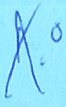


STATE OF NEW HAMPSHIRE INTER-DEPARTMENT COMMUNICATION

DATE: March 09, 2021

FROM:  Andrew O'Sullivan
Wetlands Program Manager

AT (OFFICE): Department of
Transportation

SUBJECT Dredge & Fill Application
Dover-Rochester, 29440

Bureau of
Environment

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 Turnpikes for the subject major impact project. This project is classified as major in Env-Wt 407.03(a)-Jurisdictional Area Size Thresholds. The project is located along the Spaulding Turnpike / NH Route 16 in the Town of Rochester, NH. The proposed work consists of replacing the existing Rochester Toll Plaza with All Electronic Tolling (AET), mitigating highway noise through construction of sound walls and treatment of stormwater in accordance with NHDOT standards.

This project was reviewed at the Natural Resource Agency Coordination Meeting on August 19, 2020 and December 16, 2020. 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>.

NHDOT anticipates and request that this project be reviewed and permitted by the Army Corp of Engineers through the State Programmatic General Permit process. A copy of the application has been sent to the Army Corp of Engineers.

Mitigation is required for the project as there are permanent impacts to channel and wetlands associated with construction. An in-lieu fee payment of \$449,947.39 will be made to the NHDES ARM fund.

The lead people to contact for this project are Nancy Spaulding, Bureau of Turnpikes (271-3668 or Nancy.Spaulding@dot.nh.gov) or Andrew O'Sullivan, Wetlands Program Manager, Bureau of Environment (271-0556 or Andrew.O'Sullivan@dot.nh.gov).

A payment voucher has been processed for this application (Voucher #65079) in the amount of \$17085.20.

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:sel

cc:

BOE Original

Town of Rochester (4 copies via certified mail)

Cochecho River LAC (1 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)

Beth Alafat & Jeanie Brochi, US Environmental Protection Agency (via electronic notification)

Michael Hicks & Rick Kristoff, US Army Corp of Engineers (via electronic notification)

Kevin Nyhan, BOE (via electronic notification)

S:\Environment\PROJECTS\Dover\29440\Wetlands\WETAPP - Turnpikes.doc



**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-A/ Env-Wt 522

APPLICANT LAST NAME, FIRST NAME, M.I.: NH Department of Transportation

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 Dredge and Fill Applications must meet the criteria and requirements listed in the Standard Dredge and Fill 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.

lrn@des.nh.gov or (603) 271-2147

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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 project would involve the replacement of the existing Rochester Toll Plaza on the Spaulding Turnpike/NH Route 16 with all electronic tolling (AET) that allows for the electronic collection of tolls at highway speed without requiring vehicles to stop or slow in order to pay the toll, as with the existing conventional toll plaza. The project purpose is to replace deteriorating toll facilities, increase safety, reduce emissions and reduce fuel use by the travelling public. The project would also mitigate highway noise and treat stormwater according to current NHDOT standards. The necessary E-ZPass infrastructure would be installed on a full span toll gantry placed over the highway. Existing toll facilities and support buildings and parking areas would be removed, reducing the area of impervious pavement by approximately 1.4 acres. A small administrative building and parking area would be constructed. Stormwater BMPs would be constructed to treat road runoff. Two wood panel soundwalls on earthen berms, one north of the gantry and one to the south (totalling 1.2 mi) would be constructed, resulting in 32,298 sf of permanent impacts to wetlands and loss of one vernal pool, and 369 linear feet of permanent impacts to intermittent streams. Temporary impacts include 8,083 sf of wetland and 22 lf (85 sf) of intermittent stream impact. The project is approximately 2 miles long, including soundwalls. All project work would be within the limits of the existing ROW.
- 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.

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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 NHDES 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.



**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: NH Department of Transportation **TOWN NAME:** Rochester

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

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

SECTION 1 - REQUIRED PLANNING FOR ALL PROJECTS (Env-Wt 306.05; RSA 482-A:3, I(d)(2))	
Please use the Wetland Permit Planning Tool (WPPT) , the Natural Heritage Bureau (NHB) DataCheck Tool , the Aquatic Restoration Mapper , or other sources to assist in identifying key features such as: priority resource areas (PRAs) , protected species or habitats , coastal areas, designated rivers, or designated prime wetlands.	
Has the required planning been completed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Does the property contain a PRA? If yes, provide the following information:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<ul style="list-style-type: none"> • Does the project qualify for an Impact Classification Adjustment (e.g. NH Fish and Game Department (NHF&G) and NHB agreement for a classification downgrade) or a Project-Type Exception (e.g. Maintenance or Statutory Permit-by-Notification (SPN) project)? See Env-Wt 407.02 and Env-Wt 407.04). <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No • Protected species or habitat? <ul style="list-style-type: none"> ○ If yes, species or habitat name(s): <input style="width: 100px;" type="text"/> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No ○ NHB Project ID #: <input style="width: 100px;" type="text"/> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No • Bog? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No • Floodplain wetland contiguous to a tier 3 or higher watercourse? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No • Designated prime wetland or duly-established 100-foot buffer? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No • Sand dune, tidal wetland, tidal water, or undeveloped tidal buffer zone? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 	
Is the property within a Designated River corridor? If yes, provide the following information:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<ul style="list-style-type: none"> • Name of Local River Management Advisory Committee (LAC): <input style="width: 150px;" type="text"/> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No • A copy of the application was sent to the LAC on Month: <input style="width: 30px;" type="text"/> Day: <input style="width: 30px;" type="text"/> Year: <input style="width: 30px;" type="text"/> 	

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For dredging projects, is the subject property contaminated? • If yes, list contaminant: N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is there potential to impact impaired waters, class A waters, or outstanding resource waters?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
For stream crossing projects, provide watershed size (se Wetland Permit Planning Tool or Stream Stats): Watersheds of impacted streams - 19.2 -115.2 acres	
SECTION 2 - PROJECT DESCRIPTION (Env-Wt 311.04(i))	
Provide a brief description of the project and the purpose of the project, outlining the scope of work to be performed and whether impacts are temporary or permanent. DO NOT reply "See attached"; please use the space provided below.	
<p>The project would involve the replacement of the existing Rochester Toll Plaza on the Spaulding Turnpike/NH Route 16 with all electronic tolling (AET) that allows for the electronic collection of tolls at highway speed without requiring vehicles to stop or slow in order to pay the toll as is the case at the existing conventional toll plaza. The purpose of the project is to replace deteriorating toll facilities, increase safety, reduce emissions, reduce fuel use by the travelling public, and mitigate highway noise and treat stormwater according to current NHDOT standards. The necessary E-ZPass infrastructure would be installed on a full span toll gantry which would be placed over the highway. Existing toll facilities and support buildings and parking areas will be removed. The area of impervious pavement would decrease by approximately 1.4 acres as a result of parking area removal. A small administrative building and parking area will be constructed. Stormwater BMPs will be constructed to treat road runoff. Two soundwalls, one north of the gantry and one to the south will be constructed, resulting in permanent impacts to wetlands of 32,298 sf, including one vernal pool, and 369 linear feet of permanent impacts to intermittent streams. Temporary impacts include 8,083 sf of wetland and 22 lf (85 sf) of intermittent stream impact. All work associated with this project would be within the limits of the existing ROW.</p>	
SECTION 3 - PROJECT LOCATION	
Separate wetland permit applications must be submitted for each municipality within which wetland impacts occur.	
ADDRESS: Spaulding Turnpike just south of Exit 11	
TOWN/CITY: Rochester	
TAX MAP/BLOCK/LOT/UNIT: N/A	
US GEOLOGICAL SURVEY (USGS) TOPO MAP WATERBODY NAME: <input type="checkbox"/> N/A	
(Optional) LATITUDE/LONGITUDE in decimal degrees (to five decimal places): 43.27351° North 70.96314° West	

SECTION 4 - APPLICANT (DESIRED PERMIT HOLDER) INFORMATION (Env-Wt 311.04(a))		
If the applicant is a trust or a company, then complete with the trust or company information.		
NAME: NH Department of Transportation, C/O Nancy Spaulding, Bureau of Turnpikes		
MAILING ADDRESS: PO Box 2950		
TOWN/CITY: Concord	STATE: NH	ZIP CODE: 03302
EMAIL ADDRESS: Spaulding, Nancy <Nancy.L.Spaulding@dot.nh.gov>		
FAX: [REDACTED]	PHONE: (603) 485-3806	
ELECTRONIC COMMUNICATION: By initialing here: [REDACTED], I hereby authorize NHDES to communicate all matters relative to this application electronically.		
SECTION 5 - AUTHORIZED AGENT INFORMATION (Env-Wt 311.04(c))		
<input type="checkbox"/> N/A		
LAST NAME, FIRST NAME, M.I.: Carbonneau, Lee, E.		
COMPANY NAME: Normandeau Associates, Inc.		
MAILING ADDRESS: 25 Nashua Road		
TOWN/CITY: Bedford	STATE: NH	ZIP CODE: 03110
EMAIL ADDRESS: lcarbonneau@normandeau.com		
FAX: [REDACTED]	PHONE: 603 637-1150	
ELECTRONIC COMMUNICATION: By initialing here LEC, I hereby authorize NHDES to communicate all matters relative to this application electronically.		
SECTION 6 - PROPERTY OWNER INFORMATION (IF DIFFERENT THAN APPLICANT) (Env-Wt 311.04(b))		
If the owner is a trust or a company, then complete with the trust or company information.		
<input checked="" type="checkbox"/> Same as applicant		
NAME: [REDACTED]		
MAILING ADDRESS: [REDACTED]		
TOWN/CITY: [REDACTED]	STATE: [REDACTED]	ZIP CODE: [REDACTED]
EMAIL ADDRESS: [REDACTED]		
FAX: [REDACTED]	PHONE: [REDACTED]	
ELECTRONIC COMMUNICATION: By initialing here [REDACTED], I hereby authorize NHDES to communicate all matters relative to this application electronically.		

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

Describe how the resource-specific criteria have been met for each chapter listed above (please attach information about stream crossings, coastal resources, prime wetlands, or non-tidal wetlands and surface waters):
 In compliance with Env-Wt 400, Wetlands were delineated by Normandeau Certified Wetland Scientists in May of 2020 in accordance with the federal delineation manual, using the 2016 Regional Wetland Plant List published by the USACE, and the New England Hydric Soils Technical Committee’s “Field Indicators for Identifying Hydric Soils in New England”, Version 4 (2017). Vernal pools were identified based on “Identifying and Documenting Vernal Pools in New Hampshire” by NHFG, and assessed using the USACE Vernal Pool Assessment method in the 2016 Mitigation Guidance. The ordinary high water and banks of 8 un-named streams were also flagged and GPS located. As defined in Env-Wt 400 and 900, there are no Priority Resource Areas (PRA), but based on impacts to streams and wetlands, the project was classified as major impact. As specified in Env-Wt 527.02, this project is designed to improve public safety and resource conservation. Water will not be diverted in a way to impact abutters, and flooding offsite will not be increased. In accordance with Env-Wt 527.04, soundwall alternatives were assessed in an effort to reduce impacts to wetland functions and stream habitat. Stormwater quality will improve with the proposed BMPs, and temporary impact areas will be restored with native vegetation. This project is not a coastal project or located in Prime wetlands, so Env-Wt 600 and 700 do not apply. As required by Env-Wt 900, stream surveys, hydrologic and hydraulic analysis have been completed and culvert design standards have been met. Stream crossing worksheets are attached. Construction BMPs will be employed as shown on E&S Control plans.

SECTION 8 - AVOIDANCE AND MINIMIZATION

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

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

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

SECTION 9 - MITIGATION REQUIREMENT (Env-Wt 311.02)

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

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

N/A - Mitigation is not required

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

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

N/A – Compensatory mitigation is not required

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

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

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

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

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

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

JURISDICTIONAL AREA		PERMANENT			TEMPORARY		
		SF	LF	ATF	SF	LF	ATF
Wetlands	Forested Wetland	24,639		<input type="checkbox"/>	8,083		<input type="checkbox"/>
	Scrub-shrub Wetland	0		<input type="checkbox"/>			<input type="checkbox"/>
	Emergent Wetland	0		<input type="checkbox"/>			<input type="checkbox"/>
	Wet Meadow	0		<input type="checkbox"/>			<input type="checkbox"/>
	Vernal Pool	7659		<input type="checkbox"/>			<input type="checkbox"/>
	Designated Prime Wetland	0		<input type="checkbox"/>			<input type="checkbox"/>
	Duly-established 100-foot Prime Wetland Buffer	0		<input type="checkbox"/>			<input type="checkbox"/>
Surface Water	Intermittent / Ephemeral Stream	2247	369	<input type="checkbox"/>	85	22	<input type="checkbox"/>
	Perennial Stream or River	0	0	<input type="checkbox"/>			<input type="checkbox"/>
	Lake / Pond	0	0	<input type="checkbox"/>			<input type="checkbox"/>
	Docking - Lake / Pond	0	0	<input type="checkbox"/>			<input type="checkbox"/>
	Docking - River	0	0	<input type="checkbox"/>			<input type="checkbox"/>
Banks	Bank - Intermittent Stream	0	0	<input type="checkbox"/>			<input type="checkbox"/>
	Bank - Perennial Stream / River	0	0	<input type="checkbox"/>			<input type="checkbox"/>
	Bank / Shoreline - Lake / Pond	0	0	<input type="checkbox"/>			<input type="checkbox"/>
Tidal	Tidal Waters	0	0	<input type="checkbox"/>			<input type="checkbox"/>
	Tidal Marsh	0	0	<input type="checkbox"/>			<input type="checkbox"/>
	Sand Dune	0		<input type="checkbox"/>			<input type="checkbox"/>
	Undeveloped Tidal Buffer Zone (TBZ)	0		<input type="checkbox"/>			<input type="checkbox"/>
	Previously-developed TBZ	0		<input type="checkbox"/>			<input type="checkbox"/>
	Docking - Tidal Water	0		<input type="checkbox"/>			<input type="checkbox"/>
TOTAL		34,545	369		8,168	22	

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

<input type="checkbox"/> MINIMUM IMPACT FEE: Flat fee of \$400.		
<input type="checkbox"/> 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).		
<input checked="" type="checkbox"/> MINOR OR MAJOR IMPACT FEE: Calculate using the table below:		
Permanent and temporary (non-docking): 42,713 SF	× \$0.40 = \$	17085.2
Seasonal docking structure: 0 SF	× \$2.00 = \$	0
Permanent docking structure: 0 SF	× \$4.00 = \$	0
Projects proposing shoreline structures (including docks) add \$400 = \$		0
Total = \$		17085.2

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The application fee for minor or major impact is the above calculated total or \$400, whichever is greater = \$ 17085.2

SECTION 13 - PROJECT CLASSIFICATION (Env-Wt 306.05)
 Indicate the project classification.

<input type="checkbox"/> Minimum Impact Project	<input type="checkbox"/> Minor Project	<input checked="" type="checkbox"/> Major Project
---	--	---

SECTION 14 - REQUIRED CERTIFICATIONS (Env-Wt 311.11)

Initial each box below to certify:

Initials: <i>NS</i>	To the best of the signer's knowledge and belief, all required notifications have been provided.
------------------------	--

Initials: <i>NS</i>	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: <i>NS</i>	<p>The signer understands that:</p> <ul style="list-style-type: none"> The submission of false, incomplete, or misleading information constitutes grounds for NHDES to: <ol style="list-style-type: none"> Deny the application. Revoke any approval that is granted based on the information. If the signer is a certified wetland scientist, licensed surveyor, or professional engineer licensed to practice in New Hampshire, refer the matter to the joint board of licensure and certification established by RSA 310-A:1. The signer is subject to the penalties specified in New Hampshire law for falsification in official matters, currently RSA 641. The signature shall constitute authorization for the municipal conservation commission and the Department to inspect the site of the proposed project, except for minimum impact forestry SPN projects and minimum impact trail projects, where the signature shall authorize only the Department to inspect the site pursuant to RSA 482-A:6, II.
------------------------	--

Initials:	If the applicant is not the owner of the property, each property owner signature shall constitute certification by the signer that he or she is aware of the application being filed and does not object to the filing.
-----------	---

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

SIGNATURE (OWNER): _____	PRINT NAME LEGIBLY:	DATE:
SIGNATURE (APPLICANT, IF DIFFERENT FROM OWNER): <i>Nancy L. Spaulding</i>	PRINT NAME LEGIBLY: Nancy L. Spaulding	DATE: <i>3/8/21</i>
SIGNATURE (AGENT, IF APPLICABLE): <i>Lee Carbonneau</i>	PRINT NAME LEGIBLY: Lee Carbonneau	DATE: 2/16/21

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

As required by RSA 482-A:3, I(a),(1), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

TOWN/CITY CLERK SIGNATURE: _____	PRINT NAME LEGIBLY: State agency exempt Per RSA 482-A:3,I(a)
-------------------------------------	---

TOWN/CITY: 4 copies via Cert. Mail	DATE: <input type="text"/>
------------------------------------	----------------------------

DIRECTIONS FOR TOWN/CITY CLERK:

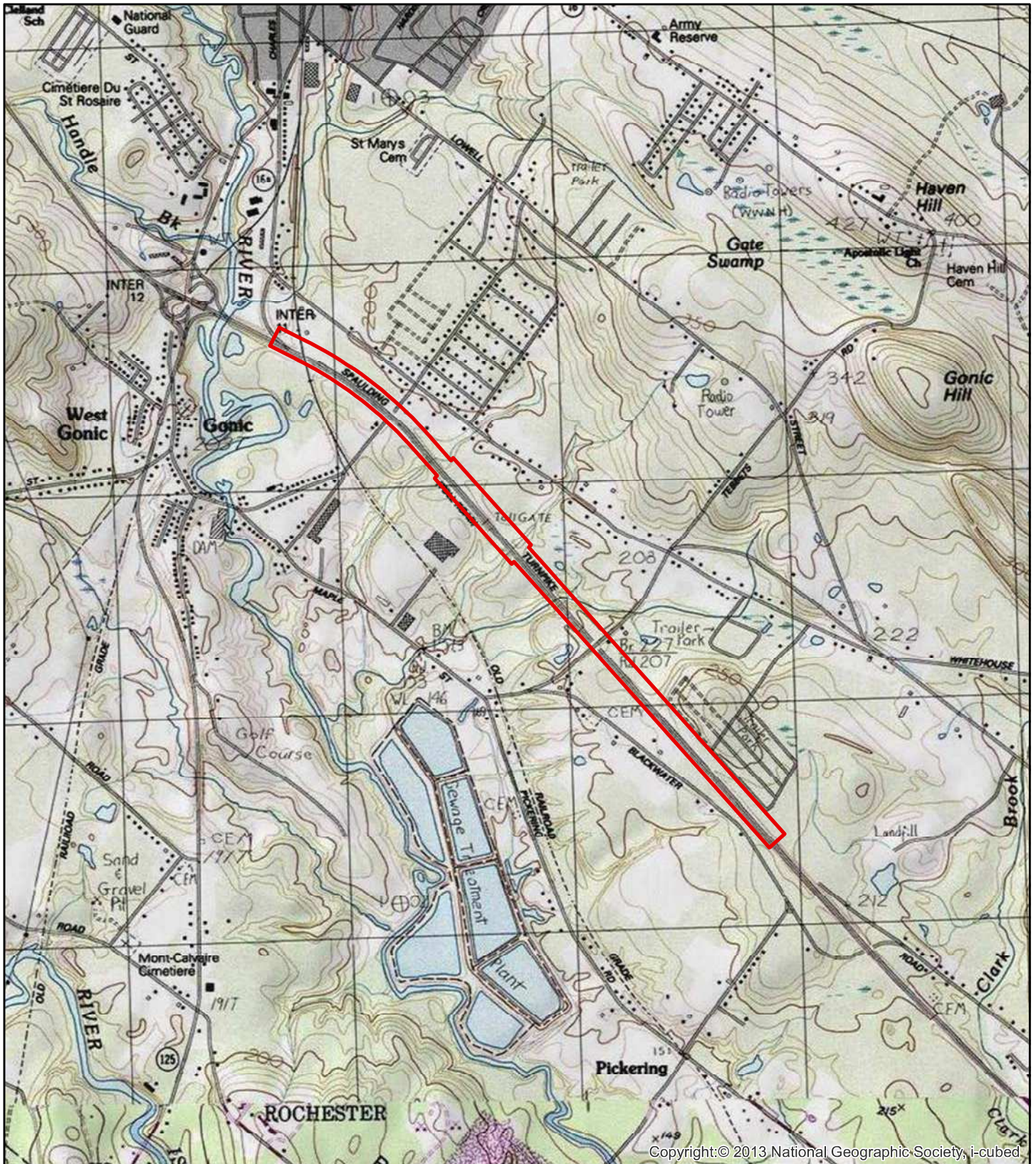
Per RSA 482-A:3, I(a)(1)

1. IMMEDIATELY sign the original application form and four copies in the signature space provided above.
2. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
3. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board.
4. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

Submit the original permit application form bearing the signature of the Town/City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery at the address at the bottom of this page. Make check or money order payable to "Treasurer – State of NH".

Project Location Maps



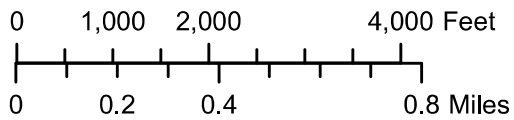
Copyright: © 2013 National Geographic Society, i-cubed.



1:24,000

**Dover-Rochester
AET Project 29440**
Rochester Project Area

 Project Area



 **NORMANDEAU
ASSOCIATES**
ENVIRONMENTAL CONSULTANTS




Dover-Rochester All Electronic Tolling Project, NHDOT #29440

Rochester, NH

 Project Area

1:24,000

0 0.25 0.5
 Miles





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



Water Division/Land Resources Management
Wetlands Bureau

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

APPLICANT'S NAME: NH Department of Transportation **TOWN NAME:** Rochester

Attachment A is required for *all minor and major projects*, and must be completed *in addition* to the [Avoidance and Minimization Narrative](#) or [Checklist](#) that is required by Env-Wt 307.11.

For projects involving construction or modification of non-tidal shoreline structures over areas of surface waters having an absence of wetland vegetation, only Sections I.X through I.XV are required to be completed.

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.

THE AET PROJECT WILL HAVE BOTH BENEFICIAL AND ADVERSE EFFECTS ON THE ENVIRONMENT. THIS PROJECT WILL INCLUDE STORMWATER BMPS WHERE THEY WERE PREVIOUSLY ABSENT, WHICH WILL IMPROVE WATER QUALITY IN THE TRIBUTARY STREAMS AND COCHECO RIVER. SEVERAL ALTERNATIVES TO THE SOUND WALL DESIGN WERE CONSIDERED IN AN EFFORT TO MINIMIZE IMPACTS TO WETLANDS AND STREAMS. NOISE MODELS WERE RUN FOR VARIOUS SHORTENED WALL OPTIONS, AND THE LEAST IMPACTING DESIGN THAT STILL MEETS NHDOT POLICY FOR NOISE MITIGATION WAS SELECTED. SOUNDWALL DESIGN AND STORMWATER BMP LOCATIONS WERE MODIFIED TO MINIMIZE STREAM AND WETLAND IMPACTS. ADDITIONAL INFORMATION IS PROVIDED IN SECTION I.IV AND ON FORM W-06-089.

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, crustacean, shellfish, and wildlife of significant value.

The project does not impact tidal marshes, as the project is not located in a tidal area. The wetlands that are impacted by the project are all forested wetlands. Freshwater marshes are not located in the project area, and are therefore avoided.

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 project landscape in Rochester drains generally from east to west, towards the Cocheco River, with culverts conducting flow from east to west under the Turnpike at topographical low points. These Turnpike culverts will not be replaced as part of this project. There are a few wetlands on both sides of the turnpike. Most of those on the east side are relatively small and/or narrow wetlands sandwiched between the turnpike and adjacent residential developments, with minimal functions and values. Eight streams are present, four of which will be permanently impacted. Three of the four intermittent streams that will be permanently impacted by the project (RS3, RS4 and RS7) flow east to west under the turnpike. The sound wall foundation berms, which will parallel the Turnpike, will cross these three streams in a more or less perpendicular manner, requiring extensions of the existing Turnpike culverts. These extensions will be approximately 29 to 45 feet long, and match the existing culvert diameters. The current stream connectivity and drainage pattern will remain. The fourth intermittent stream (RS2) that will be impacted flows south parallel and just east of the turnpike, joining perennial stream RS1 just before it flows west under the Turnpike. This small stream channel connects several small, linear wetlands. The soundwall foundation will fill 208 linear feet of this RS2 intermittent stream channel and 1,460 sf of the associated wetlands, but no alternative to this impact was possible, and the ROW is not wide enough to allow for stream relocation. The new culvert will be 100 ft long. Drainage flow will be maintained, and all streams will continue to pass the 50-year storm event (see stream summary table and stream crossing worksheets for the four impacted streams). The bank of one ephemeral/intermittent stream (RS8) will be temporarily impacted in two locations by the removal of drainage system outlets that will no longer be needed.

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.

Alternative soundwall lengths were evaluated in an effort to balance the noise impacts to adjacent residential receptors with impacts to wetlands, streams and vernal pools. Impacts to perennial streams were avoided. Impacts to four intermittent streams are not expected to have impacts on downstream fisheries, and there are no wetland-dependent protected species, species of concern, Priority Resource Areas, or exemplarily natural communities known or observed in the project area. Soundwall/foundation berm reductions at the three most significant impact areas, including vernal pool RVP 1, stream RS2, and wetland RW15 were considered by NHDOT. Reducing the extent of the northern end of the northern soundwall by 297 feet would eliminate impacts to vernal pool RVP-1 and wetland RW9, but the loss of noise mitigation was considered unacceptable. The southern end of the northern sound wall which overlaps RS2 for 208 feet could not be shortened without additional noise mitigation losses. The largest wetland impact to RW15 at the southern end of the south soundwall was reduced by 2,281 sf by shortening the soundwall berm, thereby saving some of the flood storage and sediment/toxicant retention functions of this wetland without loss of noise mitigation.

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.

This project does not adversely affect any public recreation area, conservation land, navigable water, or commercial property. All work will take place within the existing Turnpike ROW. The project will have a positive effect on traffic conditions on this main north-south highway, as vehicles will not need to stop or slow to pay the tolls.

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.

No part of the project work will floodplain wetlands associated with the nearby Cocheco River.

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 project has avoided impacts to the three perennial streams in the project area, and with one exception, their associated wetlands. Each of the four intermittent streams permanently impacted by the project also have small adjacent wetlands, but these are quite small and narrow, located between the Turnpike and nearby residences. These are not forested wetlands of high ecological integrity or numerous principal functions.

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.

Approximately 2/3 of the Rochester project area is located in an area with a groundwater classification of GA2. GA2 classification is applied to groundwater within high-yield stratified drift aquifers identified for potential use as a public water supply. Zones of stratified drift with a saturated thickness greater than 20 feet and a transmissivity greater than 1,000 feet squared per day are classified as GA2. Also classified as GA2 are zones of bedrock with average well yields greater than 50 gallons per minute. There are no public water supply wells or residential wells within the Turnpike ROW, and no source water protection or water supply intake protection designations in or near the project area. Four of the wetlands that will be impacted by the project function as groundwater recharge/discharge wetlands, but approximately 0.26 acres of impacts to these four wetlands will have no measureable impact to this very large aquifer in the Cocheco River valley. The project will treat stormwater runoff that was not previously treated, resulting in a net benefit to water quality in and around the project 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.

Four intermittent streams will be permanently impacted by the construction of sound walls (and their earthen foundations). The soundwalls will parallel the Spaulding Turnpike north and south of the new toll gantry. The existing culverts which carry these streams under the Spaulding Turnpike will be extended the minimum distance necessary to carry flow under the soundwall. The culverts will be sized to match the existing culverts. The fourth stream parallels the Turnpike, and will be filled and placed within a 100 ft long culvert. The stream cannot be rerouted within the ROW as there is inadequate room. Shortening the soundwall to avoid impacting the stream results in significant noise impacts to residential receptors adjacent to the Turnpike, and was considered unacceptable. Stream impacts will be mitigated through an ARM fund payment. One stream (RS8) will be temporarily impacted by the removal of three drainage system pipe outlets that currently empty into the stream. The diversion of flow into a stormwater treatment BMP will reduce erosion within this intermittent stream.

SECTION I.X - SHORELINE STRUCTURES - CONSTRUCTION SURFACE AREA (Env-Wt 313.03(c)(1))

Describe how the project has been designed to use the minimum construction surface area over surface waters necessary to meet the stated purpose of the structures.

N/A

SECTION I.XI - SHORELINE STRUCTURES - LEAST INTRUSIVE UPON PUBLIC TRUST (Env-Wt 313.03(c)(2))

Describe how the type of construction proposed is the least intrusive upon the public trust that will ensure safe docking on the frontage.

N/A

SECTION I.XII - SHORELINE STRUCTURES – ABUTTING PROPERTIES (Env-Wt 313.03(c)(3))

Describe how the structures have been designed to avoid and minimize impacts on ability of abutting owners to use and enjoy their properties.

N/A

SECTION I.XIII - SHORELINE STRUCTURES – COMMERCE AND RECREATION (Env-Wt 313.03(c)(4))

Describe how the structures have been designed to avoid and minimize impacts to the public's right to navigation, passage, and use of the resource for commerce and recreation.

N/A

SECTION I.XIV - SHORELINE STRUCTURES – WATER QUALITY, AQUATIC VEGETATION, WILDLIFE AND FINFISH HABITAT (Env-Wt 313.03(c)(5))

Describe how the structures have been designed, located, and configured to avoid impacts to water quality, aquatic vegetation, and wildlife and finfish habitat.

