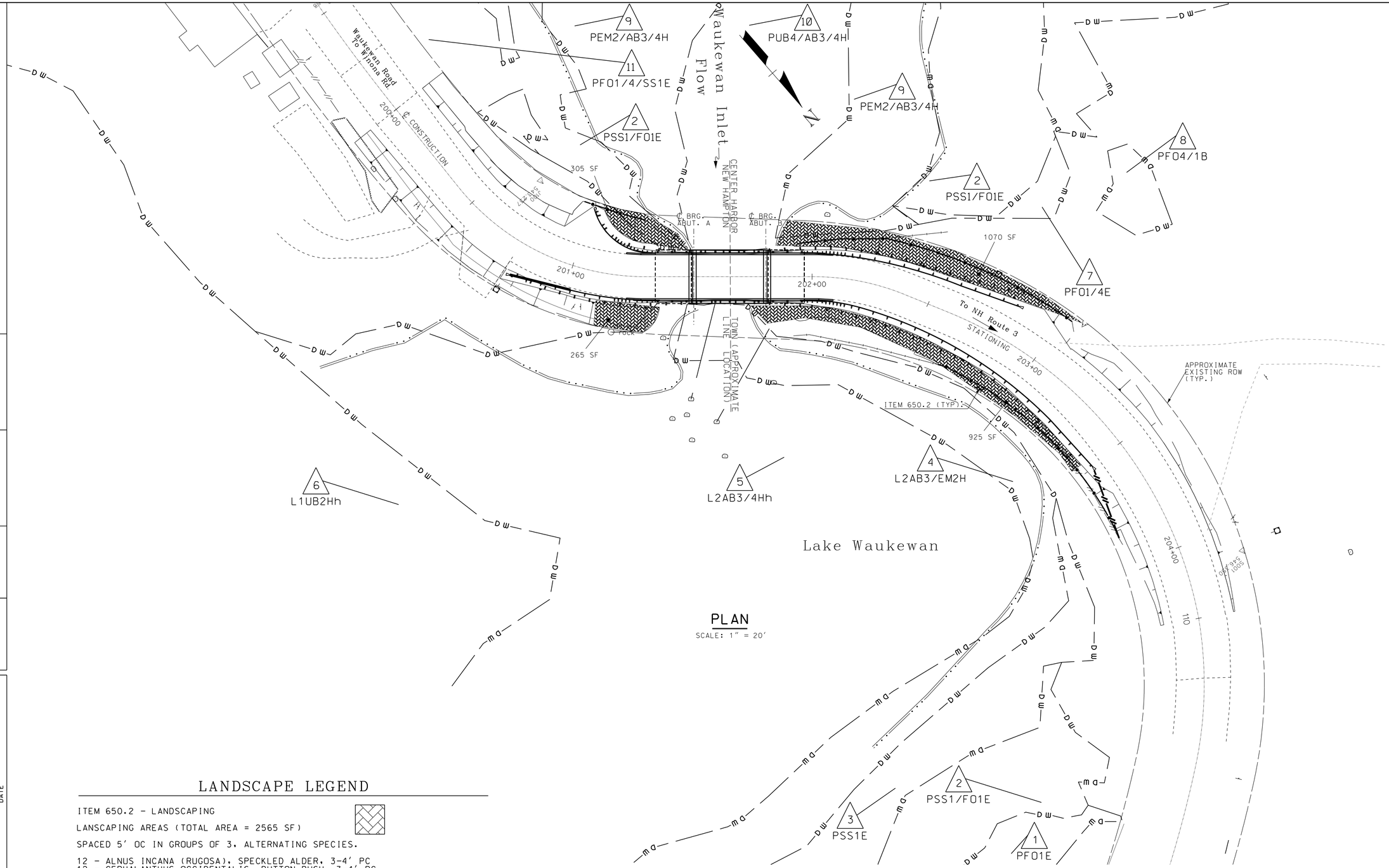
STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION ◦ BUREAU OF HIGHWAY DESIGN

EROSION CONTROL PLAN

SHEET SCALE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1" = 20'	24579eroscontrol	24579	7	8



PLAN

SCALE: 1" = 20'

LANDSCAPE LEGEND

ITEM 650.2 - LANDSCAPING

LANSCAPING AREAS (TOTAL AREA = 2565 SF)

SPACED 5' OC IN GROUPS OF 3, ALTERNATING SPECIES.

12 - ALNUS INCANA (RUGOSA), SPECKLED ALDER, 3-4' PC
12 - CEPHALANTHUS OCCIDENTALIS, BUTTON BUSH, 3-4' PC
12 - GAULTHERIA PROCUMBENS, AMERICAN WINTERGREEN, #1 PC
12 - ILEX MUCRONATA, MOUNTAIN HOLLY, 2-3' PC
18 - ILEX VERTICILLATA, WINTERBERRY, 2-3' PC
12 - KALMIA ANGUSTIFOLIA, SHEEP LAUREL 2-3' PC
12 - OSMUNDA CINNAMONEA, CINNAMON FERN, #1 PC
12 - VACCINIUM ANGUSTIFOLIUM, LOWBUSH BLUEBERRY, 18-24" PC
12 - VACCINIUM CORYMBOSUM, HIGHBUSH BLUEBERRY, 2-3' PC

REVISIONS AFTER PROPOSAL

NUMBER	DESCRIPTION	STATION	DATE

		DATE
SDR PROCCESSED	NHDOT	
NEW DESIGN	EVS	10/20/2020
SHEET CHECKED	CRF	10/20/2020
AS BUILT DETAILS		

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LANDSCAPING PLAN

SHEET SCALE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1" = 20'	24579Landscaping	24579	8	8