N/A

SECTION I.XV - SHORELINE STRUCTURES – VEGETATION REMOVAL, ACCESS POINTS, AND SHORELINE STABILITY (Env-Wt 313.03(c)(6))

Describe how the structures have been designed to avoid and minimize the removal of vegetation, the number of access points through wetlands or over the bank, and activities that may have an adverse effect on shoreline stability.

N/A

PART II: FUNCTIONAL ASSESSMENT
<p>REQUIREMENTS</p> <p>Ensure that project meets the requirements of Env-Wt 311.10 regarding functional assessment (Env-Wt 311.04(j); Env-Wt 311.10).</p>
<p>FUNCTIONAL ASSESSMENT METHOD USED:</p> <p>USACE Highway Methodology</p>
<p>NAME OF CERTIFIED WETLAND SCIENTIST (FOR NON-TIDAL PROJECTS) OR QUALIFIED COASTAL PROFESSIONAL (FOR TIDAL PROJECTS) WHO COMPLETED THE ASSESSMENT: BEN GRIFFITH, CWS # 298</p>
<p>DATE OF ASSESSMENT: JUNE 2020</p>
<p>Check this box to confirm that the application includes a NARRATIVE ON FUNCTIONAL ASSESSMENT:</p> <p><input checked="" type="checkbox"/></p>
<p>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:</p> <p><input checked="" type="checkbox"/></p> <p>Note: The Wetlands Functional Assessment worksheet can be used to compile the information needed to meet functional assessment requirements.</p>



AVOIDANCE AND MINIMIZATION
WRITTEN NARRATIVE
Water Division/Land Resources Management
Wetlands Bureau
[Check the Status of your Application](#)



RSA/ Rule: RSA 482-A/ Env-Wt 311.04(j); Env-Wt 311.07; Env-Wt 313.01(a)(1)b; Env-Wt 313.01(c)

APPLICANT'S NAME: NH Department of Transportation **TOWN NAME:** Rochester

An applicant for a standard permit shall submit with the permit application a written narrative that explains how all impacts to functions and values of all jurisdictional areas have been avoided and minimized to the maximum extent practicable. This attachment can be used to guide the narrative (attach additional pages if needed). Alternatively, the applicant may attach a completed [Avoidance and Minimization Checklist \(NHDES-W-06-050\)](#) to the permit application.

<p>SECTION 1 - WATER ACCESS STRUCTURES (Env-Wt 311.07(b)(1))</p> <p>Is the primary purpose of the proposed project to construct a water access structure?</p> <p>No, this is a toll conversion project.</p>
<p>SECTION 2 - BUILDABLE LOT (Env-Wt 311.07(b)(1))</p> <p>Does the proposed project require access through wetlands to reach a buildable lot or portion thereof?</p> <p>No, this is not a buildable lot development project.</p>
<p>SECTION 3 - AVAILABLE PROPERTY (Env-Wt 311.07(b)(2))*</p> <p>For any project that proposes permanent impacts of more than one acre, or that proposes permanent impacts to a PRA, or both, are any other properties reasonably available to the applicant, whether already owned or controlled by the applicant or not, that could be used to achieve the project's purpose without altering the functions and values of any jurisdictional area, in particular wetlands, streams, and PRAs?</p> <p><i>*Except as provided in any project-specific criteria and except for NH Department of Transportation projects that qualify for a categorical exclusion under the National Environmental Policy Act.</i></p> <p>This project will not impact more than 1 acre of wetlands, and none of the impacted wetlands are Priority Resource Areas. It is also an improvement to existing transportation facilities, so there are no alternative locations.</p>

SECTION 4 - ALTERNATIVES (Env-Wt 311.07(b)(3))

Could alternative designs or techniques, such as different layouts, different construction sequencing, or alternative technologies be used to avoid impacts to jurisdictional areas or their functions and values as described in the [Wetlands Best Management Practice Techniques For Avoidance and Minimization?](#)

The project includes the replacement/re-design of the toll plaza facilities, stormwater BMPs, and soundwall construction. The stormwater BMP southwest of the toll plaza was located/designed to avoid impacts to Wetland R-17 and perennial stream RS5. The construction slopelines at the toll facility were pulled in to avoid permanent impacts to intermittent stream RS8, however there will be temporary impacts to RS8 associated with the removal of three drainage pipe outfalls. All permanent wetland impacts associated with this toll conversion project are associated with the sound walls that will be constructed to the north and south of the toll facility where residences are close to the turnpike. Several alternative soundwall/berm designs (reducing the length at the sound wall ends) were considered to reduce wetland, stream and vernal pool impacts. Based on modeling, two alternatives that reduced impacts to wetland resources were rejected due to reduced noise mitigation for residential receptors. One alternative was accepted, which reduced permanent wetland impacts by approximately 2,281 sf without loss of noise mitigation. Additional small reductions in wetland impacts over the initial design reduced wetland impacts by another 780 sf for a total permanent impact reduction of approximately 3,070 sf.

SECTION 5 - CONFORMANCE WITH Env-Wt 311.10(c) (Env-Wt 311.07(b)(4))**

How does the project conform to Env-Wt 311.10(c)?

***Except for projects solely limited to construction or modification of non-tidal shoreline structures only need to complete relevant sections of Attachment A.*

The Department's Noise Policy requires the implementation of noise abatement measures which are found to be both feasible and reasonable in accordance with the policy. HNTB provided the Department with information regarding the two noise barriers which have been proposed in Rochester in association with the Dover-Rochester, 29440 project.

During final design it was determined that both of these barriers would have notable impacts to several different wetland systems, including one vernal pool, an intermittent stream and several forested wetlands. Alternative end points for both the northern and southern limits of the "northern barrier" (barrier RC) as well as the southern limit of the "southern barrier" (barrier RF) were evaluated to determine if the anticipated wetland impacts could be reduced or eliminated while still meeting the feasibility and reasonableness criteria found in the Department's noise policy. The functions and values of the impacted wetlands as well as the sensitivity of the noise receptors that are protected by the proposed soundwalls were both considered during the evaluation of soundwall design alternatives. It was determined that wetland/vernal pool impacts associated with the northern soundwall, minus an extension north of the sewer line easement, were offset by the noise mitigation for the nearby receptors. However, the the southern barrier (RF) could be shortened to reduce the largest single wetland impact without significantly increasing noise impacts to the adjacent receptors. This design change, as well as smaller design modifications along the project, reduced wetland impacts by 3,070 sf.

NH Department of Transportation
Natural Resource Agency
Meeting Notes

BUREAU OF ENVIRONMENT CONFERENCE REPORT

SUBJECT: NHDOT Monthly Natural Resource Agency Coordination Meeting

DATE OF CONFERENCE: December 16, 2020

LOCATION OF CONFERENCE: Virtual meeting held via Zoom

ATTENDED BY:

NHDOT

Sarah Large
Matt Urban
Andrew O’Sullivan
Ron Crickard
Mark Hemmerlein
Arin Mills
Samantha Fifield
Nancy Spaulding
Jon Evans
Chris Carucci
Meli Dube
Kirk Mudgett
Julius Nemeth
Bill Saffian
David Scott
Don Lyford
Joe Adams
Jennifer Reczek
Marc Laurin
Ron Kleiner
Tobey Reynolds
Mike Mozer
Bob Juliano

ACOE

Richard Kristoff
Mike Walsh

Federal Highway

Jaimie Sikora

EPA

Beth Alafat
Jeanie Brochi

NHDES

Lori Sommer
Karl Benedict
Eben Lewis
Stefanie Giallongo
Christian Williams
Ann Pelonzi

NH Fish & Game

Carol Henderson

NHB

Amy Lamb

The Nature Conservancy

Pete Steckler

US Coast Guard

Jeff Stieb
Donna Fischer

NOAA

Michael Johnson
Roosevelt Mesa

USFWS

Susi von Oettingen

**Consultants/ Public
Participants**

Rich Brereton
Kevin Ryan
Bill McCloy
Sean Sweeney
Bryson Welch
Lee Carbonneau
Ray Hanf
Dave Smith
Josif Bieja
Ed Weingartner
Stephanie Dyer-Carroll
Dan Hageman
John Stockton
Roch Larochele
Nicholas Caron
Alyson Eberhardt, UNH
Thom Marshall

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

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

- She will be interested in the duration of temporary impacts and will keep an eye on this when we circle back around once we have a better sense for the scale, nature and duration of proposed impacts to Mad River and wetlands

Rick Kirstoff (USACE):

- Recommended we circle back with USACE, NHDES, Lori when impacts are more in focus and we can discuss need for mitigation and possible approaches if required

Carol Henderson (NHF&G):

- Carol did not have any specific questions

Amy Lamb (NHNHB):

- Amy did not have any specific questions

Beth Alafat (US EPA):

- She will be interested in the type of high-performance waterproofing that will be used on the project; I'm assuming they will be looking for what is applied to the bridge deck.

Peter Steckler (TNC):

- Peter had no comments

Mike Mozer & Joe Adams (NHDOT):

- Mike and Joe did not have any specific questions at this time

USCG:

- Not present but Rebecca or Sarah can assist in how to provide the required notices

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

Dover-Rochester, #29440

Sarah Large introduced the project, listed agency participants, and invited the speakers to control the screen for the slide show presentation.

Ray Hanf of HNTB provided an overview of the project scope, project purpose, and project requirements. The scope includes the installation of all electronic tolling infrastructure to replace existing toll facilities on the Spaulding Turnpike in Dover and Rochester in desperate need of repair; construction of median concrete barrier, construction of water quality features and drainage systems, rehabilitation of pavement and construction of wood panel soundwalls. The purpose of the project is to reduce energy use and vehicle emissions, improve safety and mobility, replace deteriorated toll infrastructure and automate collection operations. Project requirements include mitigation of noise impacts, mitigation of wetland, stream and vernal pool impacts, and treatment of stormwater from project sites. Aerial photos showing project locations in both Cities were shown.

Lee Carbonneau provided an update of agency coordination status. The NH Division of Historical Resources requested inventory forms for the existing toll facilities in both locations, and this is being completed by NH Department of Transportation (NHDOT). There are no conservation lands in the project area. The only threatened or endangered species identified in the project area is the Northern Long-eared bat (NLEB). The IPAC on-line consultation with US Fish and Wildlife Service (USFWS) was completed

for NLEB for clearing of about 9 acres of forest in Rochester, and the 4D rule will apply to this project. There is no tree clearing in Dover. The City of Rochester has not responded to multiple outreach efforts requesting local mitigation ideas and other project input.

There are no impacts to jurisdictional wetlands, vernal pools or streams in Dover, but there will be approximately 35,000 square feet of work in the Protected Shoreland of the Bellamy River. A Permit by Notification is anticipated. Direct permanent impacts for sound wall construction in Rochester include approximately 32,298 square feet of permanent fill in nine wetlands, loss of one medium value vernal pool and impacts to four Tier 1 intermittent streams with a combined channel length of 369 linear feet. The wetland impacts are approximately 3,000 square feet less than the conceptual design impacts. There will also be a little over 7,000 square feet of temporary impacts at the toe of fill slopes for erosion and sedimentation controls and construction access.

The Cocheco River, a Designated River, is west of the Turnpike and will not be impacted, but one tributary stream and three impacted wetlands east of the Turnpike are within 1/4 mile of the River, so the draft wetlands application will be provided to the Local River Advisory Committee for review.

Ray Hanf provided details on the southern and northern soundwalls in Rochester. The southern soundwall is 3,750 feet long with height range of 10 to 14 feet. There are 121 total benefited dwellings, and 91 of these will have benefits of at least 7 dB. The northern soundwall is 2,400 feet long with height range of 10 to 17 feet. Total benefited dwellings for this wall is 108, with 84 of these benefitted by at least 7 dB. Ray described the typical soundwall section, including embankments, slope limits, soundwall and piers. He then went through the various soundwall design alternatives that were evaluated to balance the impact and mitigation of noise with the impacts and mitigation of wetland resources. Two alternatives for the south soundwall were evaluated through modeling. Alternative 1S reduced the soundwall berm by 200 linear feet and reduced wetland impacts by 2,080 square feet, with no loss of benefited noise receptors. This Alternative was selected. Alternative 2S reduced the soundwall and berm by 778 linear feet, with 22,140 square feet of wetland impact reduction. However, there were 33 lost benefited receptors with this alternative, which was considered unacceptable. Two northern soundwall alternatives were also considered. Alternative 1NS reduced the southern end of the soundwall berm by 166 feet in length, eliminating 326 linear feet of stream impacts and 2,059 square feet of wetland impacts. But five benefited receptors were lost. Alternative 1NN would reduce the northern end of the soundwall and berm by 297 feet, reduce wetland impacts by 8,516 square feet and eliminate 7,438 square feet of vernal pool impacts. However, there were also 31 lost benefited receptors. Neither alternative for the northern soundwall was selected due to substantial losses in noise mitigation benefits.

Culverts will be required on four of the eight streams delineated in Rochester due to soundwall construction. Streams flow east to west under the Turnpike toward the Cocheco River. Three Tier 1, intermittent streams will require culvert extensions, and one will require installation of a new culvert to allow for its conveyance under the soundwall. If one or more of these culverts cannot pass the 50-year storm, an Alternative Design Report will be submitted. Ray provided plan sheet excerpts for each stream crossing. One 30-inch and three 18-inch culverts are proposed. Ray also provided a plan showing temporary and permanent soundwall impacts to vernal pool RVP01. Lee described three photos of the vernal pool.

Ray quickly described the water quality features associated with both portions of the project, providing slides showing the locations of the proposed wet pond and gravel wetland treatment locations in Dover, and the proposed wet extended detention basin in Rochester. Additional treatment swales, six (6) in Dover and two (2) in Rochester, are also designed. Lee summarized the mitigation approach, which includes soundwalls for mitigating the identified noise impacts, and, as no local mitigation ideas were received from

Rochester, an Aquatic Resource Mitigation (ARM) fund payment for wetland, stream and vernal pool impacts. Temporary Impacts to wetlands will be restored with a wetland seed mix of native species. The current ARM fund estimate is just under \$450,000, although secondary impacts are still being discussed with the US Army Corps of Engineers (USACE) and the NHDOT.

Ray provided the anticipated construction cost estimate of \$18.75 million, which includes \$5.5 million for soundwalls. The proposed advertisement date for construction bids is May 2021, and construction is expected from late summer 2021 through late spring 2023.

Sarah began the roll call request for comments/questions:

Karl Benedict wanted to know if every opportunity to avoid and minimize impacts to the vernal pool was investigated, including other types of soundwalls or other possible soundwall configurations. He noted that the Alteration of Terrain rules need to be met for water quality treatment. Karl also suggested that if there is forested wetland conversion, this should be identified and discussed with the USACE.

Stephanie Giallongo noted that the Bellamy River's Protected Shoreland in Dover should be measured from the highest observable tideline, and it looks like the edge of water might have been used as the reference line instead. If so, the Protected Shoreland could shift. She also noted that if the project impacts floodplain wetlands along the Cocheco River, these would need to be identified as Priority Resource Areas. She agreed with Karl that vernal pool impact avoidance and minimization should be thoroughly demonstrated.

Lori Sommer mentioned that the presentation was very thorough, and asked if other vernal pools were identified in the project area. Lee responded that field investigations were confined to the Turnpike right-of-way and no other vernal pools were observed in Rochester. One vernal pool was identified north of the project area in Dover, but will not be affected by the project. Lori inquired as to the inclusion of the pipe extensions in the impacted stream length, Lee confirmed that all impacted lengths of the streams have been included. Lori said that an ARM fund payment will be reasonable mitigation for the project.

Carol Henderson said that the Alteration of Terrain project rules requiring wildlife surveys will apply to this project. She also asked about wildlife connectivity and movement across the Turnpike, and the possibility of having gaps in the soundwalls and median concrete barriers. Lee noted that this was discussed with NHDOT, and the height of the median is the minimum to meet AASHTO standards, and these standards do not allow for gaps in the median barrier. There is a gap between the north and south soundwalls, however. Ray added that south of the toll plaza, a guardrail is the median barrier, not a concrete wall.

Amy Lamb noted that there are no Natural Heritage database records, and had no comments.

Rick Kristoff stated he had no comments at this time.

Beth Alafat suggested that the soundwall impact analysis be put in a table. She also agreed with Karl that alternative soundwall designs should be investigated. The vernal pool will not be viable after construction, and the temporary vernal pool impacts should be considered permanent.

Pete Steckler was glad to know there is a gap between the north and south soundwalls. He asked if it was feasible to construct the portion of the soundwall in the vernal pool on posts over the water to minimize impacts. Only the posts would directly impact the pool, and animals could move freely in the water. Jon Evans stated that the project team has spent a lot of time looking at sound barrier options that are reasonable and still meet the required noise barrier criteria. Mitigation costs were considered in these analyses. Very poor soils along the length of the northern soundwall, including where the vernal pool is

located will require a solid earth berm to support the wall, and therefore posts will not suffice. He also noted that elevating the wall on posts to limit impacts to the vernal pool would not be an option as this would leave a gap at the bottom of the wall which would negate any of the noise reduction benefits from that section of the wall. Similarly, any linear breaks in the wall would also let noise through, defeating the noise mitigation value of the wall. Jon noted that there really are no other alternatives to avoiding or minimizing the wetland impacts associated with these walls other than shortening the ends of the walls as was noted during the presentation.

Andy O'Sullivan asked Karl if the impacted streams could be included in a single alternative stream crossing report, and Karl responded that as long as the linear and areal impacts are included, and each stream is described separately and is individually identifiable, they can be included in one report.

This project was previously discussed at the 8/19/2020 Monthly Natural Resource Agency Coordination Meeting.

Meredith, #42912 (X-A004(991))

Chris Carucci, NHDOT Bureau of Highway Design, introduced the project and provided a description of the project location, existing conditions, project purpose and need and proposed alternatives. The purpose of the meeting was to review the project area and existing resources and to receive feedback on the proposed alternatives and potential impacts. The project is federally funded and is slated to advertise in August 2021 with anticipated construction in 2022. The purpose of the project is to address structural deficiencies at an existing 178' x 90" structural metal plate culvert carrying an unnamed stream under NH Route 104 just south of the intersection of Corliss Hill Road and Hatch Corner Road in the Town of Meredith. The crossing is a Tier 3 crossing with a 1.72 square mile drainage area. The culvert currently has a concrete headwall at the inlet and is mitered at the outlet with concrete support walls with a maximum of 18' of cover at the centerline of NH Route 104. The need for this project is demonstrated by the deterioration of the existing pipe which is demonstrated by voids along the invert and lower sides, as well as several detached or missing sections of invert. The pipe has separated from the headwall and has significant change in shape in some places. There are also large sinkholes in the roadway embankment near the inlet and outlet. This culvert is currently statewide priority #2 based on fill height, traffic volume and is at high risk of further deformation and structural failure. The Department aims to avoid this, as NH Route 104 is a high volume road and is one of the three major regional routes connecting Interstate 93 to the Lakes Region and western White Mountains. Structural failure of the culvert would have significant impacts on the traveling public, local commerce and tourism.

The current crossing has a 2.98% slope, does not have a history of flooding and is capable of passing the 100-year flow. The stream is not perched and is in generally good condition with no significant bank erosion or sediment deposition. There is a small waterfall just upstream formed by a bedrock outcrop and the next culvert upstream, which is town owned, has a substantial perch. There is a large ponded wetland farther upstream which feeds the unnamed stream. The unnamed stream is a tributary to Lake Winnisquam which is located 1.85 miles downstream of the project with only one other crossing, a state-owned bridge, in between. There is also a small forested wetland adjacent to the culvert inlet and an intermittent stream on the east side of the outlet header which carries water from a State owned 24" culvert crossing underneath Corliss Hill Road.

A stream assessment was completed in May of 2020. The stream is a Rosgen Type B with highly variable bankfull widths averaging 20.75' near the 90" culvert. A bankfull width of 12.8' was determined for the reference reach which was located upstream of the waterfall and the perched culvert crossing under Hatch Corner Road described above. An entrenchment ratio of 1.4 was used to set a compliant span of 18'. The

BUREAU OF ENVIRONMENT CONFERENCE REPORT

SUBJECT: NHDOT Monthly Natural Resource Agency Coordination Meeting

DATE OF CONFERENCE: August 19, 2020

LOCATION OF CONFERENCE: John O. Morton Building

ATTENDED BY:

NHDOT

Sarah Large
Matt Urban
Ron Crickard
Mark Hemmerlein
Jon Evans
Meli Dube
John Sargent
Jason Tremblay
Marc Laurin
Maggie Baldwin
Kathy Corliss

ACOE

Mike Hicks

EPA

Beth Alafat
Jeanie Brochi

**Federal Highway
Administration**

Jaimie Sikora

NHDES

Lori Sommer
Karl Benedict

NHB

Amy Lamb

NH Fish & Game

Carol Henderson

**Consultants/ Public
Participants**

Raymond Hanf
David Smith
Lee Carbonneau
Stephen Hoffmann
Christine Perron
Samuel White
Jennifer Zorn
Seth Hill
Jennifer Riordan

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

Finalize Meeting Minutes.....	2
Dover-Rochester, #29440.....	2
Lee, # 41322 (X-A004(593)).....	4
Plaistow-Kingston, #10044E (X-A000(378))	7

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

NOTES ON CONFERENCE:**Finalize Meeting Minutes**

Finalized and approved the July 15, 2020 meeting minutes.

Dover-Rochester, #29440

Sarah Large introduced the project and invited the speakers to control the screen for the slide show presentation.

Ray Hanf of HNTB provided an overview of the project scope which includes the installation of all electronic tolling infrastructure to replace existing toll facilities on the Spaulding Turnpike in Dover and Rochester in desperate need of repair. The old equipment will be demolished and a new single overhead gantry installed at each location. Median concrete barrier will be installed, closed system drainage in conjunction with water quality treatment features (gravel wetlands) will be implemented at both locations, as well as additional features to address water quality in areas outside of those that are directed to the gravel wetlands. Both project locations are in MS4 communities. The roadway pavements will be replaced or rehabilitated, depending upon the existing condition and future traffic volumes. Two soundwalls will be constructed at the Rochester site, each along the northbound barrel. The southerly soundwall will begin almost 0.5 miles south of the existing toll plaza, just to the south of the Tebbetts Road overpass and continue southerly for 3,550'. The northerly soundwall will begin approximately 0.25 miles north of the existing toll plaza and continue for 2,400'.

The project goals include transition to new toll collection operations and replacement of outdated infrastructure. The benefits of these improvements are reduced energy use and vehicle emissions, improved traveler safety and mobility, replacement of deteriorated toll infrastructure, and automation of toll collection operations. Slides showing the Dover and Rochester project locations on the Spaulding Turnpike were presented, highlighting existing toll facility locations and the proposed sound walls in Rochester north and south of the toll plaza. In Dover, three lanes will be continued through the new toll zone then reduced to two lanes. Two lanes only will be constructed at the Rochester site.

Lee Carbonneau provided an overview of the current status of agency coordination and noted that while the project is not aware of impacts to historical resources at this time, further coordination is expected as well as attendance at a cultural resource agency meeting in the future. There are no impacts expected to conservation lands or floodplains in Dover or Rochester. Outreach letters have also been sent to city officials soliciting concerns and mitigation approaches.

Only one threatened or endangered species, the northern long-eared bat, was reported for the project. There is potential for summer roosting at toll plaza facilities in both locations and trees will be cleared in Rochester for sound wall construction. Approximately 3.5 acres of clearing is expected. The project expects to use the 4(D) rule key in the US Fish and Wildlife Service consultation process.

There are no jurisdictional wetlands or streams in Dover, but there will be approximately 35,000 sf of paving and earthwork in protected shoreland of the Bellamy River. A Permit by Notification is anticipated. Direct permanent impacts for sound wall construction in Rochester include approximately 35,400 square feet of fill in nine wetlands, loss of one medium value vernal pool and culverting 326 linear feet of four Tier 1 intermittent streams. A preliminary ARM fund estimate for direct, permanent impacts is approximately \$450,000. Temporary and secondary impacts have not yet been quantified. Additional detail was provided for the vernal pool bisected by a sound wall, and impacts to intermittent Stream RS2, which parallels the sound wall. There are also resource impacts within ¼ mile of the Cocheco River, a Designated River, so coordination with the Local River Advisory Committee will be necessary.

Applicable water quality regulations were noted and proposed stormwater BMPs were discussed. Three gravel wetlands will be constructed in Dover, and one gravel wetland will be constructed in Rochester. Subsequent to the meeting, Mark Hemmerlein, the Department's Water Quality Program Manager who was in attendance at the meeting, indicated in a follow up e-mail that while the gravel wetlands may be more appropriate in Dover as the receiving waterbodies are estuaries, they may not be the best treatment measure in Rochester. Mark suggested that the use of wet extended detention basins may be more appropriate in Rochester from the cost, effectiveness and long term maintenance perspectives. Impervious surfaces in Dover will increase by about 17,000 square feet, and will decrease by approximately 60,000 square feet in Rochester.

Ray provided the proposed schedule for the project. The advertising date is February 2021, with construction starting in spring 2021 and completed in November 2022. The meeting was opened up for questions. Sarah began the roll call request for comments/questions:

Karl Benedict suggested that the project goals include the benefit of the sound walls, as these will have the greatest resource impact. He emphasized that a thorough discussion of vernal pool and stream impact avoidance will be essential in the wetland permit application. Karl asked if the northern sound wall could be shortened to Station 908+50 to avoid the vernal pool, and Ray discussed the tradeoffs with noise protection for two benefactors and four receptors. Karl also asked if Stream RS2 could be relocated in the ROW instead of placed in a culvert under the sound wall foundation. Ray noted that this option was considered, but there was no room to re-establish an open channel at the toe of slope. Karl also noted that access and construction impacts have not been accounted for, and Lee concurred. Karl noted that the wetland impacts are approaching 1 acre, therefore a public hearing and longer review times may apply.

Lori Sommer noted that the vernal pool impacts appear to be addressed adequately, and asked the project team to consider relocating egg masses or tadpoles to an alternative vernal pool prior to construction. She suggested that perhaps the City Concrete site might be appropriate. She also noted that any additional clearing in wetlands for sound wall construction would be considered a secondary or temporary impact, and that the project team should reach out to the US Army Corps for guidance on mitigating those impacts. Lori also offered to review any local mitigation projects that the City of Rochester may suggest.

Carol Henderson also voiced concern for the vernal pool impacts, and asked if the wall could be shifted to avoid running right down the middle of the pool. Ray described alternative wall alignments that were considered and indicated the presence of an important exit ramp sign with a concrete base that makes shifting the wall closer to the Turnpike difficult. Carol also mentioned that the median concrete barriers impede wildlife crossings, and recommended that the installation be minimized to what is necessary only, be the minimal possible height and have gaps if possible. Lee noted that the sound walls will also impede wildlife movements across the Turnpike, but there may be opportunities to modify the median in the gap between the northern and southern walls so wildlife can cross the Turnpike.

Amy Lamb had no comments.

Beth Alafat also mentioned the need to avoid and minimize impacts, to be specific about the alternatives considered, and to develop the goals into a statement of project purpose. She asked if there was an alternative noise barrier to wall construction, or if the design could be altered to reduce impacts. Beth also supported the relocation of vernal pool species to a safe location as suggested by Lori.

It was noted that the USACE is the lead federal agency, not FHWA, and Jamie Sikora had no comments on the project.

Jon Evans noted that although this is not a federal project, the DOT will still comply with NEPA, and NEPA treats sound as an environmental resource. The sound wall mitigates sound impacts, and altering the configuration or location needs to be balanced with the impacts to other natural resources.

Jeannie Brochi asked when the project might come back to the natural resource agency meeting, and Ray replied that it might be as early as September or possibly October.

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

Lee, # 41322 (X-A004(593))

Stephen Hoffmann reintroduced the Lee 41322 project involving the replacement of the structure carrying NH Route 125 over the Little River. The project was last presented at the October 2019 Resource Agency Meeting. The purpose of this meeting was to discuss the results of the stream assessment that was completed in November 2019 and revisit the alternatives analysis that was introduced at the meeting previously attended. Additional input from the Resource Agencies is being sought for consideration in the alternatives analysis prior to selecting a preferred alternative.

The purpose/need of the project is to address the serious condition of the existing 18' wide x 12' high corrugated metal pipe (CMP) which is on the State Red List, the undesirable approach alignment of the existing bridge, and the undersized hydraulic opening of the existing bridge.

The project has been progressing slowly due to delays in scheduling public meetings. However, a public officials meeting is tentatively planned for October 2020, with a public informational meeting to follow. The project is scheduled to advertise in 2022, with permitting likely getting underway sometime in 2021.

A stream assessment was completed in November 2019. The drainage area at the bridge is 18.4 square miles, making this a Tier 3 stream crossing. The average measured bankfull width is 32 feet. The average entrenchment ratio is 2.5 at the crossing and 3.1 along the reference reach. Based on the results of the stream crossing assessment and the Rosgen Stream Classification System, the Little River at the crossing location is a C5 stream channel. According to the NH Stream Crossing Guidelines, Type C channels have high entrenchment ratios (>2.2) and therefore commonly access well developed floodplains to accommodate high flow stages, are typically sinuous with low slopes, and commonly consist of riffle/pool sequences (not the case with the Little River). According to the Rosgen Classification System, C5 channels have a very high sensitivity to disturbance, fair recovery potential, very high sediment supply, very high streambank erosion potential, and very high vegetation controlling influence. These characteristics are consistent with the field observations of the Little River in the vicinity of the project area. The two major concerns with Type C channels are channel stability and lateral extension.

Photos and aerial imagery of the structure and the Little River were reviewed to highlight existing conditions, including the skew of the upstream section of river to the existing structure and the scoured condition of the outlet. Resources identified to date include a Zone A 100-year floodplain and floodplain wetlands adjacent to a Tier 3 crossing (Priority Resource Areas identified by the NHDES Wetland Permit Planning Tool). The Little River is part of the Lamprey River watershed Designated River system. A rare plant survey is scheduled to be completed this summer for tufted loosestrife, which is known to occur nearby, and small whorled pogonia, which could occur in this county. There are known records of American eel and Blanding's turtle in the vicinity of the project. NH Fish & Game has recommended a time of year restriction for in water work from April 15-July 1.



**PERMITTEE RESPONSIBLE
MITIGATION PROJECT WORKSHEET**
Water Division/Land Resources Management
Wetlands Bureau
[Check the Status of your Application](#)



RSA/Rule: 482-A: / Env-Wt 800

SECTION 1. PROPOSED PERMITTEE RESPONSIBLE MITIGATION PROJECT TYPE					
UPLAND BUFFER PRESERVATION: <input type="checkbox"/> AQUATIC RESOURCE RESTORATION: <input type="checkbox"/> MITIGATION PAYMENT: <input checked="" type="checkbox"/>					
SECTION 2. PROPOSED MITIGATION PROJECT LOCATION INFORMATION (if applicable)					
STREET/ROAD: N/A		TOWN/CITY:		TAX MAP/LOT #:	
SECTION 3. APPLICANT INFORMATION					
APPLICANT NAME: NH Department of Transportation, Bureau of Turnpikes					
APPLICANT MAILING ADDRESS: PO Box 2950, Concord, NH 03302					
CONTACT INDIVIDUAL: Nancy Spaulding					
DAYTIME TELEPHONE: 603 485-3806			EMAIL (IF ANY): Nancy.L.Spaulding@dot.nh.gov		
SECTION 4. RESOURCE WORKSHEET SUMMARY					
AQUATIC RESOURCES INVOLVED IN PROJECT: See Table Below.					
TOTAL PRESERVATION PROPOSED:		Upland:	Acres	Wetland:	Acres
TOTAL LENGTH OF STREAM ON PROPERTY:		Linear Feet	% having 100-ft wooded zone:	in	direction
% upland:				in	direction
# CONFIRMED VERNAL POOLS:			# POTENTIAL VERNAL POOLS:		
AREA OF WETLAND RESTORATION PROPOSED:		acres	AREA OF WETLAND CREATION PROPOSED:		acres
AREA OF WETLAND ENHANCEMENT PROPOSED:		acres	AREA OF UPLAND ENHANCEMENT PROPOSED:		acres
SECTION 5. BRIEF NARRATIVE DESCRIBING PROPOSED PERMITTEE RESPONSIBLE MITIGATION					
ARM Fund Payment -see attachments					
SECTION 6. SIGNATURE AND CERTIFICATION					
<p>- I hereby certify that:</p> <ul style="list-style-type: none"> ▪ The information contained in or otherwise submitted with this application is true, complete, and not misleading to the best of my knowledge and belief; <p>- I understand that:</p> <ul style="list-style-type: none"> - Submitting false, incomplete, or misleading information is grounds for denying the application or revoking any award of ARM Funds that is made based on such information; and - I am subject to the penalties for making unsworn false statements specified RSA 641:3 or any successor New Hampshire statute. 					
SIGNATURE: _____				DATE: ____ / ____ / ____	

Summary of Aquatic Resource(s) Involved in Project

The following information is required to be provided about the aquatic resources found on the proposed impact site and the mitigation site. New Hampshire RSA 482-A:3 requires a wetland permit for any proposed project that involves dredging and filling wetlands or impacts to the bed or bank surface waters such as rivers and streams. Before NHDES will issue a permit, applicants must demonstrate that their project proposal will avoid adverse impacts to aquatic resources and will minimize and mitigate those impacts that are unavoidable. When impacts to aquatic resources are unavoidable, applicants must identify the wetland and stream(s) resource types that will be lost during the development of the project. Identifying the functions and values of the aquatic resource that will be lost at the project site better ensures that they can be recreated and transferred to the proposed mitigation site. Please use the table formats provided below to document all aquatic resources types on the impact site and the mitigation site. A separate table should be prepared for each site. *Additional rows may be required for projects proposing impacts to multiple resource types.*

Wetland Resources: Wetlands shall be classified by US Fish and Wildlife Service Manual WS/OBS-79/31 Classification of Wetlands and Deepwater Habitats of the United States, Cowardin et al, 1979, reprinted 1992.

Stream Resources: For permittee responsible mitigation projects to restore or improve stream systems, the streams on the project site shall be reviewed and the following information collected to the best extent possible:

Stream order according to New Hampshire Hydrography Dataset (NHHD)	Geomorphology including degradation
Rosgen stream type	Position within the surrounding landscape
Impacts to upstream and downstream flooding	Connectivity improvement for aquatic organism passage
Stream bed materials	Fisheries presence
Sediment Transport capacity	Characterization of the adjacent buffers in terms of vegetative coverage
Channel form	Floodplain connectivity

These general principals are described within the [New Hampshire Stream Crossing Guidelines](#), University of New Hampshire, May 2009.

See Attached Wetland Mitigation Report for details.

Wetland Functions & Values: A wetland evaluation is the process of determining the values of a wetland based on an assessment of the functions it performs. The evaluation of wetland functions and values should be determined through use of the [Method for Inventorying and Evaluating Freshwater Wetlands in New Hampshire](#), 2015 edition (2015 NH Method) –OR– U.S. Army Corps of Engineers (USACE) New England District [Highway Methodology Workbook Supplement](#), 1999 edition (1999 US ACE Highway Workbook Supplement). The evaluation should focus on the following:

Ecological Integrity (EI), Wetland-Dependent Wildlife Habitat (WH), Fish and Aquatic Habitat (FH), Scenic Quality (SQ), Educational Potential (EP), Wetland-based Recreation (WR), Flood Storage (FS), Groundwater (GW), Sediment Trapping (ST), Nutrient Trapping/Retention/Transformation (NT), Shoreline Anchoring (SA), Notworthiness (NW).

Secondary Impacts: The [USACE federal mitigation guidance](#) should be consulted if the project involves conversion of forested wetlands to scrub-shrub or emergent wetlands, cutting of riparian buffer and impacts within the buffer to vernal pools.

WETLAND/STREAM RESOURCE SUMMARY

Wetland ID or Stream Number	Cowardin Wetland Class (list all that apply) or Stream Type	Principal Functions & Values	Project Impacts					Vernal Pool Present? ID or Number	Other Comments
			Permanent Wetland (sq.ft.)	Permanent Stream Bank (lin.ft.)			Temporary (sq.ft.)		
	Bank Left	Bank Right		Channel					

MITIGATION RESOURCE SUMMARY

Wetland ID or Stream Number	Cowardin Wetland Class (list all that apply) or Stream Type	Principal Functions & Values	Wetland/Stream Resources			Vernal Pool Present? ID or Number	Other Comments
			Area of Wetland (sq.ft. or acres)	Streams (lin.ft.)			
				Length on Property	% having 100 foot wooded zone		

Wetland Mitigation Report
and
ARM Fund Calculations

Dover-Rochester All Electronic Tolling Wetland Mitigation Report

NHDOT Project #29440

Prepared For

HNTB Corporation
340 County Road Suite 6-c
Westbrook, Maine 04092

And

NH Department of Transportation
Bureau of Turnpikes
36 Hackett Hill Rd
Hooksett, NH 03106

Prepared By

Normandeau Associates, Inc.
25 Nashua Road
Bedford, NH 03110
603-472-5191

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February 4, 2021

1.0 Project Overview

The Dover-Rochester All Electronic Tolling (AET) project (the Project) will replace the existing (original) toll plazas on the Spaulding Turnpike/NH Route 16 in Dover and Rochester with an all-electronic toll system. All electronic tolling allows for the electronic collection of tolls at highway speed without requiring vehicles to stop or slow in order to pay the toll as is the case at the existing conventional toll plazas. The necessary E-ZPass infrastructure would be installed on a full span toll gantry which would be placed over the highway at both locations.

The Rochester portion of the project would also include two new sound walls near residential developments on the eastern side of the turnpike north and south of the toll plaza. The construction of these sound walls is consistent with NHDOT protocols where receptors have noise impacts above the FHWA/NHDOT 66 decibel (dB) threshold. The northern sound wall would be just under ½ mile long and the southern sound wall would be approximately 2/3 mile long. Construction of the sound walls in Rochester will extend into previously undeveloped areas and permanently impact 32,298 sf in nine forested wetlands and 369 lf of four Tier 1, intermittent streams. One of the wetlands contains a medium value vernal pool, and the fill, expected to cover more than ½ of the pool, is expected to eliminate the vernal pool functions. There are no jurisdictional wetland impacts in the Dover portion of the project.

2.0 Wetland/Stream/Vernal Pool Mitigation

These wetland impacts in Rochester (after avoidance and minimization efforts) would exceed the 10,000 sf wetland fill threshold and the 200 lf stream impact threshold for mitigation per Env-Wt 313.04. As required by wetland rules Env-Wt 801.03, the City of Rochester Conservation Commission Chairman and Community Planner were contacted several times for information on local mitigation project priorities that might match the impacted resource functions/types that would occur for this Project, but no responses were received (see attachment). As no projects were identified by Rochester officials, a payment to the Aquatic Resource Mitigation (ARM) Fund will provide mitigation for natural resource impacts. This approach was agreed to by Lori Sommer of NHDES in the December 16, 2020 Natural Resource Agency Meeting.

The ARM fund quantities associated with the project area summarized in Table 1 and ARM fund calculator printouts are attached. ARM fund calculations are provided for direct, permanent impacts to wetlands (including the vernal pool) and the linear channel length of the impacted intermittent streams. In addition, the project was evaluated for secondary effects per Part 230—Section 404(b)(1) Guidelines. Secondary effects are defined in § 230.11 (H) as “..effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material.” The New England Division of the US Army Corps of Engineers’ 2016 Mitigation Guidance identifies and provides mitigation ratios for several types of secondary wetland impacts. The guidance suggests that the loss of one medium value vernal pool, a secondary impact, is the equivalent of 39,000 sf of wetland impact, and this value was also entered into the ARM fund calculator.

Secondary wetland impacts can also include temporary impacts and “edge effects” beyond the fill placed in a wetlands. The unavoidable permanent wetland fill for sound wall foundation berms is not expected to measurably change the character of temporarily impacted areas or the remaining wetlands inside or outside of the Turnpike ROW for the following reasons:

- Best Management Practices, including erosion and sedimentation controls along the toe of slopes will prevent wetland soil rutting and sedimentation during construction, and the berms will be stabilized with vegetation to prevent future erosion and sedimentation;
- The temporary impacts for access and along the toe slope will have any temporary fill removed, will be graded to pre-construction grades, and will be seeded with wetland seed mix and allowed to revegetate with woody plants, unless in the mowed ROW.
- Stream flow and natural drainage patterns will be maintained with culverts under the soundwalls;
- Stormwater BMPs will improve water quality in the general watershed area;
- With the exception of the vernal pool, the affected wetlands do not have significant aquatic habitat values; and
- Wetland vegetation more than 5-feet beyond the east side of the soundwall berms will not be altered.

For this reason, no additional secondary effects are anticipated, and no additional secondary impact mitigation is proposed.

Table 1. ARM Fund Summary

Resource	Impact Quantity	In Lieu Fee Estimate	Assumptions
All Wetlands	32,298 sf	\$158,020.23	Includes direct impacts to wetlands/vernal pools in accordance with NHDES Rules Wt 800.
Vernal Pool Loss	39,000 sf	\$190,809.89	Mitigation for functional loss of 1 medium value vernal pool based on ratios recommended in 2016 USACE Mitigation Guidance
Streams	369 lf	\$101,117.81	Impacts to channels of 4 intermittent streams in accordance with NHDES Rules Env-Wt 800.
TOTAL		\$ 449,947.93	

Table 2 provides a summary of the functions and values of the wetlands and streams that will be impacted by the project. This table format is consistent with NHDES Form NHDES-w-06-045.

Wetland or Stream ID	Cowardin Wetland Class/ or Stream Type	Functions & Values (Principal in Bold)*	Table 4. Project Impacts						Vernal Pool Present? ID or #	Other Comments
			Permanent Wetland Impact (sq. ft.)	Permanent Stream Impact (linear ft)			Temporary (sq. ft.)	Secondary (sq. ft.)		
				Bank Left	Right Bank	Channel				
RW1	PFO1E	GW,FF,NR	40				102			
RW4	PFO1B	GW,ST,NR	1420				78			
RW6	PFO1E	GW,FF,	896				17			
RW7	PFO1E	ST	659				1,512			
RW8	PFO1E	FF,ST,	1,115				825			
RW9	PFO1E	FF,NR,PE,WH	8,769				5196	39,000	RVP1 Med Value VP loss	
RW13	PFO1E	GW,FF,ST	8,782				0			
RW14	PFO1E	FF,ST	1,487				94			
RW15	PFO1E	FF,ST	9,513				259			
RS2	R4SB4	GW		n/a	n/a	208				
RS3	R4SB4	GW		n/a	n/a	21				
RS4	R4SB4	GW		n/a	n/a	67				
RS7	R4SB4	GW		n/a	n/a	73				
RS8	R4SB4	GW		n/a	n/a	0	85			

*GW=Groundwater Recharge/Discharge; FF=Floodflow Alteration; ST=Sediment/Toxicant Retention; NR=Nutrient Retention/Transformation; PE=Production Export; WH=Wildlife Habitat

ARM Fund Calculation Sheets

**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 =		32298.00
			43560.00
	Acres of impact =		0.7415
2	Determine acreage of wetland construction:		
	Forested wetlands:		1.1122
	Tidal wetlands:		2.2244
	All other areas:		1.1122
3	Wetland construction cost:		
	Forested wetlands:		\$107,521.20
	Tidal Wetlands:		\$215,042.40
	All other areas:		\$107,521.20
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:		21725
	Forested wetlands:		\$24,162.33
	Tidal wetlands:		\$48,324.66
	All other areas:		\$24,162.33
5	Construction + land costs:		
	Forested wetland:		\$131,683.53
	Tidal wetlands:		\$263,367.06
	All other areas:		\$131,683.53
6	NHDES Administrative cost:		
	Forested wetlands:		\$26,336.71
	Tidal wetlands:		\$52,673.41
	All other areas:		\$26,336.71
*****	TOTAL ARM PAYMENT*****		
	Forested wetlands:		\$158,020.23
	Tidal wetlands:		\$316,040.47
	All other areas:		\$158,020.23

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**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 =		39000.00
			43560.00
	Acres of impact =		0.8953
2	Determine acreage of wetland construction:		
	Forested wetlands:		1.3430
	Tidal wetlands:		2.6860
	All other areas:		1.3430
3	Wetland construction cost:		
	Forested wetlands:		\$129,832.40
	Tidal Wetlands:		\$259,664.79
	All other areas:		\$129,832.40
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:		21725
	Forested wetlands:		\$29,175.85
	Tidal wetlands:		\$58,351.69
	All other areas:		\$29,175.85
5	Construction + land costs:		
	Forested wetland:		\$159,008.24
	Tidal wetlands:		\$318,016.49
	All other areas:		\$159,008.24
6	NHDES Administrative cost:		
	Forested wetlands:		\$31,801.65
	Tidal wetlands:		\$63,603.30
	All other areas:		\$31,801.65
*****	TOTAL ARM PAYMENT*****		
	Forested wetlands:		\$190,809.89
	Tidal wetlands:		\$381,619.78
	All other areas:		\$190,809.89

**NHDES AQUATIC RESOURCE MITIGATION FUND
STREAM PAYMENT CALCULATION**

INSERT LINEAR FEET OF IMPACT on BOTH BANKS AND CHANNEL	Right Bank	
	Left Bank	
	Channel	369.0000
	TOTAL IMPACT	369.0000
	Stream Impact Cost:	\$84,264.84
	NHDES Administrative cost:	\$16,852.97
***** TOTAL ARM FUND STREAM PAYMENT*****		
		\$101,117.81

City of Rochester
Mitigation Outreach Correspondence



May 28, 2020

Michael Dionne
Conservation Commission Chair
31 Wakefield Street
Rochester, NH 03867

Re: Dover-Rochester All Electronic Tolling Project, #29440

Dear Mr. Dionne:

The NH Department of Transportation (DOT) is planning the Dover-Rochester All Electronic Tolling Project, which would entail removing the existing Spaulding Turnpike toll plazas on the Spaulding Turnpike (NH 16) in Dover and Rochester, and constructing new toll facilities incorporating All Electronic Tolling (AET). In Rochester, the project would include carrying two (2) travel lanes in each direction through the plaza but would be designed to accommodate three lanes in the future. It is anticipated that the design would include the installation of two soundwalls on the northbound side of the Turnpike in proximity to the Rochester Toll Plaza. Median concrete barrier and drainage installations/ enhancements would also be constructed in association with this effort. Please see the attached project location map.

Some transportation projects require mitigation for possible wetland/stream impacts. The natural resources in this project area have not yet been identified and investigations are forthcoming. Preliminary engineering studies have begun and the Department will attempt to avoid and minimize impacts through design before determining if there will be any stream or wetland impacts that may require mitigation. **As a proactive measure the Department would like to request a list of the City's preferred/priority mitigation efforts that the Department may evaluate and consider undertaking if it is determined that the project does in fact require mitigation. Please let us know if your City has identified such priorities.** In the absence of any City priorities to evaluate, the Department will pursue permittee responsible mitigation through the Stream Passage Improvement Program (SPIP). If it's determined that no viable options exist through the SPIP, the Department will pursue a payment into the Aquatic Resource Mitigation Fund (ARM Fund), at which time those funds will become competitively available through the ARM fund grant process.

Engineering studies have been initiated to refine the scope and limits of work necessary for this project. The Department's Bureau of Environment is in the process of evaluating the potential environmental impacts associated with the project. To assist in this evaluation, I am asking that you provide comments relative to the project's potential impacts on environmental, social, economic or cultural resources, by responding to the following questions.

1. Does the City have a list of priority mitigation efforts (Top 10 Priority List) that the DOT may evaluate and consider undertaking if it is determined that the project does in fact require mitigation? If so, please provide the list. (e.g. problematic culvert/bridge crossings, land protection, habitat restoration, etc.)
2. Are there any existing or proposed community or regional plans that might have a bearing on this project?



3. Are there any natural resources of significance in the vicinity of the project? (e.g. prime wetlands, floodplains, rare species, etc.) Are there any known wildlife corridors or habitat strongholds in the vicinity of the project?
4. Are there any cultural resources of significance in the vicinity of the project? (e.g. stonewalls, cemeteries, historical or archeological resources, etc.) *Please note that Section 106 of the National Historic Preservation Act offers those that possess a direct interest in historical resources, including municipal officials, Historical Societies, and Historical Commissions, an opportunity to become more involved in an advisory role during project development as "Consulting Parties." Those interested should contact the Department.*
5. Are there any public parks, recreation areas, conservation lands, or wildlife/waterfowl refuges in the vicinity of the project? Have Land & Water Conservation Funds been used in the project area?
6. Are there any locally or regionally significant water resources or related protection areas in the project vicinity? (e.g. public water supplies, wellhead protection areas, aquifer protection districts, etc.)
7. Are there any water quality concerns that should be addressed during the development of this project? (e.g. stormwater management, NPDES Phase II, impaired waters, etc.)
8. Are you aware of any existing or potential hazardous materials or contaminants in the vicinity of the project? Are there asbestos landfills or asbestos containing utility pipes located within the project limits?
9. Do you have any environmental concerns not previously noted (e.g. noise impacts, farmland conversion, etc.) that you feel the Department should be aware of for this project?
10. Will the proposed project have a significant effect upon the surrounding area? If so, please explain.
11. Are you aware of any existing roadside populations of non-native invasive plant species (such as Japanese knotweed, phragmites, or purple loosestrife) in the project area?

This letter has been sent to the following departments, boards, and/or commissions:

- Mayor
- Planning Board
- City Manager
- Fire Department/Emergency Management Director
- Public Works Director
- Police Department
- City Planner
- City Engineer
- Conservation Commission
- Historic District Commission
- Historical Society



The tentative advertising date for this project is February 2021. Please feel free to contact me at lcarbonneau@normandeau.com or (603) 637-1150 if you have any questions, information, or concerns regarding the above referenced project. Thank you for your assistance.

Sincerely,

A handwritten signature in black ink that reads "Lee E. Carbonneau". The signature is written in a cursive style with a long, sweeping underline.

Lee Carbonneau, NHCWS, PWS
Normandeau Associates, Inc.
25 Nashua Road
Bedford, NH 03110
lcarbonneau@normandeau.com
(603) 637-1150 (direct)

Encl.

From: [Lee Carbonneau](#)
To: ["seth.creighton@rochesternh.net"](mailto:seth.creighton@rochesternh.net)
Cc: [Jon Evans \(Jonathan.Evans@dot.nh.gov\)](#); [Spaulding, Nancy](#); [Raymond Hanf](#)
Subject: Dover-Rochester All-Electronic Tolling (AET) project (NHDOT Project 29440)
Date: Friday, November 6, 2020 2:15:00 PM
Attachments: [image001.png](#)
[image006.png](#)
[image007.png](#)
[image008.png](#)
[image009.png](#)
[image010.png](#)

Dear Mr. Creighton and Mr. Dionne:

The Dover-Rochester All-Electronic Tolling (AET) project (NHDOT Project 29440), would replace the existing toll plaza on the Spaulding Turnpike in Rochester with an AET gantry, replace other toll infrastructure, and add sound walls and stormwater treatment. Soundwall construction would impact four intermittent streams, one medium value vernal pool, and about 0.8 acres of wetlands. These roadside wetlands primarily provide small quantities of peak flow storage, groundwater discharge/recharge, and sediment/toxicant retention functions. The wetland with the vernal pool also provides some wildlife habitat and production export functions.

Normandeau is assisting the design engineers, HNTB, Inc., and the NH Department of Transportation with natural resource permitting for this project. The wetland/stream impacts would require mitigation. The NH Department of Environmental Services would like to consider possible mitigation projects within Rochester that would compensate for these impacts/loss of function. Any projects suggested by the City of Rochester should be well into the planning stages, with project scope, estimated budget, and schedule. Relevant projects could include stream improvement projects (channel restoration, culvert replacement); wetland restoration; land preservation projects (must include wetland and/or vernal pool/buffers); etc.

If local projects are not identified, project mitigation would take the form of a payment to the Aquatic Resource Mitigation (ARM) fund payment, and the funds would be pooled by DES with other payments and made available for conservation/restoration projects in the Salmon Falls-Piscataqua River watershed. The initial estimate of an alternative ARM fund payment for the Dover-Rochester AET project is approximately \$450,000. This would be the maximum amount that NHDOT would contribute to a local project in Rochester.

Please let us know at your earliest convenience if the City of Rochester has any planned conservation projects that would fit into this mitigation approach. We look forward to hearing from you.

Sincerely,
Lee Carbonneau

LEE E. CARBONNEAU
SENIOR PRINCIPAL SCIENTIST
Normandeau Associates, Inc.

25 Nashua Road, Bedford, NH 03110
(603) 637-1150 (direct) (603) 714-3084 (cell)
lcarbonneau@normandeau.com



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Wetland, Stream and Vernal Pool
Functions and Values Assessments
and Photographs



**WETLANDS FUNCTIONAL ASSESSMENT
WORKSHEET**
Water Division/Land Resource Management
Wetlands Bureau



[Check the Status of your Application](#)

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: NH Department of Transportation

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)

ADJACENT LAND USE: Highway/residential

CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? Yes No

DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 85 feet

SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Benjamin Griffith (NH Certified Wetland Scientist #298)

DATE(S) OF SITE VISIT(S): 5/5,13/2020

DELINEATION PER ENV-WT 406 COMPLETED? Yes No

CONFIRM THAT THE EVALUATION IS BASED ON:

- Office and
 Field examination.

METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"):

- USACE Highway Methodology.
 Other scientifically supported method (enter name/ title):

irm@des.nh.gov or (603) 271-2147

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

www.des.nh.gov

SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: RW1	LOCATION: (LAT/ LONG) 41.90226421/-70.56905941
WETLAND AREA: 350+ SF	DOMINANT WETLAND SYSTEMS PRESENT: PFO
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 1	COWARDIN CLASS: PFO1E
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No if not, where does the wetland lie in the drainage basin? [REDACTED]	IS THE WETLAND PART OF: <input type="checkbox"/> A wildlife corridor or <input checked="" type="checkbox"/> A habitat island?
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	IS THE WETLAND HUMAN-MADE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	ARE VERNAL POOLS PRESENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If yes, complete the Vernal Pool Table)
PROPOSED WETLAND IMPACT TYPE: fill	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
PROPOSED WETLAND IMPACT AREA: 40 sf	
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
<p>The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:</p> <ol style="list-style-type: none"> 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) 6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal) 8. Production Export (Nutrient) (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology) 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat) <p>First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i>. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i>, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.</p>	

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
4	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2,4,5,7,13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Adjacent intermittent stream, headwater
5	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7,8,10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Stream headwater
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
7	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4,8,14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Adjacent residences
8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1,9, 10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3,5	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6,7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]

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SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

- Wildlife and vegetation diversity/abundance list.
- Photograph of wetland attached.
- Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.
- For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

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Wetland Functions and Values Data Sheet

Dover – Rochester AET

Rochester

Wetland ID:	RW1	Delineator(s):	Benjamin Griffith
Cowardin Classification:	PFO1E	Date:	5/13/2020
Number of Flags:	5	Open Water:	No
Wetland Open/Closed	Open	Wetland Open Details	1,5
Associated Stream:	Yes	Stream ID:	RS2
Vernal Pool/Potential	No	VP/PVP ID:	N/A
Vernal Pool Identified:			
Wetland Description:	Small headwater of intermittent stream, abutting developed properties		

Functions and Values:

Groundwater Recharge/Discharge	Suitable
Floodflow Alteration	Suitable
Fish/Shellfish Habitat	No
Sediment/Toxicant Retention	No
Nutrient Removal/Retention	Suitable
Sediment/Shoreline Stabilization	No
Production Export	No
Wildlife Habitat	No
Recreation	No
Education/Scientific Value	No
Uniqueness/Heritage	No
Visual Quality/Aesthetics	No
Rare/Threatened and Endangered Species	No
Other	No

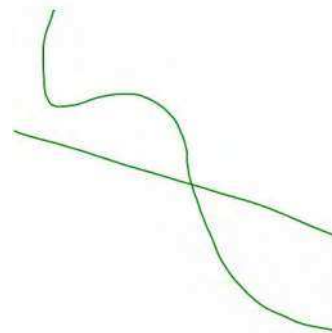
Dominant Plants:

Tree	None in wetland
Sapling/ Shrub	None in wetland
Herb/Seedling	Impatiens capensis, Solidago sp., Equisetum arvense, Rubus hispidus, Carex sp., Onoclea sensibilis
Woody Vine	
Invasives	

Soils:

Texture:	Loamy Sand
Parent Material:	Alluvium
Restrictive Layer:	No
Hydric Soil Indicator(s):	Sandy reodox (S5)
Soil Notes:	None

Sketch:



Photos:



7/30/20. RW1 looking north towards open



**WETLANDS FUNCTIONAL ASSESSMENT
WORKSHEET**
Water Division/Land Resource Management
Wetlands Bureau



[Check the Status of your Application](#)

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: NH Department of Transportation

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)

ADJACENT LAND USE: Highway/suburban open space

CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? Yes No

DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 95 feet

SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Benjamin Griffith (NH Certified Wetland Scientist #298)

DATE(S) OF SITE VISIT(S): 5/13/2020

DELINEATION PER ENV-WT 406 COMPLETED? Yes No

CONFIRM THAT THE EVALUATION IS BASED ON:

- Office and
 Field examination.

METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"):

- USACE Highway Methodology.
 Other scientifically supported method (enter name/ title):

irm@des.nh.gov or (603) 271-2147

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SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: RW2	LOCATION: (LAT/ LONG) 43.27598657/-70.96540858
WETLAND AREA: 137 SF	DOMINANT WETLAND SYSTEMS PRESENT: PFO
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 1	COWARDIN CLASS: PFO1B
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No if not, where does the wetland lie in the drainage basin? middle of watershed	IS THE WETLAND PART OF: <input type="checkbox"/> A wildlife corridor or <input type="checkbox"/> A habitat island? IS THE WETLAND HUMAN-MADE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE VERNAL POOLS PRESENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
PROPOSED WETLAND IMPACT TYPE: 	PROPOSED WETLAND IMPACT AREA: 0 sf
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
<p>The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:</p> <ol style="list-style-type: none"> 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) 6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal) 8. Production Export (Nutrient) (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology) 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat) <p>First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i>. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i>, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.</p>	

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4,14,17	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4,13,14	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4,7,15	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
10	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1,2,10,13	<input type="checkbox"/> Yes <input type="checkbox"/> No	
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3,4	<input type="checkbox"/> Yes <input type="checkbox"/> No	
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2	<input type="checkbox"/> Yes <input type="checkbox"/> No	
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2,6	<input type="checkbox"/> Yes <input type="checkbox"/> No	

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SECTION 6 - STREAM RESOURCES SUMMARY				
DESCRIPTION OF STREAM: RS1, Perennial Stream		STREAM TYPE (ROSGEN): C5		
HAVE FISHERIES BEEN DOCUMENTED? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		DOES THE STREAM SYSTEM APPEAR STABLE? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
OTHER KEY ON-SITE FUNCTIONS OF NOTE: [REDACTED]				
The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.				
FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
4	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
5	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7,8,11,13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3,4	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1,2,10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	No opportunity for sediment trapping
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3,4	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]

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14	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5,6,7,8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Low suitability, but significantly contributes to suitability of nearby areas.
----	--	---------	--	--

SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

- Wildlife and vegetation diversity/abundance list.
- Photograph of wetland attached.
- Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.
- For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

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Wetland Functions and Values Data Sheet

Dover – Rochester AET

Rochester

Wetland ID:	RW2	Delineator(s):	Benjamin Griffith
Cowardin Classification:	PFO1B	Date:	5/13/2020
Number of Flags:	3	Open Water:	No
Wetland Open/Closed	Closed	Wetland Open Details	N/A
Associated Stream:	Yes	Stream ID:	RS1
Vernal Pool/Potential	No	VP/PVP ID:	N/A
Vernal Pool Identified:			
Wetland Description:	Small riverbank fringe wetland		

Functions and Values:

Groundwater Recharge/Discharge	No
Floodflow Alteration	No
Fish/Shellfish Habitat	No
Sediment/Toxicant Retention	Yes
Nutrient Removal/Retention	No
Sediment/Shoreline Stabilization	No
Production Export	No
Wildlife Habitat	No
Recreation	No
Education/Scientific Value	No
Uniqueness/Heritage	No
Visual Quality/Aesthetics	No
Rare/Threatened and Endangered Species	No
Other	No

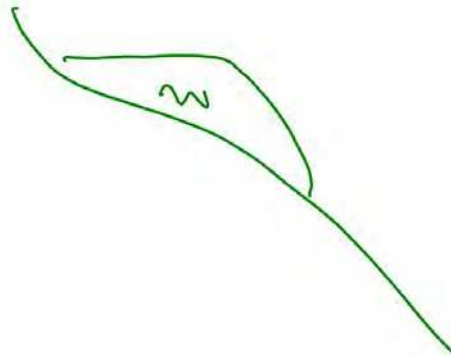
Dominant Plants:

Tree	None in wetland
Sapling/ Shrub	Tsuga canadensis
Herb/Seedling	Impatiens capensis, Alaria petiolata, Carex intumescens
Woody Vine	
Invasives	Alaria petiolata

Soils:

Texture:	Loamy Sand
Parent Material:	Alluvium
Restrictive Layer:	No
Hydric Soil Indicator(s):	Sandy redox (S5)
Soil Notes:	None

Sketch:



Photos:



5/13/20. ACOE Wetland Plot



5/13/20. From RS1 Facing flag 2

Stream Data Sheet

Dover – Rochester AET

Rochester

Stream ID:	RS1	Delineator(s):	Benjamin Griffith
Cowardin Classification:	R2UB2	Rosgen Classification:	C5
Flow Regime:	Perennial	Number of Flags:	24
Associated Wetland:	Yes	Wetland ID:	RW2, RW3
Stream Notes:	Culvert obstructed		

Stream Characteristics:

Flow Observations:	Low
Bed composition:	Sand, organic
Bank Height (ft):	2
Average Bankfull Width (ft)	8
Average Depth (ft):	0.82
Riffle/Pool Complex:	No
Defined Bed and Bank	Yes
Shown on USGS Topo?	Yes
Flows Continuously for at least 6 Months?	Yes
Aquatic Organisms Present?	
Aquatic Vegetation Present?	
Scoured Mineral Bottom?	

Sketch:

Location:



Photos:



Stream RS1 looking upstream



**WETLANDS FUNCTIONAL ASSESSMENT
WORKSHEET**
Water Division/Land Resource Management
Wetlands Bureau



[Check the Status of your Application](#)

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: NH Department of Transportation

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)

ADJACENT LAND USE: Highway/suburban open space

CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? Yes No

DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 95 feet

SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Benjamin Griffith (NH Certified Wetland Scientist #298)

DATE(S) OF SITE VISIT(S): 5/13/2020

DELINEATION PER ENV-WT 406 COMPLETED? Yes No

CONFIRM THAT THE EVALUATION IS BASED ON:

- Office and
 Field examination.

METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"):

- USACE Highway Methodology.
 Other scientifically supported method (enter name/ title):

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SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: RW3	LOCATION: (LAT/ LONG) 43.27598657/-70.96540858
WETLAND AREA: 351 SF*	DOMINANT WETLAND SYSTEMS PRESENT: PFO
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 1	COWARDIN CLASS: PFO1B
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No if not, where does the wetland lie in the drainage basin? high in watershed	IS THE WETLAND PART OF: <input type="checkbox"/> A wildlife corridor or <input type="checkbox"/> A habitat island? IS THE WETLAND HUMAN-MADE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE VERNAL POOLS PRESENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? <input type="checkbox"/> Yes <input type="checkbox"/> No
PROPOSED WETLAND IMPACT TYPE: [REDACTED]	PROPOSED WETLAND IMPACT AREA: 0 sf
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
<p>The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:</p> <ol style="list-style-type: none"> 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) 6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal) 8. Production Export (Nutrient) (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology) 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat) <p>First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i>. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i>, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.</p>	

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4,14,17	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
4	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4,13,14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
5	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4,7,15	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
10	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1,2,10,13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3,4	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2,6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]

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SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

- Wildlife and vegetation diversity/abundance list.
- Photograph of wetland attached.
- Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.
- For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

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Wetland Functions and Values Data Sheet

Dover – Rochester AET

Rochester

Wetland ID:	RW3	Delineator(s):	Benjamin Griffith
Cowardin Classification:	PFO1B	Date:	5/13/2020
Number of Flags:	6	Open Water:	No
Wetland Open/Closed	Closed	Wetland Open Details	N/A
Associated Stream:	No	Stream ID:	N/A
Vernal Pool/Potential	No	VP/PVP ID:	N/A
Vernal Pool Identified:			
Wetland Description:	Wetland on step between roadside slope and stream		

Functions and Values:

Groundwater Recharge/Discharge	No
Floodflow Alteration	No
Fish/Shellfish Habitat	No
Sediment/Toxicant Retention	Suitable
Nutrient Removal/Retention	No
Sediment/Shoreline Stabilization	No
Production Export	No
Wildlife Habitat	No
Recreation	No
Education/Scientific Value	No
Uniqueness/Heritage	No
Visual Quality/Aesthetics	No
Rare/Threatened and Endangered Species	No
Other	No

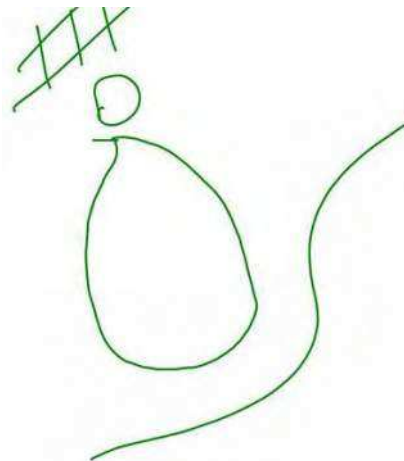
Dominant Plants:

Tree	Ulmus americana
Sapling/ Shrub	Hamamelis virginiana
Herb/Seedling	Osmunda cinnamomea, Athyrium angustum
Woody Vine	
Invasives	

Soils:

Texture:	Sandy Loam
Parent Material:	Alluvium
Restrictive Layer:	No
Hydric Soil Indicator(s):	Depleted matrix (F3)
Soil Notes:	None

Sketch:



Photos:



5/13/20. ACOE Wetland Plot



5/13/20. Facing southwest towards culvert and highway



**WETLANDS FUNCTIONAL ASSESSMENT
WORKSHEET**
Water Division/Land Resource Management
Wetlands Bureau



[Check the Status of your Application](#)

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: NH Department of Transportation

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)

ADJACENT LAND USE: Highway/residential

CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? Yes No

DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 40 feet

SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Benjamin Griffith (NH Certified Wetland Scientist #298)

DATE(S) OF SITE VISIT(S): 5/13/2020

DELINEATION PER ENV-WT 406 COMPLETED? Yes No

CONFIRM THAT THE EVALUATION IS BASED ON:

- Office and
 Field examination.

METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"):

- USACE Highway Methodology.
 Other scientifically supported method (enter name/ title):

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SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: RW4	LOCATION: (LAT/ LONG) 41.90213467/-70.56923484
WETLAND AREA: 2,460 SF	DOMINANT WETLAND SYSTEMS PRESENT: PFO
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 1	COWARDIN CLASS: PFO1B
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No if not, where does the wetland lie in the drainage basin? High in watershed of small intermittent tributary stream	IS THE WETLAND PART OF: <input type="checkbox"/> A wildlife corridor or <input type="checkbox"/> A habitat island? IS THE WETLAND HUMAN-MADE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE VERNAL POOLS PRESENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
PROPOSED WETLAND IMPACT TYPE: Fill	PROPOSED WETLAND IMPACT AREA: 972 sf
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
<p>The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:</p> <ol style="list-style-type: none"> 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) 6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal) 8. Production Export (Nutrient) (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology) 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat) <p>First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i>. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i>, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.</p>	

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
4	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4,9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4,7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	GW discharge
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
7	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1,2,4,5,7,12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Nearby residences, diffuse flow
8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
10	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1,2,5,14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Highway is potential source, diffuse flow of water
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3,4,5	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6,7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

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SECTION 6 - STREAM RESOURCES SUMMARY				
DESCRIPTION OF STREAM: RS2, Intermittent Stream		STREAM TYPE (ROSGEN): C5		
HAVE FISHERIES BEEN DOCUMENTED? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		DOES THE STREAM SYSTEM APPEAR STABLE? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
OTHER KEY ON-SITE FUNCTIONS OF NOTE: [REDACTED]				
The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.				
FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
4	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4,7,13,15	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
5	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4,7,8,10,13	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Stream fed by springs visibly discharging at time of survey
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4, 13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Primary viewing location is accessed from side of highway
10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1,2,5,10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Opportunity exists, but stream generally transports rather than traps sediment
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2,3,4,14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1,22	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]

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14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6	<input type="checkbox"/> Yes <input type="checkbox"/> No	
----	--	---	---	---

SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

- Wildlife and vegetation diversity/abundance list.
- Photograph of wetland attached.
- Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.
- For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

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Wetland Functions and Values Data Sheet

Dover – Rochester AET

Rochester

Wetland ID:	RW4	Delineator(s):	Benjamin Griffith
Cowardin Classification:	PFO1B	Date:	5/13/2020
Number of Flags:	23	Open Water:	No
Wetland Open/Closed	Closed	Wetland Open Details	N/A
Associated Stream:	Yes	Stream ID:	RS2
Vernal Pool/Potential	No	VP/PVP ID:	N/A
Vernal Pool Identified:			
Wetland Description:	Wetland at toe of road slope along intermittent stream		

Functions and Values:

Groundwater Recharge/Discharge	Suitable
Floodflow Alteration	No
Fish/Shellfish Habitat	No
Sediment/Toxicant Retention	Suitable
Nutrient Removal/Retention	Suitable
Sediment/Shoreline Stabilization	No
Production Export	No
Wildlife Habitat	No
Recreation	No
Education/Scientific Value	No
Uniqueness/Heritage	No
Visual Quality/Aesthetics	No
Rare/Threatened and Endangered Species	No
Other	No

Dominant Plants:

Tree	
Sapling/ Shrub	
Herb/Seedling	Impatiens capensis, Ranunculus recurvatus, Equisetum arvense
Woody Vine	
Invasives	

Sketch:

Soils:

Texture:	Sandy Loam
Parent Material:	Alluvium
Restrictive Layer:	No
Hydric Soil Indicator(s):	Depleted matrix (F3)
Soil Notes:	None

Photos:



5/13/20. ACOE Wetland Plot

Stream Data Sheet

Dover – Rochester AET

Rochester

Stream ID:	RS2	Delineator(s):	Benjamin Griffith
Cowardin Classification:	R4SB4	Rosgen Classification:	C5
Flow Regime:	Intermittent	Number of Flags:	11
Associated Wetland:	yes	Wetland ID:	RW1; RW4
Stream Notes:	Tributary to RS1		

Stream Characteristics:

Flow Observations:	Low
Bed composition:	Sand, organic
Bank Height (ft):	0.12
Average Bankfull Width (ft)	2.3
Average Depth (ft):	0.13
Riffle/Pool Complex:	No
Defined Bed and Bank	
Shown on USGS Topo?	No
Flows Continuously for at least 6 Months?	Yes
Aquatic Organisms Present?	
Aquatic Vegetation Present?	
Scoured Mineral Bottom?	

Sketch:

Location:



Photos:



Stream RS2 looking upstream from where RS2 joins RS1 just above culvert under TPK.



**WETLANDS FUNCTIONAL ASSESSMENT
WORKSHEET**
Water Division/Land Resource Management
Wetlands Bureau



[Check the Status of your Application](#)

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: NH Department of Transportation

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)

ADJACENT LAND USE: Highway/residential

CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? Yes No

DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 85 feet

SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Benjamin Griffith (NH Certified Wetland Scientist #298)

DATE(S) OF SITE VISIT(S): 5/13/2020

DELINEATION PER ENV-WT 406 COMPLETED? Yes No

CONFIRM THAT THE EVALUATION IS BASED ON:

- Office and
 Field examination.

METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"):

- USACE Highway Methodology.
 Other scientifically supported method (enter name/ title):

irm@des.nh.gov or (603) 271-2147

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SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: RW5	LOCATION: (LAT/ LONG) 41.90222792/-70.56923023
WETLAND AREA: 1,840+ SF	DOMINANT WETLAND SYSTEMS PRESENT: PFO
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 0	COWARDIN CLASS: PFO1E
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No if not, where does the wetland lie in the drainage basin? [REDACTED]	IS THE WETLAND PART OF: <input type="checkbox"/> A wildlife corridor or <input checked="" type="checkbox"/> A habitat island? IS THE WETLAND HUMAN-MADE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE VERNAL POOLS PRESENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? <input type="checkbox"/> Yes <input type="checkbox"/> No
PROPOSED WETLAND IMPACT TYPE: [REDACTED]	PROPOSED WETLAND IMPACT AREA: 0 sf
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
<p>The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:</p> <ol style="list-style-type: none"> 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) 6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal) 8. Production Export (Nutrient) (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology) 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat) <p>First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i>. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i>, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.</p>	

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
4	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3,5,6,7,8,9	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
5	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4,15	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1,4,9	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7,10,18	<input type="checkbox"/> Yes <input type="checkbox"/> No	Too small/shallow for effective VP usage

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SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

- Wildlife and vegetation diversity/abundance list.
- Photograph of wetland attached.
- Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.
- For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

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Wetland Functions and Values Data Sheet

Dover – Rochester AET

Rochester

Wetland ID:	RW5	Delineator(s):	Benjamin Griffith
Cowardin Classification:	PFO1E	Date:	5/13/2020
Number of Flags:	4	Open Water:	No
Wetland Open/Closed	Open	Wetland Open Details	1,4
Associated Stream:	No	Stream ID:	N/A
Vernal Pool/Potential	No	VP/PVP ID:	N/A
Vernal Pool Identified:			
Wetland Description:	Wetland with small pool dried by late June		

Functions and Values:

Groundwater Recharge/Discharge	No
Floodflow Alteration	Suitable
Fish/Shellfish Habitat	No
Sediment/Toxicant Retention	No
Nutrient Removal/Retention	No
Sediment/Shoreline Stabilization	No
Production Export	No
Wildlife Habitat	No
Recreation	No
Education/Scientific Value	No
Uniqueness/Heritage	No
Visual Quality/Aesthetics	No
Rare/Threatened and Endangered Species	No
Other	No

Dominant Plants:

Tree	Ulmus americana
Sapling/ Shrub	Cornus racemosa
Herb/Seedling	Thelypteris palustris
Woody Vine	
Invasives	

Sketch:

Soils:

Texture:	Loamy Sand
Parent Material:	Alluvium
Restrictive Layer:	No
Hydric Soil Indicator(s):	Sandy rebox (S5)
Soil Notes:	None

Photos:



7/30/20. Facing southeast along ROW boundary



**WETLANDS FUNCTIONAL ASSESSMENT
WORKSHEET**
Water Division/Land Resource Management
Wetlands Bureau



[Check the Status of your Application](#)

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: NH Department of Transportation

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)

ADJACENT LAND USE: Highway/residential

CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? Yes No

DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 40 feet

SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Benjamin Griffith (NH Certified Wetland Scientist #298)

DATE(S) OF SITE VISIT(S): 5/13/2020

DELINEATION PER ENV-WT 406 COMPLETED? Yes No

CONFIRM THAT THE EVALUATION IS BASED ON:

- Office and
 Field examination.

METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"):

- USACE Highway Methodology.
 Other scientifically supported method (enter name/ title):

irm@des.nh.gov or (603) 271-2147

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SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: RW6	LOCATION: (LAT/ LONG) 41.90223064/-70.56913912
WETLAND AREA: 912 SF	DOMINANT WETLAND SYSTEMS PRESENT: PFO
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 1	COWARDIN CLASS: PFO1E
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No if not, where does the wetland lie in the drainage basin? high in a tributary watershed	IS THE WETLAND PART OF: <input type="checkbox"/> A wildlife corridor or <input checked="" type="checkbox"/> A habitat island? IS THE WETLAND HUMAN-MADE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE VERNAL POOLS PRESENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
PROPOSED WETLAND IMPACT TYPE: Fill	PROPOSED WETLAND IMPACT AREA: 896 sf
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
<p>The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:</p> <ol style="list-style-type: none"> 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) 6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal) 8. Production Export (Nutrient) (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology) 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat) <p>First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i>. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i>, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.</p>	

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
4	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4,5,6,7,8,10,13,15,16	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Very small storage potential but good geometry, constricted outlet
5	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4,7,8,9,15	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	recharge and discharge
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1,11,13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]

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

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SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

- Wildlife and vegetation diversity/abundance list.
- Photograph of wetland attached.
- Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.
- For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

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Wetland Functions and Values Data Sheet

Dover – Rochester AET

Rochester

Wetland ID:	RW6	Delineator(s):	Benjamin Griffith
Cowardin Classification:	PFO1E	Date:	5/13/2020
Number of Flags:	10	Open Water:	No
Wetland Open/Closed	Closed	Wetland Open Details	N/A
Associated Stream:	Yes	Stream ID:	RS3
Vernal Pool/Potential	No	VP/PVP ID:	N/A
Vernal Pool Identified:			
Wetland Description:	Wetland between toe of road slope and nearby house		

Functions and Values:

Groundwater Recharge/Discharge	Suitable
Floodflow Alteration	Suitable
Fish/Shellfish Habitat	No
Sediment/Toxicant Retention	No
Nutrient Removal/Retention	No
Sediment/Shoreline Stabilization	No
Production Export	No
Wildlife Habitat	No
Recreation	No
Education/Scientific Value	No
Uniqueness/Heritage	No
Visual Quality/Aesthetics	No
Rare/Threatened and Endangered Species	No
Other	No

Dominant Plants:

Tree	None in wetland
Sapling/ Shrub	Ilex verticillata, Pinus strobus
Herb/Seedling	Impatiens capensis, Osmunda cinnamomea, Rosa multiflora, Onoclea sensibilis
Woody Vine	
Invasives	Rosa multiflora

Sketch:

Soils:

Texture:	Sand
Parent Material:	Alluvium
Restrictive Layer:	No
Hydric Soil Indicator(s):	Sandy Redox (S5)
Soil Notes:	None

Photos:



6/30/20. Wetland RW6



**WETLANDS FUNCTIONAL ASSESSMENT
WORKSHEET**
Water Division/Land Resource Management
Wetlands Bureau



[Check the Status of your Application](#)

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: NH Department of Transportation

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)

ADJACENT LAND USE: Highway/residential

CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? Yes No

DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 70 feet

SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Benjamin Griffith (NH Certified Wetland Scientist #298)

DATE(S) OF SITE VISIT(S): 5/13/2020

DELINEATION PER ENV-WT 406 COMPLETED? Yes No

CONFIRM THAT THE EVALUATION IS BASED ON:

- Office and
 Field examination.

METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"):

- USACE Highway Methodology.
 Other scientifically supported method (enter name/ title):

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SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: RW7	LOCATION: (LAT/ LONG) 41.90213748/-70.56912873
WETLAND AREA: 4,043+ SF	DOMINANT WETLAND SYSTEMS PRESENT: PFO
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 1	COWARDIN CLASS: PFO1E
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No if not, where does the wetland lie in the drainage basin? high in watershed	IS THE WETLAND PART OF: <input type="checkbox"/> A wildlife corridor or <input type="checkbox"/> A habitat island? IS THE WETLAND HUMAN-MADE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE VERNAL POOLS PRESENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
PROPOSED WETLAND IMPACT TYPE: Fill	PROPOSED WETLAND IMPACT AREA: 659 sf
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
<p>The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:</p> <ol style="list-style-type: none"> 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) 6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal) 8. Production Export (Nutrient) (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology) 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat) <p>First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i>. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i>, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.</p>	

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	█	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	█
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	█	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	█
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	█	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	█
4	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5,7,15	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	█
5	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2,4,10,13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	█
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	█	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	█
7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5,7,12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	█
8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	█
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	█	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	█
10	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1,2,10,14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Toxicants/sediment from highway, intermittent stream
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3,5	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	█
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	█
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	█	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	█
14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	█	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	█

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SECTION 6 - STREAM RESOURCES SUMMARY				
DESCRIPTION OF STREAM: RS3			STREAM TYPE (ROSGEN): B5c	
HAVE FISHERIES BEEN DOCUMENTED? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			DOES THE STREAM SYSTEM APPEAR STABLE? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
OTHER KEY ON-SITE FUNCTIONS OF NOTE: 				
The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.				
FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
4	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4,9,13,15	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4,7,9	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4	<input type="checkbox"/> Yes <input type="checkbox"/> No	
8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1,2,10	<input type="checkbox"/> Yes <input type="checkbox"/> No	
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2,3,4	<input type="checkbox"/> Yes <input type="checkbox"/> No	
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1	<input type="checkbox"/> Yes <input type="checkbox"/> No	
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6	<input type="checkbox"/> Yes <input type="checkbox"/> No	

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SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

- Wildlife and vegetation diversity/abundance list.
- Photograph of wetland attached.
- Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.
- For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

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Wetland Functions and Values Data Sheet

Dover – Rochester AET

Rochester

Wetland ID:	RW7	Delineator(s):	Benjamin Griffith
Cowardin Classification:	PFO1E	Date:	5/13/2020
Number of Flags:	22	Open Water:	No
Wetland Open/Closed	Open	Wetland Open Details	1a, 1b
Associated Stream:	Yes	Stream ID:	RS3
Vernal Pool/Potential	No	VP/PVP ID:	N/A
Vernal Pool Identified:			
Wetland Description:	Narrow wetland parallel to TPK upgradient of stream RS3		

Functions and Values:

Groundwater Recharge/Discharge	No
Floodflow Alteration	No
Fish/Shellfish Habitat	No
Sediment/Toxicant Retention	Suitable
Nutrient Removal/Retention	No
Sediment/Shoreline Stabilization	No
Production Export	No
Wildlife Habitat	No
Recreation	No
Education/Scientific Value	No
Uniqueness/Heritage	No
Visual Quality/Aesthetics	No
Rare/Threatened and Endangered Species	No
Other	No

Dominant Plants:

Tree	None in wetland
Sapling/ Shrub	Vaccinium corymbosum
Herb/Seedling	None in wetland
Woody Vine	
Invasives	

Sketch:

Soils:

Texture:	Sand
Parent Material:	Alluvium
Restrictive Layer:	No
Hydric Soil Indicator(s):	Sandy Redox (S5)
Soil Notes:	None

Photos:



7/30/20. View south toward Railroad Ave. extension culvert



7/30/20. View north



Stream Data Sheet

Dover – Rochester AET

Rochester

Stream ID:	RS3	Delineator(s):	Benjamin Griffith
Cowardin Classification:	R4SB4	Rosgen Classification:	B5c
Flow Regime:	Intermittent	Number of Flags:	
Associated Wetland:	yes	Wetland ID:	RW6, RW7
Stream Notes:			

Stream Characteristics:

Sketch:

Flow Observations:	Mod
Bed composition:	Sand
Bank Height (ft):	
Average Bankfull Width (ft)	3.7
Average Depth (ft):	0.23
Riffle/Pool Complex:	No
Defined Bed and Bank	Yes
Shown on USGS Topo?	No
Flows Continuously for at least 6 Months?	Yes
Aquatic Organisms Present?	
Aquatic Vegetation Present?	
Scoured Mineral Bottom?	

Photos:



Stream RS3 from Flag 3B (left bank)



**WETLANDS FUNCTIONAL ASSESSMENT
WORKSHEET**
Water Division/Land Resource Management
Wetlands Bureau



[Check the Status of your Application](#)

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: NH Department of Transportation

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)

ADJACENT LAND USE: Highway/residential

CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? Yes No

DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 55 feet

SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Benjamin Griffith (NH Certified Wetland Scientist #298)

DATE(S) OF SITE VISIT(S): 5/13/2020

DELINEATION PER ENV-WT 406 COMPLETED? Yes No

CONFIRM THAT THE EVALUATION IS BASED ON:

- Office and
 Field examination.

METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"):

- USACE Highway Methodology.
 Other scientifically supported method (enter name/ title):

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SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: RW8	LOCATION: (LAT/ LONG) 41.90224091/-70.56916175
WETLAND AREA: 8,727+ SF	DOMINANT WETLAND SYSTEMS PRESENT: PFO
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 1	COWARDIN CLASS: PFO1E
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No if not, where does the wetland lie in the drainage basin? high in the watershed	IS THE WETLAND PART OF: <input type="checkbox"/> A wildlife corridor or <input checked="" type="checkbox"/> A habitat island?
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	IS THE WETLAND HUMAN-MADE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	ARE VERNAL POOLS PRESENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If yes, complete the Vernal Pool Table)
PROPOSED WETLAND IMPACT TYPE: Fill	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	PROPOSED WETLAND IMPACT AREA: 1115 sf
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
<p>The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:</p> <ol style="list-style-type: none"> 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) 6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal) 8. Production Export (Nutrient) (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology) 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat) <p>First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i>. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i>, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.</p>	

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
4	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3,4,5,6,7,8,9,10,13,15	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Hydric soils, stream flow and constricted outlet
5	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4,7,15	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3,4,7,8,9,12,14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	very small
8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1,5,6,11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
10	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1,2,5,10,12,15,16	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Highway runoff, thick vegetation, storage
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1,4,9,12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6,13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

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SECTION 6 - STREAM RESOURCES SUMMARY				
DESCRIPTION OF STREAM: RS4, Intermittent			STREAM TYPE (ROSGEN): C5	
HAVE FISHERIES BEEN DOCUMENTED? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			DOES THE STREAM SYSTEM APPEAR STABLE? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
OTHER KEY ON-SITE FUNCTIONS OF NOTE: [REDACTED]				
The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.				
FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
4	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4,9,15	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
5	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1,2	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3,4	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]

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SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

- Wildlife and vegetation diversity/abundance list.
- Photograph of wetland attached.
- Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.
- For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

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Wetland Functions and Values Data Sheet

Dover – Rochester AET

Rochester

Wetland ID:	RW8	Delineator(s):	Benjamin Griffith
Cowardin Classification:	PFO1E	Date:	5/13/2020
Number of Flags:	31	Open Water:	No
Wetland Open/Closed	Open	Wetland Open Details	15b, 17a
Associated Stream:	Yes	Stream ID:	RS4
Vernal Pool/Potential	No	VP/PVP ID:	N/A
Vernal Pool Identified:			
Wetland Description:	Broad, seasonally flooded wetland bordering stream		

Functions and Values:

Groundwater Recharge/Discharge	No
Floodflow Alteration	Principal
Fish/Shellfish Habitat	No
Sediment/Toxicant Retention	Suitable
Nutrient Removal/Retention	No
Sediment/Shoreline Stabilization	No
Production Export	No
Wildlife Habitat	No
Recreation	No
Education/Scientific Value	No
Uniqueness/Heritage	No
Visual Quality/Aesthetics	No
Rare/Threatened and Endangered Species	No
Other	No

Dominant Plants:

Tree	Acer rubrum
Sapling/ Shrub	Pinus strobus, Acer rubrum, Tsuga canadensis
Herb/Seedling	Carex stricta, Toxicodendron radicans, Equisetum pratense, Thelypteris palustris
Woody Vine	
Invasives	

Sketch:

Soils:

Texture:	Sandy Loam
Parent Material:	Alluvium
Restrictive Layer:	No
Hydric Soil Indicator(s):	Depleted matrix (F3)
Soil Notes:	None

Photos:



RW8 near stream RS4



RW8 typical vegetation



View north along linear wetland RW8



Stream Data Sheet

Dover – Rochester AET

Rochester

Stream ID:	RS4	Delineator(s):	Benjamin Griffith
Cowardin Classification:	R4SB4	Rosgen Classification:	C5
Flow Regime:	Intermittent	Number of Flags:	
Associated Wetland:	Yes	Wetland ID:	RW8
Stream Notes:			

Stream Characteristics:

Sketch:

Flow Observations:	Low
Bed composition:	Sand
Bank Height (ft):	
Average Bankfull Width (ft)	
Average Depth (ft):	
Riffle/Pool Complex:	No
Defined Bed and Bank	Yes
Shown on USGS Topo?	No
Flows Continuously for at least 6 Months?	Yes
Aquatic Organisms Present?	
Aquatic Vegetation Present?	
Scoured Mineral Bottom?	

Photos:



Stream RS4



**WETLANDS FUNCTIONAL ASSESSMENT
WORKSHEET**
Water Division/Land Resource Management
Wetlands Bureau



[Check the Status of your Application](#)

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: NH Department of Transportation

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)

ADJACENT LAND USE: Highway/suburban

CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? Yes No

DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 30 feet

SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Benjamin Griffith (NH Certified Wetland Scientist #298)

DATE(S) OF SITE VISIT(S): 5/13/2020

DELINEATION PER ENV-WT 406 COMPLETED? Yes No

CONFIRM THAT THE EVALUATION IS BASED ON:

- Office and
 Field examination.

METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"):

- USACE Highway Methodology.
 Other scientifically supported method (enter name/ title):

irm@des.nh.gov or (603) 271-2147

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SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: RW9	LOCATION: (LAT/ LONG) 41.90223819/-70.56914222
WETLAND AREA: 19,169 SF	DOMINANT WETLAND SYSTEMS PRESENT: PFO
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 0	COWARDIN CLASS: PFO1E
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No if not, where does the wetland lie in the drainage basin? 	IS THE WETLAND PART OF: <input type="checkbox"/> A wildlife corridor or <input checked="" type="checkbox"/> A habitat island?
	IS THE WETLAND HUMAN-MADE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE VERNAL POOLS PRESENT? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
PROPOSED WETLAND IMPACT TYPE: Fill	PROPOSED WETLAND IMPACT AREA: 8769 sf
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
<p>The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:</p> <ol style="list-style-type: none"> 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) 6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal) 8. Production Export (Nutrient) (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology) 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat) <p>First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i>. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i>, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.</p>	

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
4	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3,4,7,8,10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Some storage, but no stream
5	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4,15	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
7	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5,6,7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	saturated fine-grained soil
8	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1,4,13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Vernal Pool, insect/shrub food sources
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1,2,4	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
14	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	16,20	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Vernal pool, but little other wildlife value

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SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)

Delineations of vernal pools shall be based on the characteristics listed in the definition of “vernal pool” in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:

- *Identifying and Documenting Vernal Pools in New Hampshire 3rd Ed.*, 2016, published by NHF&G; or
- The USACE *Vernal Pool Assessment* draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.

“Important Notes” are to include documented reproductive and wildlife values, landscape context, and relationship to other vernal pools/wetlands.

Note: For projects seeking federal approval from the USACE, please attach a completed copy of The USACE “Vernal Pool Assessment” form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1	5/5/2020	Wood frog		Estimate pool dries between July and Sept	RVP1, ~500 tadpoles
2					
3					
4					
5					
6					
7					
8					

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SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

- Wildlife and vegetation diversity/abundance list.
- Photograph of wetland attached.
- Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.
- For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

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Wetland Functions and Values Data Sheet

Dover – Rochester AET

Rochester

Wetland ID:	RW9	Delineator(s):	Benjamin Griffith
Cowardin Classification:	PFO1E	Date:	5/13/2020
Number of Flags:	31	Open Water:	No
Wetland Open/Closed	Closed	Wetland Open Details	N/A
Associated Stream:	No	Stream ID:	N/A
Vernal Pool/Potential	Yes	VP/PVP ID:	RVP1
Vernal Pool Identified:			
Wetland Description:	Forested wetland that contains vernal pool		

Functions and Values:

Groundwater Recharge/Discharge	No
Floodflow Alteration	Suitable
Fish/Shellfish Habitat	No
Sediment/Toxicant Retention	No
Nutrient Removal/Retention	Suitable
Sediment/Shoreline Stabilization	No
Production Export	Suitable
Wildlife Habitat	Suitable
Recreation	No
Education/Scientific Value	No
Uniqueness/Heritage	No
Visual Quality/Aesthetics	No
Rare/Threatened and Endangered Species	No
Other	No

Dominant Plants:

Tree	Acer rubrum
Sapling/ Shrub	Spiraea alba, Frangula alnus
Herb/Seedling	Osmunda regalis, Carex stricta
Woody Vine	
Invasives	Frangula alnus

Sketch:

Soils:

Texture:	Fine Sandy Loam
Parent Material:	Alluvium
Restrictive Layer:	Yes 6"
Hydric Soil Indicator(s):	Depleted matrix (F3)
Soil Notes:	None

Photos:



Facing southwest to highway



Facing north to ROW boundary



Facing northwest along western wetland and VP boundary

US Army Corps of Engineers - New England District
DRAFT Vernal Pool Characterization Form

Project File # _____ Project Name Dover-Rochester AET Pool ID DR-VP1
Observer Jamie O'Brien - Normandeau Associates, Inc. Phone or E-mail jobrien@normandeau.com
Landowner/Applicant NH Department of Transportation Phone or E-mail 603-637-1180
Address 7 Hazen Road City Concord State NH Zip 03302
Location of vernal pool: City/State Rochester, NH
Survey date(s) 5/5/2020
Longitude/Latitude (in decimal degrees) 43.280058°, -70.972057°

A. VERNAL POOL CHARACTERISTICS (fill in all information known):

1. Landscape setting (check all that apply):

- Upland depression (4 pts; if this is also in a floodplain, use 2 pts) Pool part of wildlife corridor (4 pts)
 Pool part of a pool complex (within 1000 feet of one or more other vernal pools) (NA)
 Pool within larger wetland system (4 pts; if this is also in a floodplain, use 2 pts) Other: _____ (variable pts)

2. Vernal pool condition:

Describe any recent modifications to the pool and associated landscape: _____

3. Parent material:

- Glacial fluvial ("outwash") Loose till Peat
 Dense till Alluvium Coastal marine sediments

4. Aquatic resource type that best applies to this pool (choose dominant):

- Forested wetland (4 pts) Herbaceous wetland (4 pts) Floodplain (overflow/oxbow) (3 pts)
 Shrub wetland (4 pts) Open water (2 pts) Other: _____ (variable points)
 Peatland (acidic fen or bog) (4 pts) Intermittent stream reach (2 pts)

5. Pool canopy cover (%): >50

6. Predominant substrate:

- Mineral soil
 Organic matter (peat/muck) Depth _____ Sampling location (e.g., deepest zone, edge, etc.) _____

7. Pool size:

- a. Approximate dimensions of pool (at maximum capacity; include units): Length 250 ft Width 60 ft
Area: 15,000 sq ft
- b. Maximum depth at deepest point at time of survey (include units): 3 ft

8. Hydrology:

a. Estimated hydroperiod (unless actual, observed hydroperiod value(s) is(are) known, use the presence of these example indicator species to best predict the expected hydroperiod of the pool):

- Dries between early March and early July (e.g., *Thelypteris palustris*, *Carex stricta*, *Impatiens capensis*, *Ilex verticillata*) (6 pts)
 Dries between early July and early September (e.g., *Sagittaria latifolia*, *Scirpus cyperinus*, *Dulichium arund.*, *Cephalanthus occ.*) (8 pts)
 Dries between early September and early November (e.g., *Eleocharis palustris*, *Glyceria cana.*, *Utricularia spp.*, *Decodon vert.*) (8 pts)
 Dries between early November and late December, or intermittently exposed (e.g., *Nuphar spp.*, *Potamogeton spp.*) (2 pts)

b. Inlet/outlet (pick one):

- No inlet/outlet (8 pts) Permanent inlet or outlet (channel with well-defined banks and permanent flow) (2 pts)
 Temporary inlet/outlet (6 pts)

9. Water quality:

- Clear High turbidity High algae content Tannic

B. VERNAL POOL ENVELOPE (100 ft) AND CRITICAL HABITAT AREA (100-750 ft) CHARACTERISTICS (fill in all information known):

1. Landuse type and approximate percentage within the 100-ft vernal pool envelope:

- Forested 45 % (16 pts) Open (e.g., meadow, agriculture, golf course) _____ % (4 pts)
 Shrub _____ % (10 pts) Developed 55 _____ % (0 pts)

2. Landuse type and approximate percentage within the 100 - 750-ft vernal pool critical terrestrial habitat:

- Forested 40 % (16 pts) Open (e.g., agriculture, golf course) _____ % (4 pts)
 Shrub _____ % (10 pts) Developed 60 _____ % (0 pts)

Are there one or more barriers to vernal pool fauna movement within the envelope and/or critical terrestrial habitat? If so, check here and see directions for explanation of how to incorporate this information.

Based on: Field estimate GIS Aerial photo estimate

13.6 **TOTAL for Pool Envelope and Critical Terrestrial Habitat Area (out of 32 max.)**

C. SPECIES PRESENT IN VERNAL POOL

INDICATOR SPECIES	DATE	EGG MASSES (#)	TADPOLES/LARVAE
Wood Frog (<i>Lithobates sylvaticus</i>)	5/5/2020	0	~500
Spotted Salamander (<i>Ambystoma maculatum</i>)			
Blue-spotted Salamander (<i>Ambystoma laterale</i>)			
Jefferson's Salamander (<i>Ambystoma jeffersonianum</i>)			
Marbled Salamander (<i>Ambystoma opacum</i>)			
Fairy Shrimp (<i>Eubranchipus</i> spp.)		PRESENT/ABSENT	ABUNDANCE:
OTHER SPECIES	DATE	PRESENCE/ABSENCE	FEW/COMMON/MANY
Facultative Species (e.g., Spring Peeper (<i>Pseudacris crucifer</i>), Gray Tree Frog (<i>Hyla versicolor</i>), Caddisflies (Limnephilidae, Phryganeidae), American Toad (<i>Anaxyrus americanus</i>), Eastern Spadefoot Toad (<i>Scaphiopus holbrookii</i>), Fowler's Toad (<i>Anaxyrus fowleri</i>), Fingernail Clams (Sphaeriidae, Pisidiidae))(list):			

Rare Species (list): _____			

Predator Species (e.g., Bullfrog/Green frog tadpoles, Fish) (list):			

Other species (e.g., Ducks, Turtles, etc.)(list): _____			

Presence of Indicator Species Yes No

SUMMARY:

22 **TOTAL for Pool Characteristics** 13.6 **TOTAL for Pool Envelope and Critical Terrestrial Habitat Area**

Other comments (append photographs, additional notes, sketch of pool and surrounding landscape):



**WETLANDS FUNCTIONAL ASSESSMENT
WORKSHEET**
Water Division/Land Resource Management
Wetlands Bureau



[Check the Status of your Application](#)

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: NH Department of Transportation

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Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)

ADJACENT LAND USE: Highway

CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? Yes No

DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet):

SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Benjamin Griffith (NH Certified Wetland Scientist #298)

DATE(S) OF SITE VISIT(S): 5/13/20

DELINEATION PER ENV-WT 406 COMPLETED? Yes No

CONFIRM THAT THE EVALUATION IS BASED ON:

- Office and
 Field examination.

METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"):

- USACE Highway Methodology.
 Other scientifically supported method (enter name/ title):

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SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: RW10	LOCATION: (LAT/ LONG) 41.90216/-70.5692
WETLAND AREA: 2,000 sf	DOMINANT WETLAND SYSTEMS PRESENT: PFO
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 0	COWARDIN CLASS: PFO1E
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No if not, where does the wetland lie in the drainage basin? [REDACTED]	IS THE WETLAND PART OF: <input type="checkbox"/> A wildlife corridor or <input type="checkbox"/> A habitat island? IS THE WETLAND HUMAN-MADE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE VERNAL POOLS PRESENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
PROPOSED WETLAND IMPACT TYPE: [REDACTED]	PROPOSED WETLAND IMPACT AREA: 0 sf
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
<p>The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:</p> <ol style="list-style-type: none"> 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) 6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal) 8. Production Export (Nutrient) (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology) 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat) <p>First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i>. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i>, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.</p>	

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
4	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4,5	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	8,9,10,11	<input type="checkbox"/> Yes <input type="checkbox"/> No	
8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7	<input type="checkbox"/> Yes <input type="checkbox"/> No	
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
10	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1,2,9	<input type="checkbox"/> Yes <input type="checkbox"/> No	
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3	<input type="checkbox"/> Yes <input type="checkbox"/> No	
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	

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Wetland Functions and Values Data Sheet

Dover – Rochester AET

Rochester

Wetland ID:	RW10	Delineator(s):	Benjamin Griffith
Cowardin Classification:	PFO1E	Date:	5/13/2020
Number of Flags:	12	Open Water:	No
Wetland Open/Closed	Closed	Wetland Open Details	N/A
Associated Stream:	No	Stream ID:	N/A
Vernal Pool/Potential	No	VP/PVP ID:	N/A
Vernal Pool Identified:			
Wetland Description:	Wetland at toe of slope along exit ramp		

Functions and Values:

Groundwater Recharge/Discharge	No
Floodflow Alteration	No
Fish/Shellfish Habitat	No
Sediment/Toxicant Retention	Suitable
Nutrient Removal/Retention	No
Sediment/Shoreline Stabilization	No
Production Export	No
Wildlife Habitat	No
Recreation	No
Education/Scientific Value	No
Uniqueness/Heritage	No
Visual Quality/Aesthetics	No
Rare/Threatened and Endangered Species	No
Other	No

Dominant Plants:

Tree	None in wetland
Sapling/ Shrub	Alnus incana
Herb/Seedling	Onoclea sensibilis, Equisetum arvense
Woody Vine	
Invasives	

Soils:

Texture:	Loamy sand
Parent Material:	Alluvium
Restrictive Layer:	No
Hydric Soil Indicator(s):	Sandy redox (S5)
Soil Notes:	None

Sketch:



Wetland RW10 (aerial view)



**WETLANDS FUNCTIONAL ASSESSMENT
WORKSHEET**
Water Division/Land Resource Management
Wetlands Bureau



[Check the Status of your Application](#)

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: NH Department of Transportation

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)

ADJACENT LAND USE: Forest/sparse residential

CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? Yes No

DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet):

SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Benjamin Griffith (NH Certified Wetland Scientist #298)

DATE(S) OF SITE VISIT(S): May 2020

DELINEATION PER ENV-WT 406 COMPLETED? Yes No

CONFIRM THAT THE EVALUATION IS BASED ON:

- Office and
 Field examination.

METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"):

- USACE Highway Methodology.
 Other scientifically supported method (enter name/ title):

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SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: RW11	LOCATION: (LAT/ LONG) 41.9022/-70.5691
WETLAND AREA: 8,000 sf	DOMINANT WETLAND SYSTEMS PRESENT: PFO
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 1	COWARDIN CLASS: PFO1E
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No if not, where does the wetland lie in the drainage basin? middle of watershed	IS THE WETLAND PART OF: <input type="checkbox"/> A wildlife corridor or <input checked="" type="checkbox"/> A habitat island? IS THE WETLAND HUMAN-MADE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE VERNAL POOLS PRESENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
PROPOSED WETLAND IMPACT TYPE: [REDACTED]	PROPOSED WETLAND IMPACT AREA: 0 sf
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
<p>The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:</p> <ol style="list-style-type: none"> 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) 6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal) 8. Production Export (Nutrient) (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology) 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat) <p>First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i>. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i>, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.</p>	

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
3	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1, 4, 7, 12, 14, 15, 16, 17	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
4	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5, 6, 7, 8, 9, 10, 13, 15	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
5	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4, 7, 9, 15	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4, 5, 7, 13	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
8	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1, 10	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
10	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1, 2, 4, 10, 12	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2, 3, 5, 9	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
14	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3, 4, 5, 6, 8, 11, 14	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]

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SECTION 6 - STREAM RESOURCES SUMMARY				
DESCRIPTION OF STREAM: RS5, Perennial Stream			STREAM TYPE (ROSGEN): B5c	
HAVE FISHERIES BEEN DOCUMENTED? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			DOES THE STREAM SYSTEM APPEAR STABLE? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
OTHER KEY ON-SITE FUNCTIONS OF NOTE: [REDACTED]				
The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.				
FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Proximal to highway
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4,15	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
4	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2,6,9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
5	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7,9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Constricted outlet providing opportunity for groundwater recharge
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Limited vegetation present in stream channel
8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1,2,10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Opportunity exists, but stream transport sediments
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2,3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]

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14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6,7,8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<div style="background-color: gray; width: 40px; height: 15px; margin: 0 auto;"></div>
SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)				
<input checked="" type="checkbox"/> Wildlife and vegetation diversity/abundance list. <input checked="" type="checkbox"/> Photograph of wetland attached. <input checked="" type="checkbox"/> Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans. <input type="checkbox"/> For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)				

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Wetland Functions and Values Data Sheet

Dover – Rochester AET

Rochester

Wetland ID:	RW11	Delineator(s):	Benjamin Griffith
Cowardin Classification:	PFO1E	Date:	5/14/2020
Number of Flags:	21	Open Water:	No
Wetland Open/Closed	Open	Wetland Open Details	1, 21
Associated Stream:	Yes	Stream ID:	RS5
Vernal Pool/Potential	No	VP/PVP ID:	N/A
Vernal Pool Identified:			
Wetland Description:	Wetland at toe of slope along stream RS5		

Functions and Values:

Groundwater Recharge/Discharge	No
Floodflow Alteration	Suitable
Fish/Shellfish Habitat	No
Sediment/Toxicant Retention	Suitable
Nutrient Removal/Retention	No
Sediment/Shoreline Stabilization	No
Production Export	Suitable
Wildlife Habitat	Suitable
Recreation	No
Education/Scientific Value	No
Uniqueness/Heritage	No
Visual Quality/Aesthetics	No
Rare/Threatened and Endangered Species	No
Other	No

Dominant Plants:

Tree	Acer rubrum
Sapling/ Shrub	Vaccinium corymbosum
Herb/Seedling	Bidens cernua, Spiraea alba, Thalictrum pubescens, Athyrium angustum
Woody Vine	
Invasives	

Sketch:

Soils:

Texture:	Loamy sand
Parent Material:	Alluvium
Restrictive Layer:	No
Hydric Soil Indicator(s):	Sandy redox (S5); A11
Soil Notes:	None

Photos:



ACOE Wetland Plot



Wetland RW11 at flag 1 facing open



Wetland RW11 at flag 14/culvert (RS5 Culvert)

Stream Data Sheet

Dover – Rochester AET

Rochester

Stream ID:	RS5	Delineator(s):	Benjamin Griffith
Cowardin Classification:	R2UB2	Rosgen Classification:	B5c
Flow Regime:	Perennial	Number of Flags:	
Associated Wetland:	Yes	Wetland ID:	RW11, RW16
Stream Notes:	Crosses road		

Stream Characteristics:

Flow Observations:	Mod
Bed composition:	Sand
Bank Height (ft):	2
Average Bankfull Width (ft)	8.3
Average Depth (ft):	0.58
Riffle/Pool Complex:	Yes
Defined Bed and Bank	Yes
Shown on USGS Topo?	Yes
Flows Continuously for at least 6 Months?	Yes
Aquatic Organisms Present?	
Aquatic Vegetation Present?	
Scoured Mineral Bottom?	

Sketch:

Location:



Photos:



Stream RS5



**WETLANDS FUNCTIONAL ASSESSMENT
WORKSHEET**
Water Division/Land Resource Management
Wetlands Bureau



[Check the Status of your Application](#)

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: NH Department of Transportation

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)

ADJACENT LAND USE: Forest/highway

CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? Yes No

DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet):

SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Benjamin Griffith (NH Certified Wetland Scientist #298)

DATE(S) OF SITE VISIT(S): 5/13/20

DELINEATION PER ENV-WT 406 COMPLETED? Yes No

CONFIRM THAT THE EVALUATION IS BASED ON:

- Office and
 Field examination.

METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"):

- USACE Highway Methodology.
 Other scientifically supported method (enter name/ title):

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SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: RW12	LOCATION: (LAT/ LONG) 41.9022/-70.5691
WETLAND AREA: 5,000	DOMINANT WETLAND SYSTEMS PRESENT: PFO
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? []	COWARDIN CLASS: PFO1E
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No if not, where does the wetland lie in the drainage basin? middle of the watershed	IS THE WETLAND PART OF: <input type="checkbox"/> A wildlife corridor or <input checked="" type="checkbox"/> A habitat island? IS THE WETLAND HUMAN-MADE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE VERNAL POOLS PRESENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? <input type="checkbox"/> Yes <input type="checkbox"/> No
PROPOSED WETLAND IMPACT TYPE: []	PROPOSED WETLAND IMPACT AREA: 0 sf
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
<p>The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:</p> <ol style="list-style-type: none"> 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) 6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal) 8. Production Export (Nutrient) (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology) 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat) <p>First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i>. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i>, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.</p>	

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4,14,17	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4,6,8,9,10,13,16,18	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4,11	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
7	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3,4,7,9,12	<input type="checkbox"/> Yes <input type="checkbox"/> No	
8	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1,8,10,13	<input type="checkbox"/> Yes <input type="checkbox"/> No	
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
10	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1,2,9,10,16	<input type="checkbox"/> Yes <input type="checkbox"/> No	
11	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2,3,4,5,9	<input type="checkbox"/> Yes <input type="checkbox"/> No	
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
14	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2,3,5,6,8,11,13,20	<input type="checkbox"/> Yes <input type="checkbox"/> No	

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SECTION 6 - STREAM RESOURCES SUMMARY				
DESCRIPTION OF STREAM: RS6, Perennial Stream		STREAM TYPE (ROSGEN): B5c		
HAVE FISHERIES BEEN DOCUMENTED? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		DOES THE STREAM SYSTEM APPEAR STABLE? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
OTHER KEY ON-SITE FUNCTIONS OF NOTE: [REDACTED]				
The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.				
FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
3	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1,4,5,8,10,12,14,15,16,17	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
4	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3,6,15	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
5	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7,15	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	No discharge evident on site
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
8	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2,6,10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1,2,9,10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Opportunity exists, but no capability for sediment retention (e.g. streamside vegetation).
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3,4	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]

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14	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2,5,6,7,8,19,20	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<div style="background-color: gray; width: 40px; height: 15px; margin: 0 auto;"></div>
SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)				
<input checked="" type="checkbox"/> Wildlife and vegetation diversity/abundance list. <input checked="" type="checkbox"/> Photograph of wetland attached. <input checked="" type="checkbox"/> Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans. <input type="checkbox"/> For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)				

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Wetland Functions and Values Data Sheet

Dover – Rochester AET

Rochester

Wetland ID:	RW12	Delineator(s):	Benjamin Griffith
Cowardin Classification:	PFO1E	Date:	5/14/2020
Number of Flags:	16	Open Water:	No
Wetland Open/Closed	Open	Wetland Open Details	1, 1x
Associated Stream:	Yes	Stream ID:	RS6
Vernal Pool/Potential	No	VP/PVP ID:	N/A
Vernal Pool Identified:			
Wetland Description:	Wetland at toe of road slope adjacent to perennial stream		

Functions and Values:

Groundwater Recharge/Discharge	No
Floodflow Alteration	Suitable
Fish/Shellfish Habitat	No
Sediment/Toxicant Retention	Suitable
Nutrient Removal/Retention	Suitable
Sediment/Shoreline Stabilization	Suitable
Production Export	Suitable
Wildlife Habitat	Suitable
Recreation	No
Education/Scientific Value	No
Uniqueness/Heritage	No
Visual Quality/Aesthetics	No
Rare/Threatened and Endangered Species	No
Other	No

Dominant Plants:

Tree	Acer rubrum, Tsuga canadensis
Sapling/ Shrub	
Herb/Seedling	Onoclea sensibilis, Osmunda cinnamomea, Maianthemum canadense
Woody Vine	
Invasives	

Sketch:

Soils:

Texture:	Fine Sandy Loam
Parent Material:	Alluvium
Restrictive Layer:	Yes 6"
Hydric Soil Indicator(s):	Depleted matrix (F3)
Soil Notes:	None

Photos:



Wetland RW12 at flag 1x

Stream Data Sheet

Dover – Rochester AET

Rochester

Stream ID:	RS6	Delineator(s):	Benjamin Griffith
Cowardin Classification:	R2UB2	Rosgen Classification:	B5c
Flow Regime:	Perennial	Number of Flags:	24
Associated Wetland:	Yes	Wetland ID:	RW12
Stream Notes:	Culvert obstructed, downstream scour pool		

Stream Characteristics:

Flow Observations:	Low
Bed composition:	Sand, cobble
Bank Height (ft):	2
Average Bankfull Width (ft)	8.2
Average Depth (ft):	0.71
Riffle/Pool Complex:	Yes
Defined Bed and Bank	Yes
Shown on USGS Topo?	Yes
Flows Continuously for at least 6 Months?	Yes
Aquatic Organisms Present?	
Aquatic Vegetation Present?	
Scoured Mineral Bottom?	

Sketch:

Location:



Photos:



Stream RS6 looking upstream from culvert



**WETLANDS FUNCTIONAL ASSESSMENT
WORKSHEET**
Water Division/Land Resource Management
Wetlands Bureau



[Check the Status of your Application](#)

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: NH Department of Transportation

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)

ADJACENT LAND USE: Highway/residential

CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? Yes No

DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 30 feet

SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Benjamin Griffith (NH Certified Wetland Scientist #298)

DATE(S) OF SITE VISIT(S): 5/14/2020

DELINEATION PER ENV-WT 406 COMPLETED? Yes No

CONFIRM THAT THE EVALUATION IS BASED ON:

- Office and
 Field examination.

METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"):

- USACE Highway Methodology.
 Other scientifically supported method (enter name/ title):

irm@des.nh.gov or (603) 271-2147

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SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: RW13	LOCATION: (LAT/ LONG) 41.90220675/-70.56910576
WETLAND AREA: 8,782 SF	DOMINANT WETLAND SYSTEMS PRESENT: PFO
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 0	COWARDIN CLASS: PFO1E
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No if not, where does the wetland lie in the drainage basin? High in the watershed	IS THE WETLAND PART OF: <input type="checkbox"/> A wildlife corridor or <input type="checkbox"/> A habitat island? IS THE WETLAND HUMAN-MADE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE VERNAL POOLS PRESENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
PROPOSED WETLAND IMPACT TYPE: Fill	PROPOSED WETLAND IMPACT AREA: 8782 sf
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
<p>The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:</p> <ol style="list-style-type: none"> 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) 6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal) 8. Production Export (Nutrient) (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology) 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat) <p>First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i>. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i>, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.</p>	

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
4	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3,4,6,7,8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Ponded water, flat area
5	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4,15	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	likely recharge
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3,4,7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	lacks vegetation density for nutrient attenuation
8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
10	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1,2,5,9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Sediment/toxicants from highway
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7,8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]

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SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

- Wildlife and vegetation diversity/abundance list.
- Photograph of wetland attached.
- Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.
- For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

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Wetland Functions and Values Data Sheet

Dover – Rochester AET

Rochester

Wetland ID:	RW13	Delineator(s):	Benjamin Griffith
Cowardin Classification:	PFO1E	Date:	5/14/2020
Number of Flags:	28	Open Water:	No
Wetland Open/Closed	Closed	Wetland Open Details	N/A
Associated Stream:	No	Stream ID:	N/A
Vernal Pool/Potential	No	VP/PVP ID:	N/A
Vernal Pool Identified:			
Wetland Description:	Wetland between toe of road slope and adjacent homes		

Functions and Values:

Groundwater Recharge/Discharge	Suitable
Floodflow Alteration	Suitable
Fish/Shellfish Habitat	No
Sediment/Toxicant Retention	Suitable
Nutrient Removal/Retention	No
Sediment/Shoreline Stabilization	No
Production Export	No
Wildlife Habitat	No
Recreation	No
Education/Scientific Value	No
Uniqueness/Heritage	No
Visual Quality/Aesthetics	No
Rare/Threatened and Endangered Species	No
Other	No

Dominant Plants:

Tree	Acer rubrum
Sapling/ Shrub	Acer rubrum
Herb/Seedling	
Woody Vine	
Invasives	

Sketch:

Soils:

Texture:	Loamy/Clayey
Parent Material:	Alluvium
Restrictive Layer:	No
Hydric Soil Indicator(s):	Redox dark surface (F6)
Soil Notes:	None

Photos:



Wetland RW13 from flag 1



Wetland RW13 from flag 14



**WETLANDS FUNCTIONAL ASSESSMENT
WORKSHEET**
Water Division/Land Resource Management
Wetlands Bureau



[Check the Status of your Application](#)

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: NH Department of Transportation

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)

ADJACENT LAND USE: Highway/residential

CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? Yes No

DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 45 feet

SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Benjamin Griffith (NH Certified Wetland Scientist #298)

DATE(S) OF SITE VISIT(S): 5/14/2020

DELINEATION PER ENV-WT 406 COMPLETED? Yes No

CONFIRM THAT THE EVALUATION IS BASED ON:

- Office and
 Field examination.

METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"):

- USACE Highway Methodology.
 Other scientifically supported method (enter name/ title):

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SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: RW14	LOCATION: (LAT/ LONG) 41.90217377/-70.56912462
WETLAND AREA: 1,759 SF	DOMINANT WETLAND SYSTEMS PRESENT: PFO
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 1	COWARDIN CLASS: PFO1E
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No if not, where does the wetland lie in the drainage basin? High in the watershed	IS THE WETLAND PART OF: <input type="checkbox"/> A wildlife corridor or <input type="checkbox"/> A habitat island? IS THE WETLAND HUMAN-MADE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE VERNAL POOLS PRESENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
PROPOSED WETLAND IMPACT TYPE: Fill	PROPOSED WETLAND IMPACT AREA: 1552 sf
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
<p>The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:</p> <ol style="list-style-type: none"> 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) 6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal) 8. Production Export (Nutrient) (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology) 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat) <p>First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i>. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i>, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.</p>	

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4,14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
4	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3,4,5,6,10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	small basin on flat ground along intermittent stream
5	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4,7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
10	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1,2,4,9,10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Limited vegetation, but high potential for water retention
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3,4,5	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

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SECTION 6 - STREAM RESOURCES SUMMARY				
DESCRIPTION OF STREAM: RS7, Intermittent			STREAM TYPE (ROSGEN): B5a	
HAVE FISHERIES BEEN DOCUMENTED? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			DOES THE STREAM SYSTEM APPEAR STABLE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
OTHER KEY ON-SITE FUNCTIONS OF NOTE: [REDACTED]				
The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.				
FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
4	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4,9,15	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
5	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4,13	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1,2	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3,4	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]

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SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

- Wildlife and vegetation diversity/abundance list.
- Photograph of wetland attached.
- Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.
- For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

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Wetland Functions and Values Data Sheet

Dover – Rochester AET

Rochester

Wetland ID:	RW14	Delineator(s):	Benjamin Griffith
Cowardin Classification:	PFO1E	Date:	5/14/2020
Number of Flags:	5	Open Water:	No
Wetland Open/Closed	Closed	Wetland Open Details	N/A
Associated Stream:	Yes	Stream ID:	RS7
Vernal Pool/Potential	No	VP/PVP ID:	N/A
Vernal Pool Identified:			
Wetland Description:	Wetland at toe of road slope along Stream RS7.		

Functions and Values:

Groundwater Recharge/Discharge	No
Floodflow Alteration	Suitable
Fish/Shellfish Habitat	No
Sediment/Toxicant Retention	Suitable
Nutrient Removal/Retention	No
Sediment/Shoreline Stabilization	No
Production Export	No
Wildlife Habitat	No
Recreation	No
Education/Scientific Value	No
Uniqueness/Heritage	No
Visual Quality/Aesthetics	No
Rare/Threatened and Endangered Species	No
Other	No

Dominant Plants:

Tree	Acer rubrum
Sapling/ Shrub	
Herb/Seedling	Osmunda cinnamomeum
Woody Vine	
Invasives	

Sketch:

Soils:

Texture:	Loamy/Clayey
Parent Material:	Alluvium
Restrictive Layer:	No
Hydric Soil Indicator(s):	Redox dark surface (F6)
Soil Notes:	None

Photos:



Stream RS7 and Wetland RW14



Stream Data Sheet

Dover – Rochester AET

Rochester

Stream ID:	RS7	Delineator(s):	Benjamin Griffith
Cowardin Classification:	R4SB4	Rosgen Classification:	B5a
Flow Regime:	Intermittent	Number of Flags:	
Associated Wetland:	Yes	Wetland ID:	RW14
Stream Notes:	Culvert partly buried		

Stream Characteristics:

Sketch:

Flow Observations:	Low
Bed composition:	
Bank Height (ft):	
Average Bankfull Width (ft)	5
Average Depth (ft):	0.27
Riffle/Pool Complex:	No
Defined Bed and Bank	Yes
Shown on USGS Topo?	No
Flows Continuously for at least 6 Months?	Yes
Aquatic Organisms Present?	
Aquatic Vegetation Present?	
Scoured Mineral Bottom?	

Photos:



Stream RS7 from Flag 1A (left bank)



**WETLANDS FUNCTIONAL ASSESSMENT
WORKSHEET**
Water Division/Land Resource Management
Wetlands Bureau



[Check the Status of your Application](#)

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: NH Department of Transportation

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)

ADJACENT LAND USE: Highway/residential

CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? Yes No

DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 20 feet

SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Benjamin Griffith (NH Certified Wetland Scientist #298)

DATE(S) OF SITE VISIT(S): 5/14/2020

DELINEATION PER ENV-WT 406 COMPLETED? Yes No

CONFIRM THAT THE EVALUATION IS BASED ON:

- Office and
 Field examination.

METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"):

- USACE Highway Methodology.
 Other scientifically supported method (enter name/ title):

irm@des.nh.gov or (603) 271-2147

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SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: RW15	LOCATION: (LAT/ LONG) 41.90218949/-70.56913108
WETLAND AREA: 14,699 SF	DOMINANT WETLAND SYSTEMS PRESENT: PFO
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 0	COWARDIN CLASS: PFO1E
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No if not, where does the wetland lie in the drainage basin? [REDACTED]	IS THE WETLAND PART OF: <input type="checkbox"/> A wildlife corridor or <input type="checkbox"/> A habitat island? IS THE WETLAND HUMAN-MADE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE VERNAL POOLS PRESENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
PROPOSED WETLAND IMPACT TYPE: Fill	PROPOSED WETLAND IMPACT AREA: 9513 sf
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
<p>The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:</p> <ol style="list-style-type: none"> 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) 6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal) 8. Production Export (Nutrient) (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology) 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat) <p>First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i>. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i>, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.</p>	

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
4	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2,3,4,5,6,8,9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Sheetflow, high in watershed
5	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2,4,15	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4,5,7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
10	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1,2,4	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Toxicant effects noticeable, and no outlet
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

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

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SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

- Wildlife and vegetation diversity/abundance list.
- Photograph of wetland attached.
- Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.
- For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

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Wetland Functions and Values Data Sheet

Dover – Rochester AET

Rochester

Wetland ID:	RW15	Delineator(s):	Benjamin Griffith
Cowardin Classification:	PFO1E	Date:	5/14/2020
Number of Flags:	37	Open Water:	No
Wetland Open/Closed	Closed	Wetland Open Details	
Associated Stream:	No	Stream ID:	N/A
Vernal Pool/Potential	No	VP/PVP ID:	N/A
Vernal Pool Identified:			
Wetland Description:	Wetland between road toe of slope and adjacent homes		

Functions and Values:

Groundwater Recharge/Discharge	No
Floodflow Alteration	Suitable
Fish/Shellfish Habitat	No
Sediment/Toxicant Retention	Suitable
Nutrient Removal/Retention	No
Sediment/Shoreline Stabilization	No
Production Export	No
Wildlife Habitat	No
Recreation	No
Education/Scientific Value	No
Uniqueness/Heritage	No
Visual Quality/Aesthetics	No
Rare/Threatened and Endangered Species	No
Other	No

Dominant Plants:

Tree	Acer rubrum
Sapling/ Shrub	Vaccinium corymbosum
Herb/Seedling	Vaccinium corymbosum, Maianthemum canadense, Tsuga canadensis
Woody Vine	
Invasives	

Sketch:

Soils:

Texture: Loamy/Clayey
Parent Material: Alluvium
Restrictive Layer: No
Hydric Soil Indicator(s): Depleted below dark surface
Soil Notes: None

Photos:



RW15 ACOE Wetland Plot



**WETLANDS FUNCTIONAL ASSESSMENT
WORKSHEET**
Water Division/Land Resource Management
Wetlands Bureau



[Check the Status of your Application](#)

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: NH Department of Transportation

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)

ADJACENT LAND USE: Highway/suburban open space

CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? Yes No

DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet):

SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Benjamin Griffith (NH Certified Wetland Scientist #298)

DATE(S) OF SITE VISIT(S): 5/13/20

DELINEATION PER ENV-WT 406 COMPLETED? Yes No

CONFIRM THAT THE EVALUATION IS BASED ON:

- Office and
 Field examination.

METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"):

- USACE Highway Methodology.
 Other scientifically supported method (enter name/ title):

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SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: RW16	LOCATION: (LAT/ LONG) 41.90219871/-70.56905195
WETLAND AREA: 7185 SF	DOMINANT WETLAND SYSTEMS PRESENT: PFO
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 2	COWARDIN CLASS: PFO1E
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No if not, where does the wetland lie in the drainage basin? middle of watershed	IS THE WETLAND PART OF: <input type="checkbox"/> A wildlife corridor or <input checked="" type="checkbox"/> A habitat island? IS THE WETLAND HUMAN-MADE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE VERNAL POOLS PRESENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
PROPOSED WETLAND IMPACT TYPE: 	PROPOSED WETLAND IMPACT AREA: 0 sf
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
<p>The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:</p> <ol style="list-style-type: none"> 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) 6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal) 8. Production Export (Nutrient) (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology) 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat) <p>First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i>. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i>, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.</p>	

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
3	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8,12,14,15	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
4	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3,6,7,8,10	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
5	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3,5	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1,2,4,9,10,14	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
11	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2,3,4,5,9	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]
14	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5,6,7,8,10,18	<input type="checkbox"/> Yes <input type="checkbox"/> No	[REDACTED]

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SECTION 6 - STREAM RESOURCES SUMMARY				
DESCRIPTION OF STREAM: RS8, Intermittent Stream			STREAM TYPE (ROSGEN): C5	
HAVE FISHERIES BEEN DOCUMENTED? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			DOES THE STREAM SYSTEM APPEAR STABLE? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
OTHER KEY ON-SITE FUNCTIONS OF NOTE: [REDACTED]				
The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.				
FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Proximal to the highway
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
4	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3,4,7,8,9,13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
5	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10,13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	9,11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Visible from highway pull-off
10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]
14	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7,8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	[REDACTED]

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SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

- Wildlife and vegetation diversity/abundance list.
- Photograph of wetland attached.
- Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.
- For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

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Wetland Functions and Values Data Sheet

Dover – Rochester AET

Rochester

Wetland ID:	RW16	Delineator(s):	Benjamin Griffith
Cowardin Classification:	PFO1E	Date:	5/15/2020
Number of Flags:	11	Open Water:	No
Wetland Open/Closed	Open	Wetland Open Details	1 to RS8
Associated Stream:	Yes	Stream ID:	RS8, RS5
Vernal Pool/Potential	No	VP/PVP ID:	N/A
Vernal Pool Identified:			
Wetland Description:	Wetland at toe of road slope at confluence of RS5 and RS8		

Functions and Values:

Groundwater Recharge/Discharge	No
Floodflow Alteration	Suitable
Fish/Shellfish Habitat	Suitable
Sediment/Toxicant Retention	No
Nutrient Removal/Retention	No
Sediment/Shoreline Stabilization	Suitable
Production Export	No
Wildlife Habitat	Suitable
Recreation	No
Education/Scientific Value	No
Uniqueness/Heritage	No
Visual Quality/Aesthetics	No
Rare/Threatened and Endangered Species	No
Other	No

Dominant Plants:

Tree	Acer rubrum, Pinus strobus
Sapling/ Shrub	Cornus racemosa, Pinus strobus, Fagus grandifolia
Herb/Seedling	Onoclea sensibilis, Osmunda cinnamomea, Osmunda regalis, Athyrum angustum, Carex intumescens, Thelypteris palustris, Maianthemum canadense, Poaceae sp.
Woody Vine	
Invasives	

Sketch:

Soils:

Texture:	Sandy Loam, coarse sand
Parent Material:	Alluvium
Restrictive Layer:	8", texture change
Hydric Soil Indicator(s):	Sandy redox (S5), F6
Soil Notes:	Previous fill in wetland

Photos:



Facing southwest along toe of road slope



RW16 bordering RS8.

Stream Data Sheet

Dover – Rochester AET

Rochester

Stream ID:	RS8	Delineator(s):	Benjamin Griffith
Cowardin Classification:	R4SB4	Rosgen Classification:	C5
Flow Regime:	Intermittent	Number of Flags:	
Associated Wetland:	yes	Wetland ID:	RW16
Stream Notes:	Tributary to RS5		

Stream Characteristics:

Flow Observations:	Low to none
Bed composition:	Sand, organic
Bank Height (ft):	0.72
Average Bankfull Width (ft)	5.65
Average Depth (ft):	0.0
Riffle/Pool Complex:	No
Defined Bed and Bank	Yes
Shown on USGS Topo?	No
Flows Continuously for at least 6 Months?	No
Aquatic Organisms Present?	
Aquatic Vegetation Present?	
Scoured Mineral Bottom?	

Sketch:

Location:



Photos:



Stream RS8 looking downstream from flag 2



**WETLANDS FUNCTIONAL ASSESSMENT
WORKSHEET**
Water Division/Land Resource Management
Wetlands Bureau



[Check the Status of your Application](#)

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: NH Department of Transportation

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)	
ADJACENT LAND USE: <u>Highway/forested</u>	
CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): <input type="text"/>	
SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: <u>Benjamin Griffith (NH Certified Wetland Scientist #298)</u>	
DATE(S) OF SITE VISIT(S): <u>5/13/20</u>	DELINEATION PER ENV-WT 406 COMPLETED? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
CONFIRM THAT THE EVALUATION IS BASED ON: <input checked="" type="checkbox"/> Office and <input checked="" type="checkbox"/> Field examination.	
METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"): <input checked="" type="checkbox"/> USACE Highway Methodology. <input type="checkbox"/> Other scientifically supported method (enter name/ title): <input type="text"/>	

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SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: RW17	LOCATION: (LAT/ LONG) 41.90225696/-70.56912144
WETLAND AREA: [REDACTED]	DOMINANT WETLAND SYSTEMS PRESENT: PFO
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? [REDACTED]	COWARDIN CLASS: PFO1B
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No if not, where does the wetland lie in the drainage basin? [REDACTED]	IS THE WETLAND PART OF: <input type="checkbox"/> A wildlife corridor or <input checked="" type="checkbox"/> A habitat island? IS THE WETLAND HUMAN-MADE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE VERNAL POOLS PRESENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
PROPOSED WETLAND IMPACT TYPE: [REDACTED]	PROPOSED WETLAND IMPACT AREA: 0 sf
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
<p>The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:</p> <ol style="list-style-type: none"> 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) 6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal) 8. Production Export (Nutrient) (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology) 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat) <p>First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i>. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i>, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.</p>	

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
4	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
5	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3,4	<input type="checkbox"/> Yes <input type="checkbox"/> No	
8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1,3,8	<input type="checkbox"/> Yes <input type="checkbox"/> No	
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
10	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1,2,9	<input type="checkbox"/> Yes <input type="checkbox"/> No	
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
14	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4,5,7,8	<input type="checkbox"/> Yes <input type="checkbox"/> No	

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SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

- Wildlife and vegetation diversity/abundance list.
- Photograph of wetland attached.
- Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.
- For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

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Wetland Functions and Values Data Sheet

Dover – Rochester AET

Rochester

Wetland ID:	RW17	Delineator(s):	Benjamin Griffith
Cowardin Classification:	PFO1B	Date:	5/14/2020
Number of Flags:	5	Open Water:	No
Wetland Open/Closed	Open	Wetland Open Details	1,5
Associated Stream:	No	Stream ID:	N/A
Vernal Pool/Potential	No	VP/PVP ID:	N/A
Vernal Pool Identified:			
Wetland Description:	Wetland at toe of slope that extends beyond ROW		

Functions and Values:

Groundwater Recharge/Discharge	No
Floodflow Alteration	No
Fish/Shellfish Habitat	No
Sediment/Toxicant Retention	Suitable
Nutrient Removal/Retention	No
Sediment/Shoreline Stabilization	No
Production Export	No
Wildlife Habitat	Suitable
Recreation	No
Education/Scientific Value	No
Uniqueness/Heritage	No
Visual Quality/Aesthetics	No
Rare/Threatened and Endangered Species	No
Other	No

Dominant Plants:

Tree	Acer rubrum, Pinus strobus
Sapling/ Shrub	Vaccinium corymbosum, Quercus rubra, Hamamelis virginica, Pinus strobus
Herb/Seedling	Osmunda cinnamomea, Hamamelis virginiana, Lysimachia borealis, Maianthemum canadense, Dendrolepodium obscurum, Coptis trifolia
Woody Vine	
Invasives	

Sketch:

Soils:

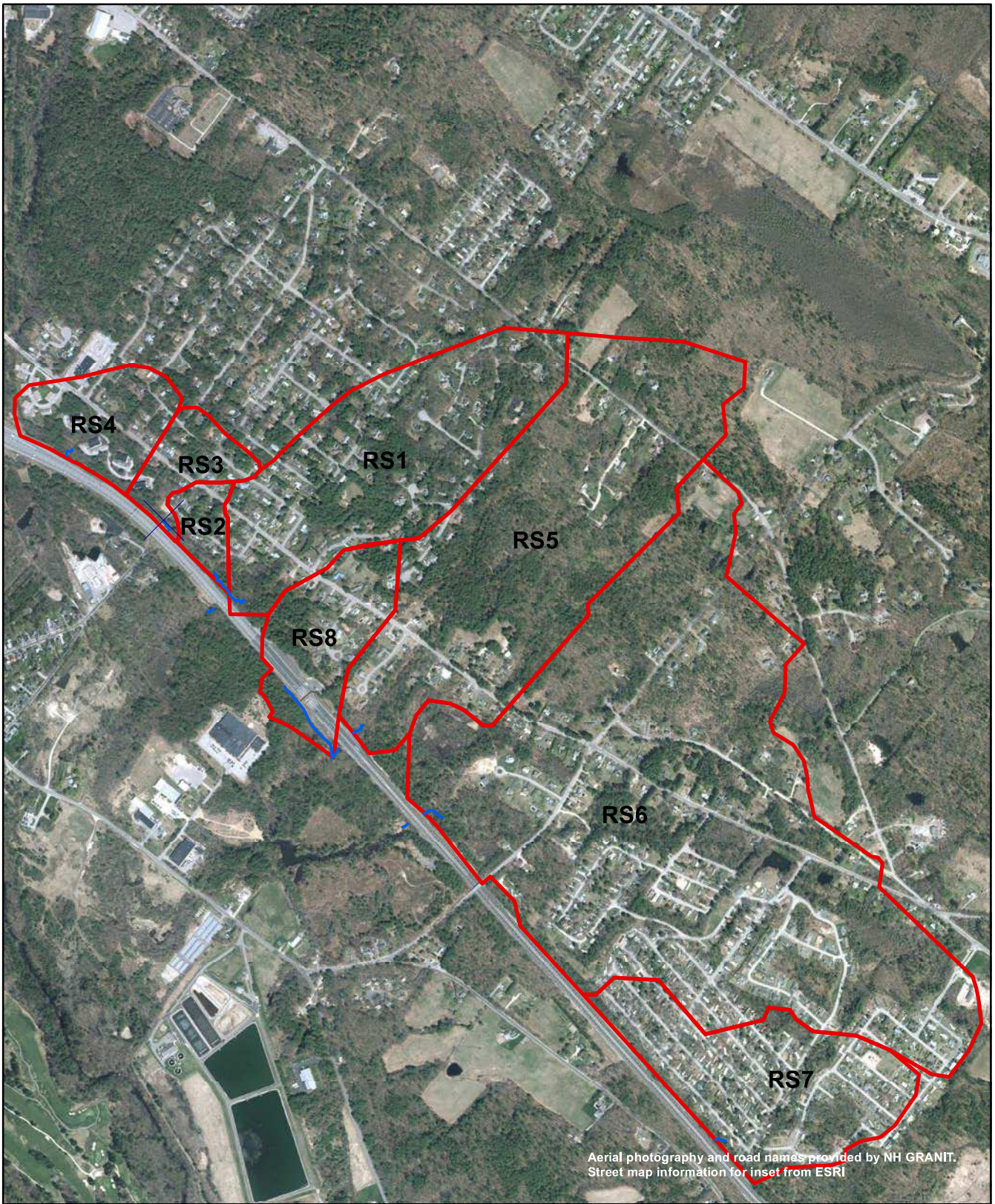
Texture: Very Fine Sandy Loam
Parent Material: Alluvium
Restrictive Layer: No
Hydric Soil Indicator(s): Depleted below dark surface
Soil Notes: None

Photos:



7/1/20. USACE Wetland data plot

Stream Drainage Basin Maps



Aerial photography and road names provided by NH GRANIT.
Street map information for inset from ESRI

Date : 1/9/2021 Drawn By: eadliver Project No: 24453.001	Stream Centerline	
	Drainage Basin	

Stream Drainage Basins Map 1
NHDOT Dover-Rochester AET
Rochester, NH

NORMANDEAU ASSOCIATES
 Environmental Consultants
 25 Nashua Road Bedford, NH 03110
 (603) 472-5191 www.normandeau.com

Summary table of Rochester stream attributes and impacts. Permanently impacted streams are highlighted in light blue, and stream crossing worksheets are included only for those streams.

Stream ID	Associated Streams	Associated Wetlands	Cowardin Classification	Drainage Area (acres)	Perennial/Intermittent	Stream Tier	Rosgen Classification	Mean Bankfull Depth (ft.)	Bankfull Width (ft.)	Culvert Size (in.)	Permanent Impacts (LF)	Temporary Impacts (LF)	Proposed Culvert Dimensions (L X W)	Notes
RS1	RS2	RW1; RW2; RW3	R2UB2	115.2	Perennial	1	C5	0.82	8.00	30	0		None	Existing culvert obstructed
RS2 ^b	RS1	RW4	R4SB4	19.2 ^a	Intermittent	1	C5	0.13	2.30	N/A	208		100' X 18"	New culvert
RS3 ^b	No	RW6; RW7	R4SB4	15.3 ^b	Intermittent	1	B5c	0.23	3.70	17.8	21		29' X 18"	Extension of existing 18" Turnpike culvert
RS4 ^b	No	RW8	R4SB4	26.9 ^b	Intermittent	1	C5	0.38	4.7	30	67		32' X 30"	Extension of existing 30" Turnpike culvert
RS5	RS8	RW11; RW16	R2UB2	153.6	Perennial	1	B5c	0.58	8.30	30	0		None	
RS6	No	RW12	R2UB2	326.4	Perennial	2	B5c	0.71	8.20	32	0		None	Existing culvert obstructed, downstream scour pool
RS7 ^b	No	RW14	R4SB4	62 ^b	Intermittent	1	B5a	0.27	5.00	17.5	73		45' X 18"	Extension of existing 18" Turnpike culvert Existing culvert inlet partly buried
RS8	RS5	RW16	R4SB4	32	Intermittent	1	C5	0.72	5.65	N/A	0	22	None	

a – deduced by subtracting the watershed of RS1 from a watershed of a point just downstream of the NB Turnpike lane on StreamStats.
b – not recognized as a stream on StreamStats. Drainage area measured approximately from LIDAR.

Stream Crossing Worksheets

WETLANDS PERMIT APPLICATION STREAM CROSSING WORKSHEET

Land Resources Management
Wetlands Bureau



RSA 482-A/ Env-Wt-900

NOTE: This worksheet can be used to accompany Wetlands Permit Applications when proposing stream crossings.

1. Tier Classifications

Determine the contributing watershed size at [USGS StreamStats](#)
Note: Plans for Tier 2 and 3 crossings shall be designed and stamped by a professional engineer who is licensed under RSA 310-A to practice in New Hampshire.

Size of contributing watershed at the crossing location:	19.2 acres
<input checked="" type="checkbox"/> Tier 1: A <i>tier 1</i> stream crossing is a crossing located on a watercourse where the contributing watershed size is less than or equal to 200 acres	
<input type="checkbox"/> Tier 2: A <i>tier 2</i> stream crossing is a crossing located on a watercourse where the contributing watershed size is greater than 200 acres and less than 640 acres	
<input type="checkbox"/> Tier 3: A <i>tier 3</i> stream crossing is a crossing that meets <u>any</u> of the following criteria: <ul style="list-style-type: none"> <input type="checkbox"/> On a watercourse where the contributing watershed is more than 640 acres <input type="checkbox"/> Within a Designated River Corridor <input type="checkbox"/> On a watercourse that is listed on the surface water assessment 305(b) report <input type="checkbox"/> Within a 100-year floodplain (see <i>section 2</i> below) <input type="checkbox"/> In a jurisdictional area having any protected species or habitat (NHB DataCheck) <input type="checkbox"/> In or within 100 feet of a Prime Wetland 	

2. 100-year Floodplain

Use the [FEMA Map Service Center](#) to determine if the crossing is located within a 100-year floodplain. Please answer the questions below:

<input checked="" type="checkbox"/> No: The proposed stream crossing <i>is not</i> within the FEMA 100-year floodplain.	
<input type="checkbox"/> Yes: The proposed project <i>is</i> within the FEMA 100-year floodplain. Zone = _____	
<input type="checkbox"/> Elevation of the 100-year floodplain at the inlet: _____ feet (FEMA El. or Modeled El.)	

3. Calculating Peak Discharge

Existing 100-year peak discharge (Q) calculated in cubic feet per second (CFS): 7.54 CFS	Calculation method: SCS, Hjelmfelt, 1991
Estimated Bankfull discharge at the crossing location: 1.78 CFS	Calculation method: Bent & Waite, 2013

➡ **Note: If Tier 1 then skip to Section 10** ⬅

4. Predicted Channel Geometry based on [Regional Hydraulic Curves](#) For Tier 2 and Tier 3 Crossings Only

Bankfull Width: _____ feet	Mean Bankfull Depth: _____ feet
Bankfull Cross Sectional Area: _____ square feet	

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5. Cross Sectional Channel Geometry:
Measurements of the Existing Stream within a Reference Reach
For Tier 2 and Tier 3 Crossings Only

Describe the reference reach location: _____

Reference reach watershed size: _____ acres

<u>Parameter</u>	<u>Cross Section 1</u> Describe bed form <i>(e.g. pool, riffle, glide)</i>	<u>Cross Section 2</u> Describe bed form <i>(e.g. pool, riffle, glide)</i>	<u>Cross Section 3</u> Describe bed form <i>(e.g. pool, riffle, glide)</i>	<u>Range</u>
Bankfull Width	_____ feet	_____ feet	_____ feet	_____ feet
Bankfull Cross Sectional Area	_____ SF	_____ SF	_____ SF	_____ SF
Mean Bankfull Depth	_____ feet	_____ feet	_____ feet	_____ feet
Width to Depth Ratio	_____	_____	_____	_____
Max Bankfull Depth	_____ feet	_____ feet	_____ feet	_____ feet
Flood Prone Width	_____ feet	_____ feet	_____ feet	_____ feet
Entrenchment Ratio	_____	_____	_____	_____

Use **Figure 1** below to determine the measurements of the Reference Reach Attributes

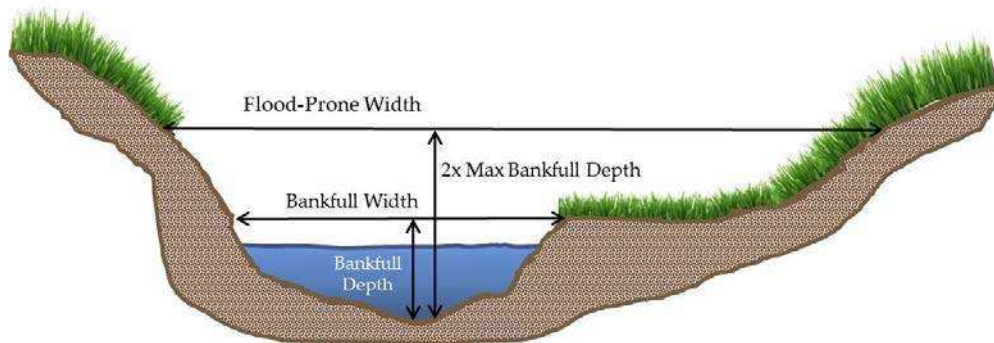


Figure 1: Determining the Reference Reach Attributes

6. Longitudinal Parameters of the Reference Reach and Crossing Location

For Tier 2 and Tier 3 Crossings Only

Average Channel Slope of the Reference Reach: _____

Average Channel Slope at the Crossing Location: _____

7. Plan View Geometry

For Tier 2 and Tier 3 Crossings Only

Sinuosity of the Reference Reach: _____

Sinuosity of the Crossing Location: _____

Note: Sinuosity is measured a distance of at least 20 times bankfull width, or 2 meander belt widths

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8. Substrate Classification based on Field Observations

For Tier 2 and Tier 3 Crossings Only

% of reach that is <i>bedrock</i>	_____ %
% of reach that is <i>boulder</i>	_____ %
% of reach that is <i>cobble</i>	_____ %
% of reach that is <i>gravel</i>	_____ %
% of reach that is <i>sand</i>	_____ %
% of reach that is <i>silt</i>	_____ %

9. Stream Type of Reference Reach

For Tier 2 and Tier 3 Crossings Only

Stream Type of Reference Reach:	_____
---------------------------------	-------

Refer to Rosgen Classification Chart (Figure 2) below

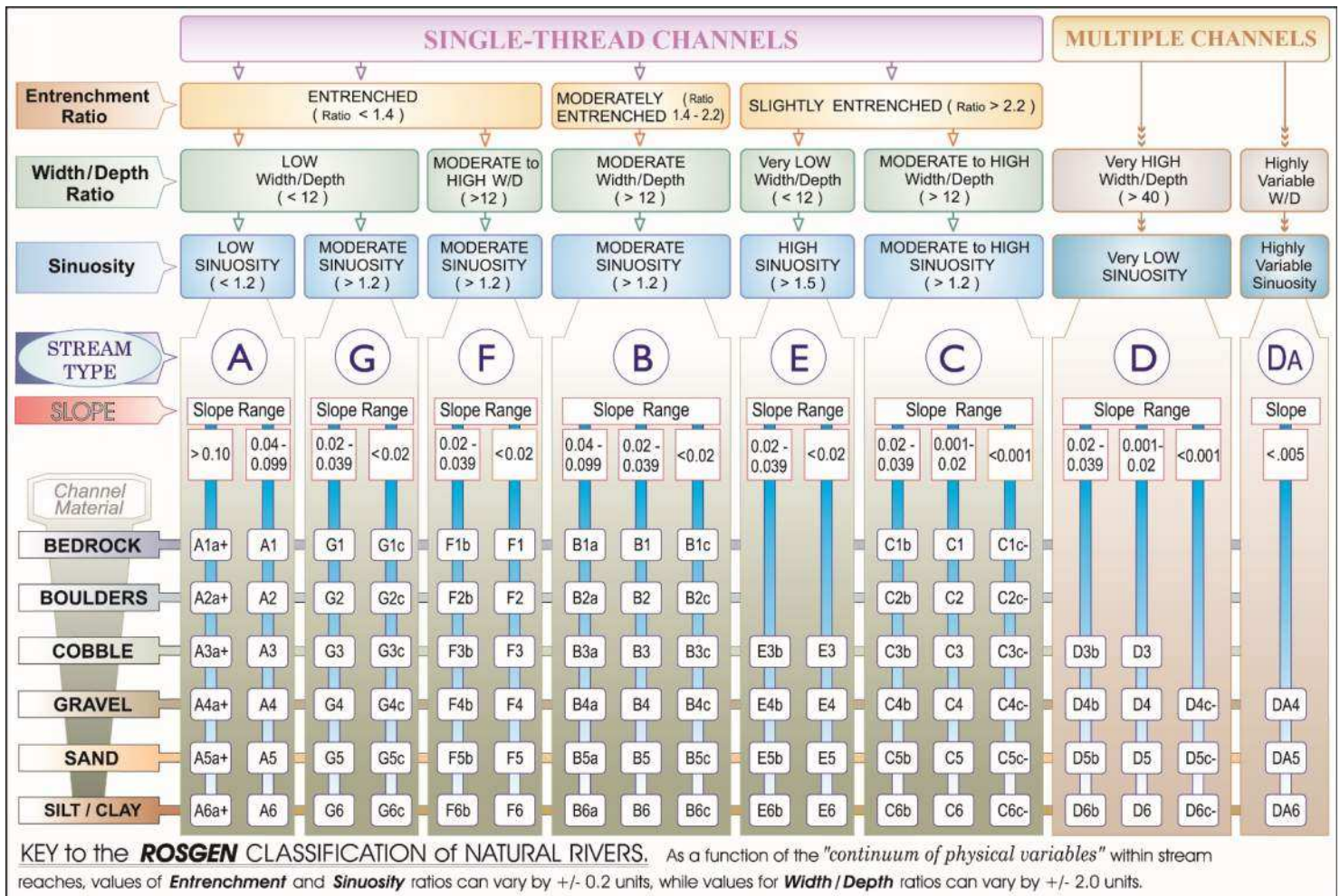


Figure 2. Reference from Applied River Morphology, Rosgen, 1996

10. Crossing Structure Metrics

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Existing Conditions

Existing Structure Type:	<input type="checkbox"/> Bridge Span <input type="checkbox"/> Pipe Arch <input type="checkbox"/> Open-bottom Culvert <input type="checkbox"/> Closed-bottom Culvert <input type="checkbox"/> Closed-bottom Culvert with stream simulation <input checked="" type="checkbox"/> Other: <u> NONE </u>	
Existing Crossing Span <i>(perpendicular to flow)</i>	<u> N/A </u> feet	Culvert Diameter <u> N/A </u> feet Inlet Elevation <u> N/A </u>
Existing Crossing Length <i>(parallel to flow)</i>	<u> N/A </u> feet	Outlet Elevation <u> N/A </u> Culvert Slope <u> N/A </u>

Proposed Conditions

Proposed Structure Type:	Tier 1	Tier 2	Tier 3	Alternative Design
Bridge Span	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pipe Arch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closed-bottom Culvert	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Open-bottom Culvert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closed-bottom Culvert with stream simulation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proposed structure Span <i>(perpendicular to flow)</i>	<u> N/A </u> feet		Culvert Diameter <u> 1.5 </u> feet Inlet Elevation <u> 181.75 </u>	
Proposed Structure Length <i>(parallel to flow)</i>	<u> 100 </u> feet		Outlet Elevation <u> 180.00 </u> Culvert Slope <u> 1.75% </u>	
Proposed Entrenchment Ratio* <i>For Tier 2 and Tier 3 Crossings Only</i>	<u> N/A </u>		<i>Note: To accommodate the entrenchment ratio, floodplain drainage structures may be utilized</i>	

* Note: Proposed Entrenchment Ratio must meet the minimum ratio for each stream type listed in **Figure 3**, otherwise the applicant must address the Alternative Design criteria listed in Env-Wt 904.09

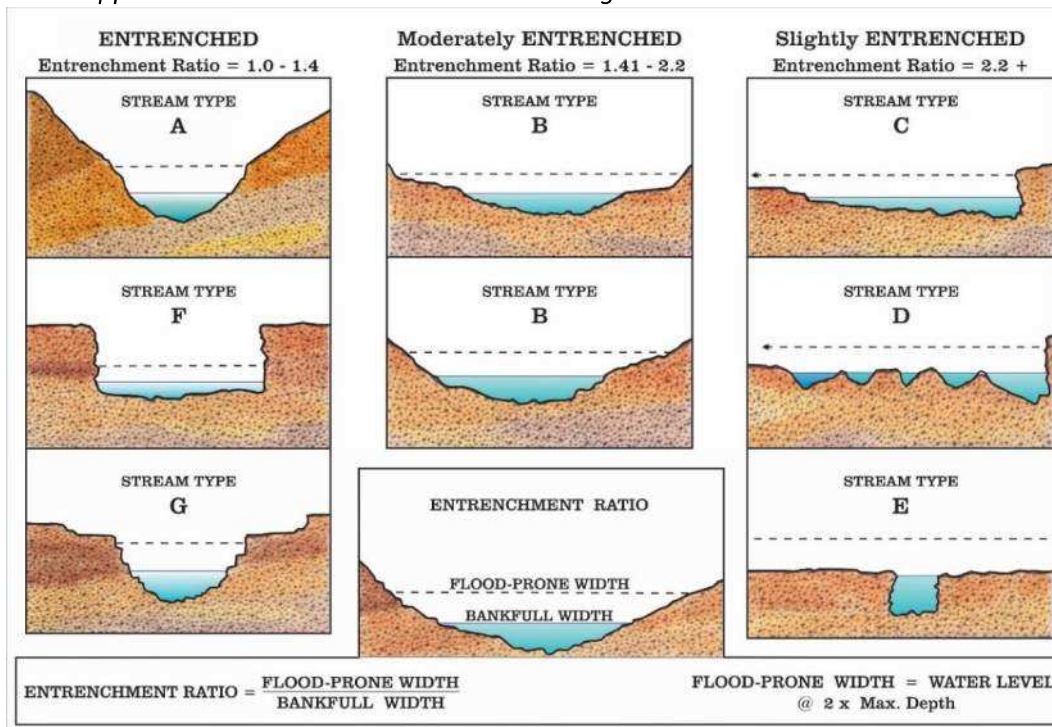


Figure 3. Reference from Applied River Morphology, Rosgen, 1996

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11. Crossing Structure Hydraulics		
	Existing	Proposed
100 year flood stage elevation at inlet	_____ N/A _____	_Same as Existing_
Flow velocity at outlet in feet per second (FPS)	_____ N/A _____	_8.0 (100-year)_
Calculated 100 year peak discharge (Q) for the <u>proposed</u> structure in CFS		_7.54_
Calculated 50 year peak discharge (Q) for the <u>proposed</u> structure in CFS		_6.71_

12. Crossing Structure Openness Ratio
<i>For Tier 2 and Tier 3 Crossings Only</i>
<p>Crossing Structure Openness Ratio = _____</p> <p><i>Openness box culvert = (height x width)/length</i></p> <p><i>Openness round culvert = (3.14 x radius²)/length</i></p>

13. General Design Considerations
Env-Wt 904.01 requires all stream crossings to be designed and constructed according to the following requirements. Check each box if the project meets these general design considerations.
<i>All stream crossings shall be designed and constructed so as to:</i>
<input checked="" type="checkbox"/> Not be a barrier to sediment transport.
<input checked="" type="checkbox"/> Prevent the restriction of high flows and maintain existing low flows.
<input checked="" type="checkbox"/> Not obstruct or otherwise substantially disrupt the movement of aquatic life indigenous to the waterbody beyond the actual duration of construction.
<input checked="" type="checkbox"/> Not cause an increase in the frequency of flooding or overtopping of banks.
<input checked="" type="checkbox"/> Preserve watercourse connectivity where it currently exists.
<input type="checkbox"/> Restore watercourse connectivity where: (1) Connectivity previously was disrupted as a result of human activity(ies); and (2) Restoration of connectivity will benefit aquatic life upstream or downstream of the crossing, or both.
<input checked="" type="checkbox"/> Not cause erosion, aggradation, or scouring upstream or downstream of the crossing.
<input checked="" type="checkbox"/> Not cause water quality degradation.

14. Tier Specific Design Criteria
Stream crossings must be designed in accordance with the Tier specific design criteria listed in Part Env-Wt 904.
<input checked="" type="checkbox"/> The proposed project meets the Tier specific design criteria listed in Part Env-Wt 904 and each requirement has been addressed in the plans and as part of the wetland application.

15. Alternative Design
<p>NOTE: If the proposed crossing does not meet all of the general design considerations, the Tier specific design criteria, or the minimum entrenchment ratio for each given stream type listed in Figure 3, then an alternative design plan and associated requirements must be addressed pursuant to Env-Wt 904.09.</p> <p><input type="checkbox"/> I have submitted an alternative design and addressed each requirement listed in Env-Wt 904.09</p>



WETLANDS PERMIT APPLICATION STREAM CROSSING WORKSHEET

Land Resources Management
Wetlands Bureau



RSA 482-A/ Env-Wt-900

NOTE: This worksheet can be used to accompany Wetlands Permit Applications when proposing stream crossings.

1. Tier Classifications

Determine the contributing watershed size at [USGS StreamStats](#)
Note: Plans for Tier 2 and 3 crossings shall be designed and stamped by a professional engineer who is licensed under RSA 310-A to practice in New Hampshire.

Size of contributing watershed at the crossing location:	15.36 acres
<input checked="" type="checkbox"/> Tier 1: A <i>tier 1</i> stream crossing is a crossing located on a watercourse where the contributing watershed size is less than or equal to 200 acres	
<input type="checkbox"/> Tier 2: A <i>tier 2</i> stream crossing is a crossing located on a watercourse where the contributing watershed size is greater than 200 acres and less than 640 acres	
<input type="checkbox"/> Tier 3: A <i>tier 3</i> stream crossing is a crossing that meets <u>any</u> of the following criteria: <ul style="list-style-type: none"> <input type="checkbox"/> On a watercourse where the contributing watershed is more than 640 acres <input type="checkbox"/> Within a Designated River Corridor <input type="checkbox"/> On a watercourse that is listed on the surface water assessment 305(b) report <input type="checkbox"/> Within a 100-year floodplain (see <i>section 2</i> below) <input type="checkbox"/> In a jurisdictional area having any protected species or habitat (NHB DataCheck) <input type="checkbox"/> In or within 100 feet of a Prime Wetland 	

2. 100-year Floodplain

Use the [FEMA Map Service Center](#) to determine if the crossing is located within a 100-year floodplain. Please answer the questions below:

<input checked="" type="checkbox"/> No: The proposed stream crossing <i>is not</i> within the FEMA 100-year floodplain.
<input type="checkbox"/> Yes: The proposed project <i>is</i> within the FEMA 100-year floodplain. Zone = _____ <input type="checkbox"/> Elevation of the 100-year floodplain at the inlet: _____ feet (FEMA El. or Modeled El.)

3. Calculating Peak Discharge

Existing 100-year peak discharge (Q) calculated in cubic feet per second (CFS): 34.65 CFS	Calculation method: SCS, Hjelmfelt, 1991
Estimated Bankfull discharge at the crossing location: 1.18 CFS	Calculation method: Bent & Waite, 2013

➡ **Note: If Tier 1 then skip to Section 10** ←

4. Predicted Channel Geometry based on [Regional Hydraulic Curves](#) For Tier 2 and Tier 3 Crossings Only

Bankfull Width: _____ feet	Mean Bankfull Depth: _____ feet
Bankfull Cross Sectional Area: _____ square feet	

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5. Cross Sectional Channel Geometry:
Measurements of the Existing Stream within a Reference Reach
For Tier 2 and Tier 3 Crossings Only

Describe the reference reach location: _____

Reference reach watershed size: _____ acres

<u>Parameter</u>	<u>Cross Section 1</u> Describe bed form <i>(e.g. pool, riffle, glide)</i>	<u>Cross Section 2</u> Describe bed form <i>(e.g. pool, riffle, glide)</i>	<u>Cross Section 3</u> Describe bed form <i>(e.g. pool, riffle, glide)</i>	<u>Range</u>
Bankfull Width	_____ feet	_____ feet	_____ feet	_____ feet
Bankfull Cross Sectional Area	_____ SF	_____ SF	_____ SF	_____ SF
Mean Bankfull Depth	_____ feet	_____ feet	_____ feet	_____ feet
Width to Depth Ratio	_____	_____	_____	_____
Max Bankfull Depth	_____ feet	_____ feet	_____ feet	_____ feet
Flood Prone Width	_____ feet	_____ feet	_____ feet	_____ feet
Entrenchment Ratio	_____	_____	_____	_____

Use **Figure 1** below to determine the measurements of the Reference Reach Attributes

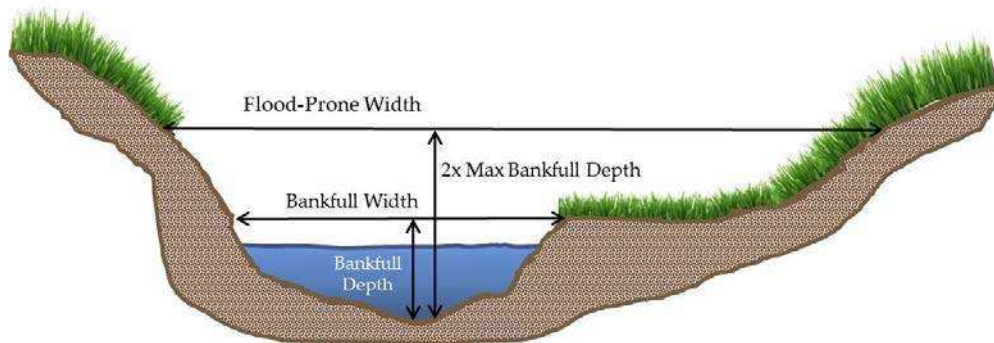


Figure 1: Determining the Reference Reach Attributes

6. Longitudinal Parameters of the Reference Reach and Crossing Location

For Tier 2 and Tier 3 Crossings Only

Average Channel Slope of the Reference Reach: _____

Average Channel Slope at the Crossing Location: _____

7. Plan View Geometry

For Tier 2 and Tier 3 Crossings Only

Sinuosity of the Reference Reach: _____

Sinuosity of the Crossing Location: _____

Note: Sinuosity is measured a distance of at least 20 times bankfull width, or 2 meander belt widths

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8. Substrate Classification based on Field Observations

For Tier 2 and Tier 3 Crossings Only

% of reach that is <i>bedrock</i>	_____ %
% of reach that is <i>boulder</i>	_____ %
% of reach that is <i>cobble</i>	_____ %
% of reach that is <i>gravel</i>	_____ %
% of reach that is <i>sand</i>	_____ %
% of reach that is <i>silt</i>	_____ %

9. Stream Type of Reference Reach

For Tier 2 and Tier 3 Crossings Only

Stream Type of Reference Reach:	_____
---------------------------------	-------

Refer to Rosgen Classification Chart (Figure 2) below

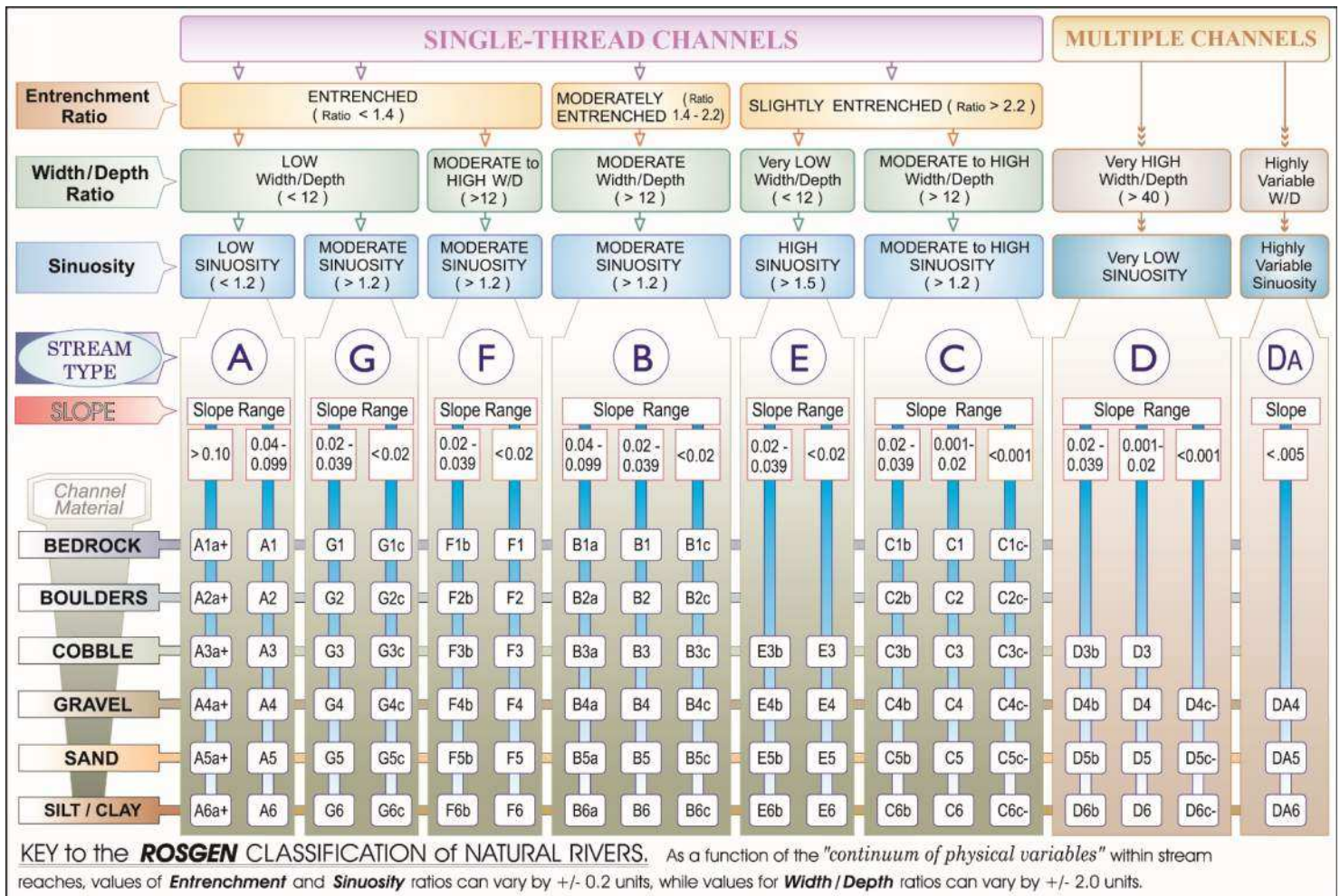


Figure 2. Reference from Applied River Morphology, Rosgen, 1996

10. Crossing Structure Metrics

lrm@des.nh.gov or (603) 271-2147

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Existing Conditions

Existing Structure Type:	<input type="checkbox"/> Bridge Span	<input type="checkbox"/> Pipe Arch	<input type="checkbox"/> Open-bottom Culvert	<input checked="" type="checkbox"/> Closed-bottom Culvert	<input type="checkbox"/> Closed-bottom Culvert with stream simulation	<input type="checkbox"/> Other: _____
Existing Crossing Span <i>(perpendicular to flow)</i>	____N/A____ feet		Culvert Diameter ____1.5____ feet			
Existing Crossing Length <i>(parallel to flow)</i>	____192____ feet		Inlet Elevation ____189.19____			
			Outlet Elevation ____188.04 (Assumed)____			
			Culvert Slope ____0.6%____			

Proposed Conditions

Proposed Structure Type:	Tier 1	Tier 2	Tier 3	Alternative Design	
Bridge Span	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Pipe Arch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Closed-bottom Culvert	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Open-bottom Culvert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Closed-bottom Culvert with stream simulation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Proposed structure Span <i>(perpendicular to flow)</i>	____N/A____ feet		Culvert Diameter ____1.5____ feet		
			Inlet Elevation ____189.29____		
Proposed Structure Length <i>(parallel to flow)</i>	____221____ feet		Outlet Elevation ____188.04 (Existing)____		
			Culvert Slope ____0.6% (Existing)____		
Proposed Entrenchment Ratio* <i>For Tier 2 and Tier 3 Crossings Only</i>	_____		<i>Note: To accommodate the entrenchment ratio, floodplain drainage structures may be utilized</i>		

* Note: Proposed Entrenchment Ratio must meet the minimum ratio for each stream type listed in **Figure 3**, otherwise the applicant must address the Alternative Design criteria listed in Env-Wt 904.09

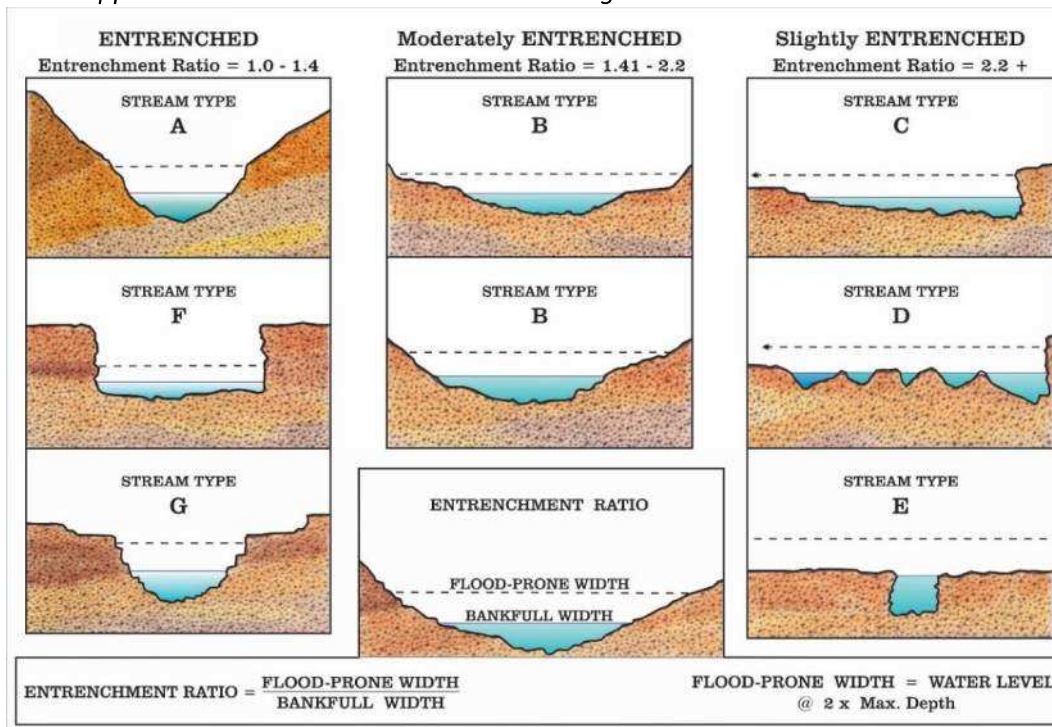


Figure 3. Reference from Applied River Morphology, Rosgen, 1996

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11. Crossing Structure Hydraulics		
	Existing	Proposed
100 year flood stage elevation at inlet	<u> 197.14 </u>	<u> 197.14 </u>
Flow velocity at outlet in feet per second (FPS)	<u> 6.6 (100-year) </u>	<u> 6.6 (100-year) </u>
Calculated 100 year peak discharge (Q) for the <u>proposed</u> structure in CFS		<u> 34.65 </u>
Calculated 50 year peak discharge (Q) for the <u>proposed</u> structure in CFS		<u> 25.00 </u>

12. Crossing Structure Openness Ratio
<i>For Tier 2 and Tier 3 Crossings Only</i>
<p>Crossing Structure Openness Ratio = _____</p> <p><i>Openness box culvert = (height x width)/length</i></p> <p><i>Openness round culvert = (3.14 x radius²)/length</i></p>

13. General Design Considerations
Env-Wt 904.01 requires all stream crossings to be designed and constructed according to the following requirements. Check each box if the project meets these general design considerations.
<i>All stream crossings shall be designed and constructed so as to:</i>
<input checked="" type="checkbox"/> Not be a barrier to sediment transport.
<input checked="" type="checkbox"/> Prevent the restriction of high flows and maintain existing low flows.
<input checked="" type="checkbox"/> Not obstruct or otherwise substantially disrupt the movement of aquatic life indigenous to the waterbody beyond the actual duration of construction.
<input checked="" type="checkbox"/> Not cause an increase in the frequency of flooding or overtopping of banks.
<input checked="" type="checkbox"/> Preserve watercourse connectivity where it currently exists.
<input type="checkbox"/> Restore watercourse connectivity where: (1) Connectivity previously was disrupted as a result of human activity(ies); and (2) Restoration of connectivity will benefit aquatic life upstream or downstream of the crossing, or both.
<input checked="" type="checkbox"/> Not cause erosion, aggradation, or scouring upstream or downstream of the crossing.
<input checked="" type="checkbox"/> Not cause water quality degradation.

14. Tier Specific Design Criteria
Stream crossings must be designed in accordance with the Tier specific design criteria listed in Part Env-Wt 904.
<input checked="" type="checkbox"/> The proposed project meets the Tier specific design criteria listed in Part Env-Wt 904 and each requirement has been addressed in the plans and as part of the wetland application.

15. Alternative Design
<p>NOTE: If the proposed crossing does not meet all of the general design considerations, the Tier specific design criteria, or the minimum entrenchment ratio for each given stream type listed in Figure 3, then an alternative design plan and associated requirements must be addressed pursuant to Env-Wt 904.09.</p> <input type="checkbox"/> I have submitted an alternative design and addressed each requirement listed in Env-Wt 904.09



**WETLANDS PERMIT APPLICATION
STREAM CROSSING WORKSHEET**
Land Resources Management
Wetlands Bureau



RSA 482-A/ Env-Wt-900

NOTE: This worksheet can be used to accompany Wetlands Permit Applications when proposing stream crossings.

1. Tier Classifications
Determine the contributing watershed size at [USGS StreamStats](#)
Note: Plans for Tier 2 and 3 crossings shall be designed and stamped by a professional engineer who is licensed under RSA 310-A to practice in New Hampshire.

Size of contributing watershed at the crossing location:	26.88 acres
<input checked="" type="checkbox"/> Tier 1: A tier 1 stream crossing is a crossing located on a watercourse where the contributing watershed size is less than or equal to 200 acres	
<input type="checkbox"/> Tier 2: A tier 2 stream crossing is a crossing located on a watercourse where the contributing watershed size is greater than 200 acres and less than 640 acres	
<input type="checkbox"/> Tier 3: A tier 3 stream crossing is a crossing that meets <u>any</u> of the following criteria: <ul style="list-style-type: none"> <input type="checkbox"/> On a watercourse where the contributing watershed is more than 640 acres <input type="checkbox"/> Within a Designated River Corridor <input type="checkbox"/> On a watercourse that is listed on the surface water assessment 305(b) report <input type="checkbox"/> Within a 100-year floodplain (see section 2 below) <input type="checkbox"/> In a jurisdictional area having any protected species or habitat (NHB DataCheck) <input type="checkbox"/> In or within 100 feet of a Prime Wetland 	

2. 100-year Floodplain

Use the [FEMA Map Service Center](#) to determine if the crossing is located within a 100-year floodplain. Please answer the questions below:

<input checked="" type="checkbox"/> No: The proposed stream crossing <i>is not</i> within the FEMA 100-year floodplain.
<input type="checkbox"/> Yes: The proposed project <i>is</i> within the FEMA 100-year floodplain. Zone = _____ <input type="checkbox"/> Elevation of the 100-year floodplain at the inlet: _____ feet (FEMA El. or Modeled El.)

3. Calculating Peak Discharge

Existing 100-year peak discharge (Q) calculated in cubic feet per second (CFS): 10.59 CFS	Calculation method: SCS, Hjelmfelt, 1991
Estimated Bankfull discharge at the crossing location: 2.75 CFS	Calculation method: Bent & Waite, 2013

➡ **Note: If Tier 1 then skip to Section 10** ⬅

4. Predicted Channel Geometry based on [Regional Hydraulic Curves](#)
For Tier 2 and Tier 3 Crossings Only

Bankfull Width: _____ feet	Mean Bankfull Depth: _____ feet
Bankfull Cross Sectional Area: _____ square feet	

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www.des.nh.gov

5. Cross Sectional Channel Geometry:
Measurements of the Existing Stream within a Reference Reach
For Tier 2 and Tier 3 Crossings Only

Describe the reference reach location: _____

Reference reach watershed size: _____ acres

<u>Parameter</u>	<u>Cross Section 1</u> Describe bed form <i>(e.g. pool, riffle, glide)</i>	<u>Cross Section 2</u> Describe bed form <i>(e.g. pool, riffle, glide)</i>	<u>Cross Section 3</u> Describe bed form <i>(e.g. pool, riffle, glide)</i>	<u>Range</u>
Bankfull Width	_____ feet	_____ feet	_____ feet	_____ feet
Bankfull Cross Sectional Area	_____ SF	_____ SF	_____ SF	_____ SF
Mean Bankfull Depth	_____ feet	_____ feet	_____ feet	_____ feet
Width to Depth Ratio	_____	_____	_____	_____
Max Bankfull Depth	_____ feet	_____ feet	_____ feet	_____ feet
Flood Prone Width	_____ feet	_____ feet	_____ feet	_____ feet
Entrenchment Ratio	_____	_____	_____	_____

Use **Figure 1** below to determine the measurements of the Reference Reach Attributes

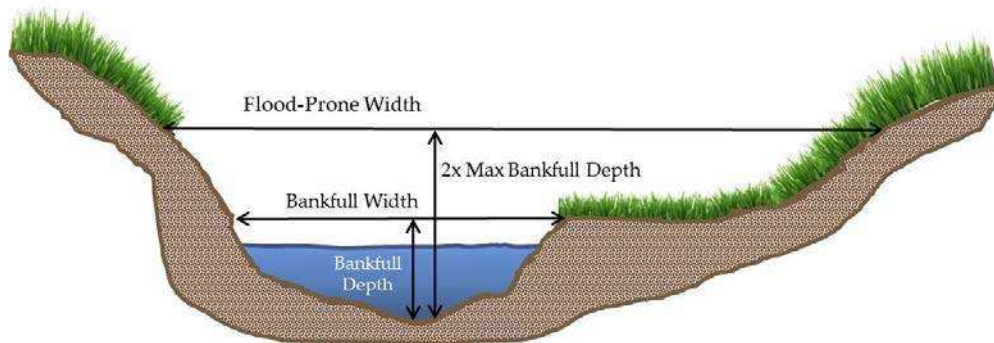


Figure 1: Determining the Reference Reach Attributes

6. Longitudinal Parameters of the Reference Reach and Crossing Location

For Tier 2 and Tier 3 Crossings Only

Average Channel Slope of the Reference Reach: _____

Average Channel Slope at the Crossing Location: _____

7. Plan View Geometry

For Tier 2 and Tier 3 Crossings Only

Sinuosity of the Reference Reach: _____

Sinuosity of the Crossing Location: _____

Note: Sinuosity is measured a distance of at least 20 times bankfull width, or 2 meander belt widths

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8. Substrate Classification based on Field Observations

For Tier 2 and Tier 3 Crossings Only

% of reach that is <i>bedrock</i>	_____ %
% of reach that is <i>boulder</i>	_____ %
% of reach that is <i>cobble</i>	_____ %
% of reach that is <i>gravel</i>	_____ %
% of reach that is <i>sand</i>	_____ %
% of reach that is <i>silt</i>	_____ %

9. Stream Type of Reference Reach

For Tier 2 and Tier 3 Crossings Only

Stream Type of Reference Reach:	_____
---------------------------------	-------

Refer to Rosgen Classification Chart (Figure 2) below

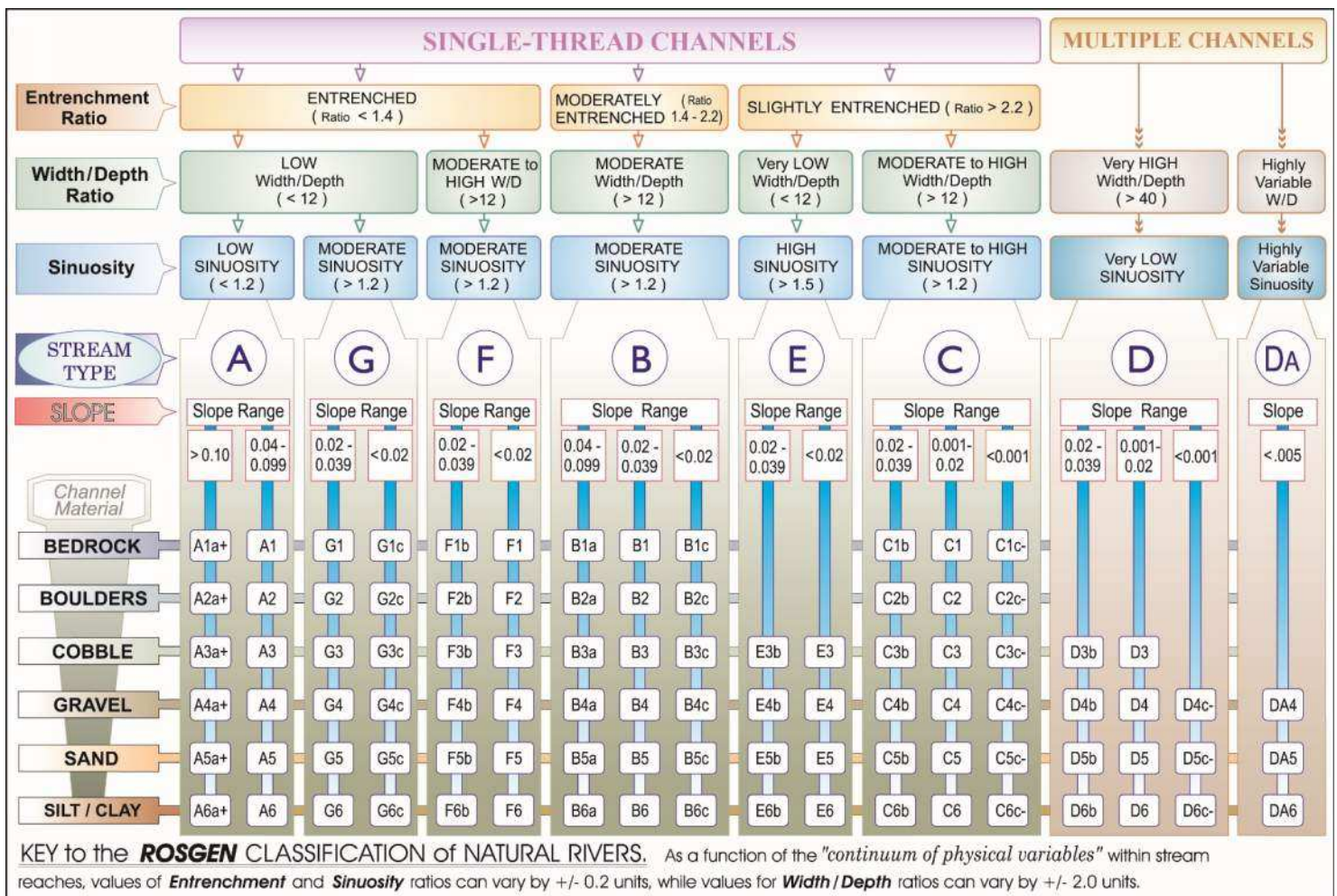


Figure 2. Reference from Applied River Morphology, Rosgen, 1996

10. Crossing Structure Metrics

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Existing Conditions

Existing Structure Type:	<input type="checkbox"/> Bridge Span <input type="checkbox"/> Pipe Arch <input type="checkbox"/> Open-bottom Culvert <input checked="" type="checkbox"/> Closed-bottom Culvert <input type="checkbox"/> Closed-bottom Culvert with stream simulation <input type="checkbox"/> Other: _____	
Existing Crossing Span <i>(perpendicular to flow)</i>	_____ N/A _____ feet	Culvert Diameter _____ 2.5 _____ feet Inlet Elevation _____ 190.29 _____
Existing Crossing Length <i>(parallel to flow)</i>	_____ 193 _____ feet	Outlet Elevation _____ 188.94 _____ Culvert Slope _____ 0.7% _____

Proposed Conditions

Proposed Structure Type:	Tier 1	Tier 2	Tier 3	Alternative Design
Bridge Span	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pipe Arch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closed-bottom Culvert	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Open-bottom Culvert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closed-bottom Culvert with stream simulation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proposed structure Span <i>(perpendicular to flow)</i>	_____ N/A _____ feet		Culvert Diameter _____ 2.5 _____ feet Inlet Elevation _____ 190.46 _____	
Proposed Structure Length <i>(parallel to flow)</i>	_____ 225 _____ feet		Outlet Elevation _____ 188.94 (Existing) _____ Culvert Slope _____ 0.7% _____	
Proposed Entrenchment Ratio* <i>For Tier 2 and Tier 3 Crossings Only</i>	_____		<i>Note: To accommodate the entrenchment ratio, floodplain drainage structures may be utilized</i>	

* Note: Proposed Entrenchment Ratio must meet the minimum ratio for each stream type listed in **Figure 3**, otherwise the applicant must address the Alternative Design criteria listed in Env-Wt 904.09

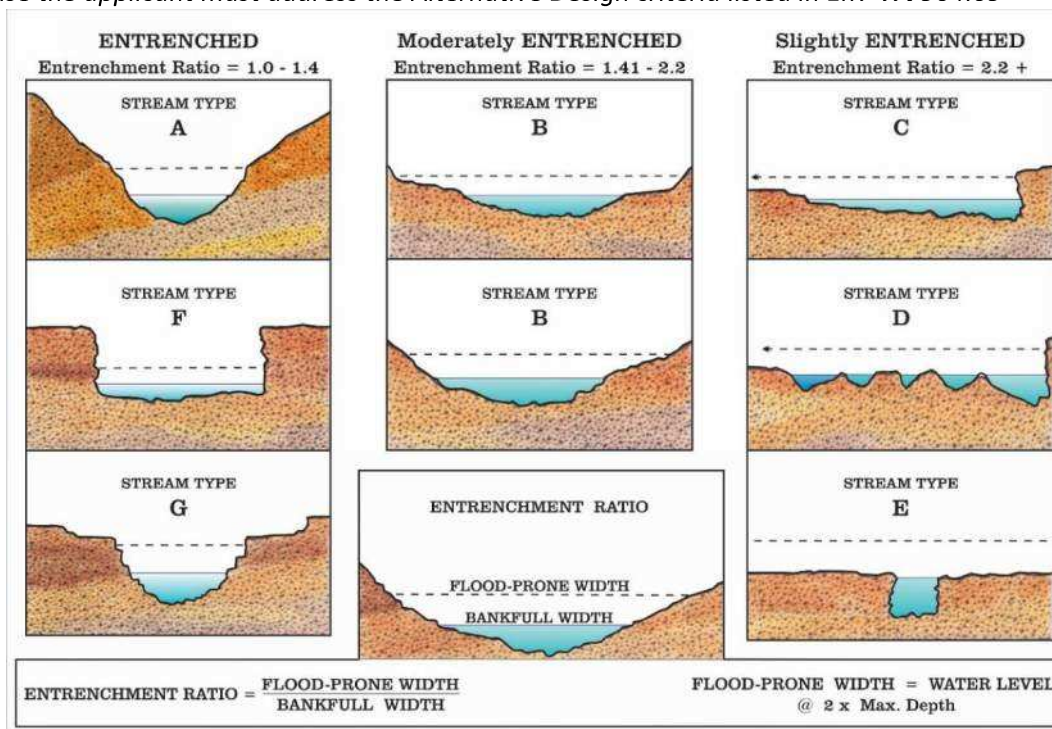


Figure 3. Reference from Applied River Morphology, Rosgen, 1996

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11. Crossing Structure Hydraulics		
	Existing	Proposed
100 year flood stage elevation at inlet	<u> 191.41 </u>	<u> 191.41 </u>
Flow velocity at outlet in feet per second (FPS)	<u> 4.2 (100-year) </u>	<u> 4.2 (100-year) </u>
Calculated 100 year peak discharge (Q) for the <u>proposed</u> structure in CFS		<u> 10.59 </u>
Calculated 50 year peak discharge (Q) for the <u>proposed</u> structure in CFS		<u> 6.99 </u>

12. Crossing Structure Openness Ratio
<i>For Tier 2 and Tier 3 Crossings Only</i>
<p>Crossing Structure Openness Ratio = _____</p> <p><i>Openness box culvert = (height x width)/length</i></p> <p><i>Openness round culvert = (3.14 x radius²)/length</i></p>

13. General Design Considerations
Env-Wt 904.01 requires all stream crossings to be designed and constructed according to the following requirements. Check each box if the project meets these general design considerations.
<i>All stream crossings shall be designed and constructed so as to:</i>
<input checked="" type="checkbox"/> Not be a barrier to sediment transport.
<input checked="" type="checkbox"/> Prevent the restriction of high flows and maintain existing low flows.
<input checked="" type="checkbox"/> Not obstruct or otherwise substantially disrupt the movement of aquatic life indigenous to the waterbody beyond the actual duration of construction.
<input checked="" type="checkbox"/> Not cause an increase in the frequency of flooding or overtopping of banks.
<input checked="" type="checkbox"/> Preserve watercourse connectivity where it currently exists.
<input type="checkbox"/> Restore watercourse connectivity where: (1) Connectivity previously was disrupted as a result of human activity(ies); and (2) Restoration of connectivity will benefit aquatic life upstream or downstream of the crossing, or both.
<input checked="" type="checkbox"/> Not cause erosion, aggradation, or scouring upstream or downstream of the crossing.
<input checked="" type="checkbox"/> Not cause water quality degradation.

14. Tier Specific Design Criteria
Stream crossings must be designed in accordance with the Tier specific design criteria listed in Part Env-Wt 904.
<input checked="" type="checkbox"/> The proposed project meets the Tier specific design criteria listed in Part Env-Wt 904 and each requirement has been addressed in the plans and as part of the wetland application.

15. Alternative Design
<p>NOTE: If the proposed crossing does not meet all of the general design considerations, the Tier specific design criteria, or the minimum entrenchment ratio for each given stream type listed in Figure 3, then an alternative design plan and associated requirements must be addressed pursuant to Env-Wt 904.09.</p> <p><input type="checkbox"/> I have submitted an alternative design and addressed each requirement listed in Env-Wt 904.09</p>

WETLANDS PERMIT APPLICATION STREAM CROSSING WORKSHEET

Land Resources Management
Wetlands Bureau



RSA 482-A/ Env-Wt-900

NOTE: This worksheet can be used to accompany Wetlands Permit Applications when proposing stream crossings.

1. Tier Classifications

Determine the contributing watershed size at [USGS StreamStats](#)
Note: Plans for Tier 2 and 3 crossings shall be designed and stamped by a professional engineer who is licensed under RSA 310-A to practice in New Hampshire.

Size of contributing watershed at the crossing location:	62 acres
<input checked="" type="checkbox"/> Tier 1: A <i>tier 1</i> stream crossing is a crossing located on a watercourse where the contributing watershed size is less than or equal to 200 acres	
<input type="checkbox"/> Tier 2: A <i>tier 2</i> stream crossing is a crossing located on a watercourse where the contributing watershed size is greater than 200 acres and less than 640 acres	
<input type="checkbox"/> Tier 3: A <i>tier 3</i> stream crossing is a crossing that meets <u>any</u> of the following criteria: <ul style="list-style-type: none"> <input type="checkbox"/> On a watercourse where the contributing watershed is more than 640 acres <input type="checkbox"/> Within a Designated River Corridor <input type="checkbox"/> On a watercourse that is listed on the surface water assessment 305(b) report <input type="checkbox"/> Within a 100-year floodplain (see <i>section 2</i> below) <input type="checkbox"/> In a jurisdictional area having any protected species or habitat (NHB DataCheck) <input type="checkbox"/> In or within 100 feet of a Prime Wetland 	

2. 100-year Floodplain

Use the [FEMA Map Service Center](#) to determine if the crossing is located within a 100-year floodplain. Please answer the questions below:

<input checked="" type="checkbox"/> No: The proposed stream crossing <i>is not</i> within the FEMA 100-year floodplain.
<input type="checkbox"/> Yes: The proposed project <i>is</i> within the FEMA 100-year floodplain. Zone = _____ <input type="checkbox"/> Elevation of the 100-year floodplain at the inlet: _____ feet (FEMA El. or Modeled El.)

3. Calculating Peak Discharge

Existing 100-year peak discharge (Q) calculated in cubic feet per second (CFS): 25.68 CFS	Calculation method: SCS, Hjelmfelt, 1991
Estimated Bankfull discharge at the crossing location: 42.4 CFS	Calculation method: Bent & Waite, 2013

➡ **Note: If Tier 1 then skip to Section 10** ⬅

4. Predicted Channel Geometry based on [Regional Hydraulic Curves](#) For Tier 2 and Tier 3 Crossings Only

Bankfull Width: _____ feet	Mean Bankfull Depth: _____ feet
Bankfull Cross Sectional Area: _____ square feet	

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5. Cross Sectional Channel Geometry:
Measurements of the Existing Stream within a Reference Reach
For Tier 2 and Tier 3 Crossings Only

Describe the reference reach location: _____

Reference reach watershed size: _____ acres

<u>Parameter</u>	<u>Cross Section 1</u> Describe bed form <i>(e.g. pool, riffle, glide)</i>	<u>Cross Section 2</u> Describe bed form <i>(e.g. pool, riffle, glide)</i>	<u>Cross Section 3</u> Describe bed form <i>(e.g. pool, riffle, glide)</i>	<u>Range</u>
Bankfull Width	_____ feet	_____ feet	_____ feet	_____ feet
Bankfull Cross Sectional Area	_____ SF	_____ SF	_____ SF	_____ SF
Mean Bankfull Depth	_____ feet	_____ feet	_____ feet	_____ feet
Width to Depth Ratio	_____	_____	_____	_____
Max Bankfull Depth	_____ feet	_____ feet	_____ feet	_____ feet
Flood Prone Width	_____ feet	_____ feet	_____ feet	_____ feet
Entrenchment Ratio	_____	_____	_____	_____

Use **Figure 1** below to determine the measurements of the Reference Reach Attributes

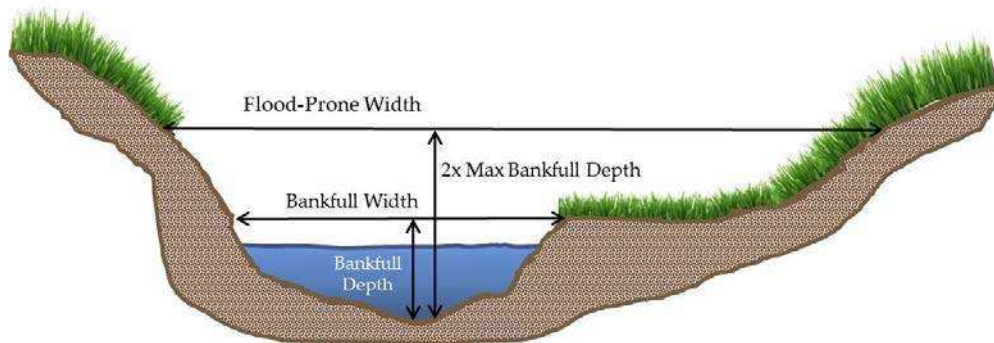


Figure 1: Determining the Reference Reach Attributes

6. Longitudinal Parameters of the Reference Reach and Crossing Location

For Tier 2 and Tier 3 Crossings Only

Average Channel Slope of the Reference Reach: _____

Average Channel Slope at the Crossing Location: _____

7. Plan View Geometry

For Tier 2 and Tier 3 Crossings Only

Sinuosity of the Reference Reach: _____

Sinuosity of the Crossing Location: _____

Note: Sinuosity is measured a distance of at least 20 times bankfull width, or 2 meander belt widths

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8. Substrate Classification based on Field Observations

For Tier 2 and Tier 3 Crossings Only

% of reach that is <i>bedrock</i>	_____ %
% of reach that is <i>boulder</i>	_____ %
% of reach that is <i>cobble</i>	_____ %
% of reach that is <i>gravel</i>	_____ %
% of reach that is <i>sand</i>	_____ %
% of reach that is <i>silt</i>	_____ %

9. Stream Type of Reference Reach

For Tier 2 and Tier 3 Crossings Only

Stream Type of Reference Reach:	_____
---------------------------------	-------

Refer to Rosgen Classification Chart (Figure 2) below

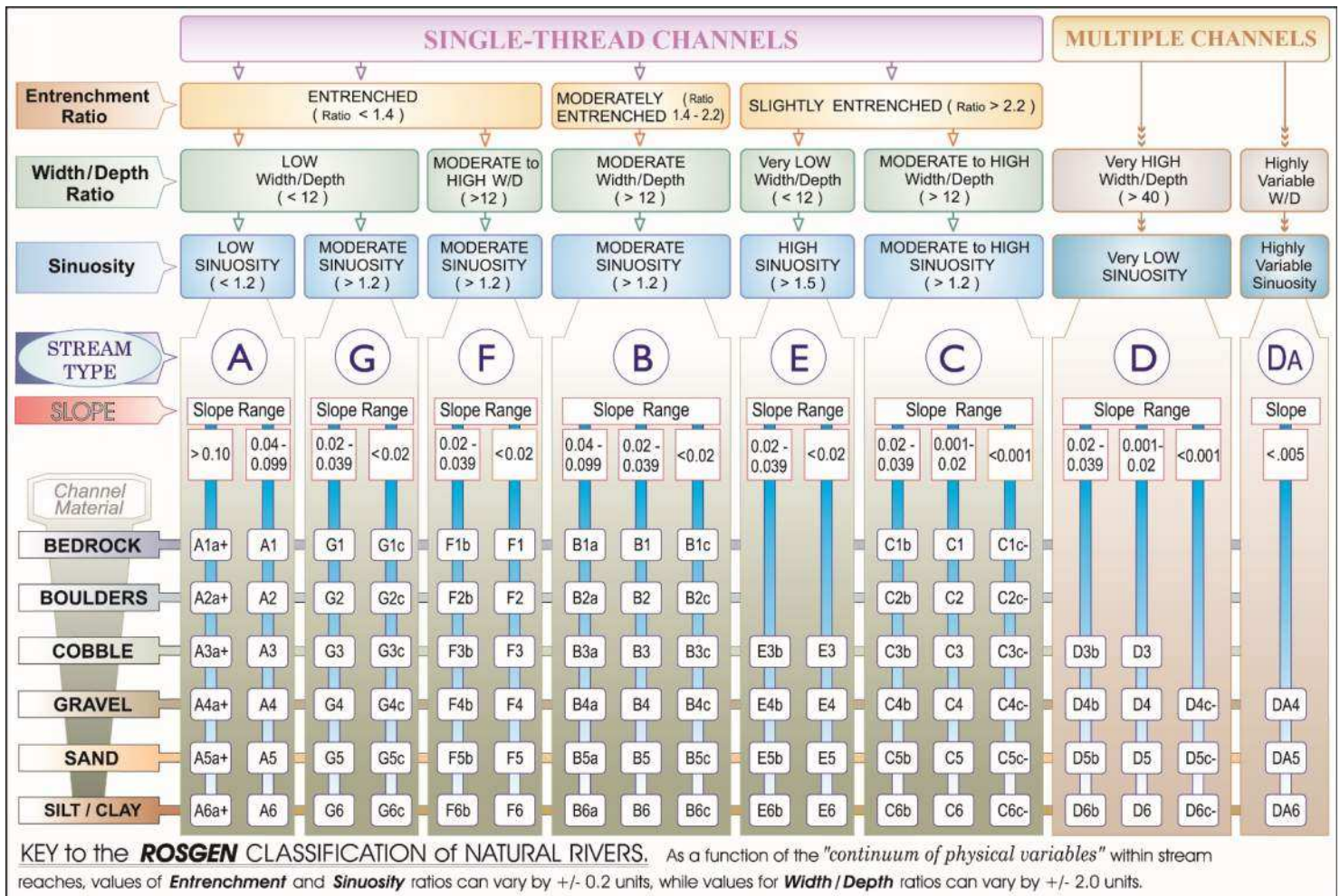


Figure 2. Reference from Applied River Morphology, Rosgen, 1996

10. Crossing Structure Metrics

lrm@des.nh.gov or (603) 271-2147

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

www.des.nh.gov

Existing Conditions

Existing Structure Type:	<input type="checkbox"/> Bridge Span <input type="checkbox"/> Pipe Arch <input type="checkbox"/> Open-bottom Culvert <input checked="" type="checkbox"/> Closed-bottom Culvert <input type="checkbox"/> Closed-bottom Culvert with stream simulation <input type="checkbox"/> Other: _____	
Existing Crossing Span <i>(perpendicular to flow)</i>	_____ N/A _____ feet	Culvert Diameter _____ 1.5 _____ feet Inlet Elevation __228.0 (Assumed)___
Existing Crossing Length <i>(parallel to flow)</i>	_____ 180 _____ feet	Outlet Elevation __227.1 (Assumed)___ Culvert Slope __0.5% Assumed___

Proposed Conditions

Proposed Structure Type:	Tier 1	Tier 2	Tier 3	Alternative Design
Bridge Span	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pipe Arch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closed-bottom Culvert	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Open-bottom Culvert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closed-bottom Culvert with stream simulation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proposed structure Span <i>(perpendicular to flow)</i>	_____ N/A _____ feet		Culvert Diameter _____ 1.5 _____ feet Inlet Elevation __228.25 (Assumed)___	
Proposed Structure Length <i>(parallel to flow)</i>	_____ 225 _____ feet		Outlet Elevation __227.1 (Assumed)___ Culvert Slope __0.5% Assumed___	
Proposed Entrenchment Ratio* <i>For Tier 2 and Tier 3 Crossings Only</i>	_____		<i>Note: To accommodate the entrenchment ratio, floodplain drainage structures may be utilized</i>	

* Note: Proposed Entrenchment Ratio must meet the minimum ratio for each stream type listed in **Figure 3**, otherwise the applicant must address the Alternative Design criteria listed in Env-Wt 904.09

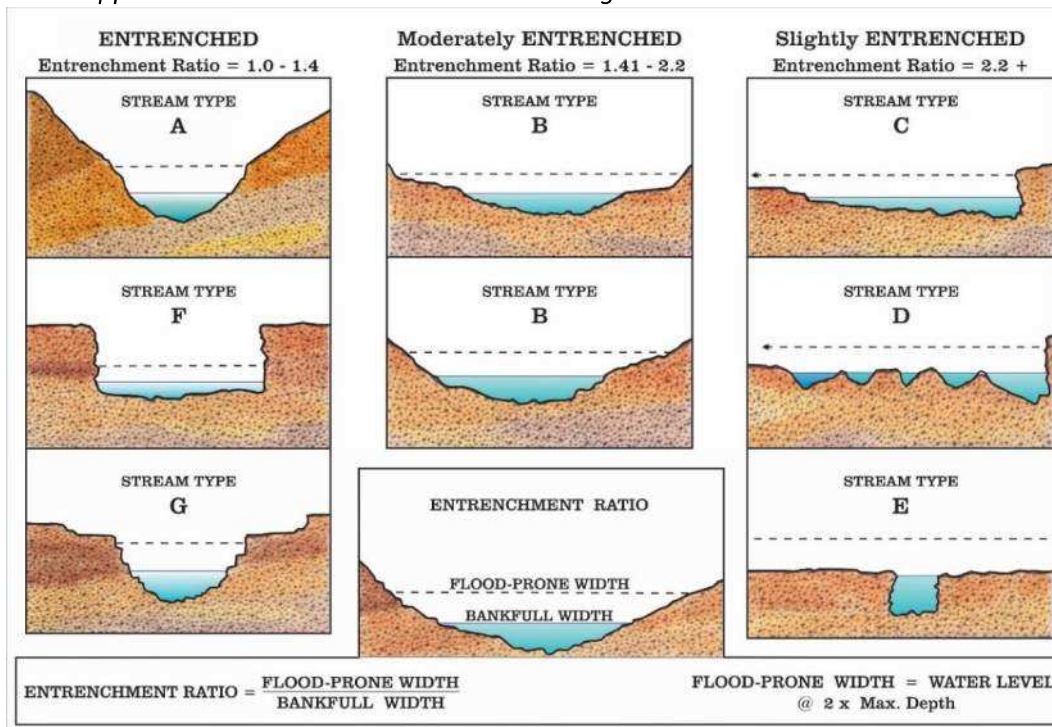


Figure 3. Reference from Applied River Morphology, Rosgen, 1996

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

www.des.nh.gov

11. Crossing Structure Hydraulics		
	Existing	Proposed
100 year flood stage elevation at inlet	<u> 232.75 </u>	<u> 232.75 </u>
Flow velocity at outlet in feet per second (FPS)	<u> 26.7 (100-year) </u>	<u> 26.7 (100-year) </u>
Calculated 100 year peak discharge (Q) for the <u>proposed</u> structure in CFS		<u> 25.68 </u>
Calculated 50 year peak discharge (Q) for the <u>proposed</u> structure in CFS		<u> 21.00 </u>

12. Crossing Structure Openness Ratio
<i>For Tier 2 and Tier 3 Crossings Only</i>
<p>Crossing Structure Openness Ratio = _____</p> <p><i>Openness box culvert = (height x width)/length</i></p> <p><i>Openness round culvert = (3.14 x radius²)/length</i></p>

13. General Design Considerations
Env-Wt 904.01 requires all stream crossings to be designed and constructed according to the following requirements. Check each box if the project meets these general design considerations.
<i>All stream crossings shall be designed and constructed so as to:</i>
<input checked="" type="checkbox"/> Not be a barrier to sediment transport.
<input checked="" type="checkbox"/> Prevent the restriction of high flows and maintain existing low flows.
<input checked="" type="checkbox"/> Not obstruct or otherwise substantially disrupt the movement of aquatic life indigenous to the waterbody beyond the actual duration of construction.
<input checked="" type="checkbox"/> Not cause an increase in the frequency of flooding or overtopping of banks.
<input checked="" type="checkbox"/> Preserve watercourse connectivity where it currently exists.
<input type="checkbox"/> Restore watercourse connectivity where: <ol style="list-style-type: none"> (1) Connectivity previously was disrupted as a result of human activity(ies); and (2) Restoration of connectivity will benefit aquatic life upstream or downstream of the crossing, or both.
<input checked="" type="checkbox"/> Not cause erosion, aggradation, or scouring upstream or downstream of the crossing.
<input checked="" type="checkbox"/> Not cause water quality degradation.

14. Tier Specific Design Criteria
Stream crossings must be designed in accordance with the Tier specific design criteria listed in Part Env-Wt 904.
<input checked="" type="checkbox"/> The proposed project meets the Tier specific design criteria listed in Part Env-Wt 904 and each requirement has been addressed in the plans and as part of the wetland application.

15. Alternative Design
<p>NOTE: If the proposed crossing does not meet all of the general design considerations, the Tier specific design criteria, or the minimum entrenchment ratio for each given stream type listed in Figure 3, then an alternative design plan and associated requirements must be addressed pursuant to Env-Wt 904.09.</p> <p><input type="checkbox"/> I have submitted an alternative design and addressed each requirement listed in Env-Wt 904.09</p>

NH Natural Heritage Bureau
Data Report



New Hampshire Natural Heritage Bureau

To: Jamie O'Brien
25 Nashua Road
Bedford, NH 03110

Date: 5/4/2020

From: NH Natural Heritage Bureau

Re: Review by NH Natural Heritage Bureau of request dated 5/4/2020
NHB File ID: NHB20-1243

Applicant: Nancy Spaulding

Location: Tax Map(s)/Lot(s):
Rochester

Project Description: This is a toll plaza conversion project in Rochester, NH. The existing toll booths will be replaced with an overhead electronic toll system. Sound walls will also be installed on the east side of Route 16, north and south of the existing toll booths.

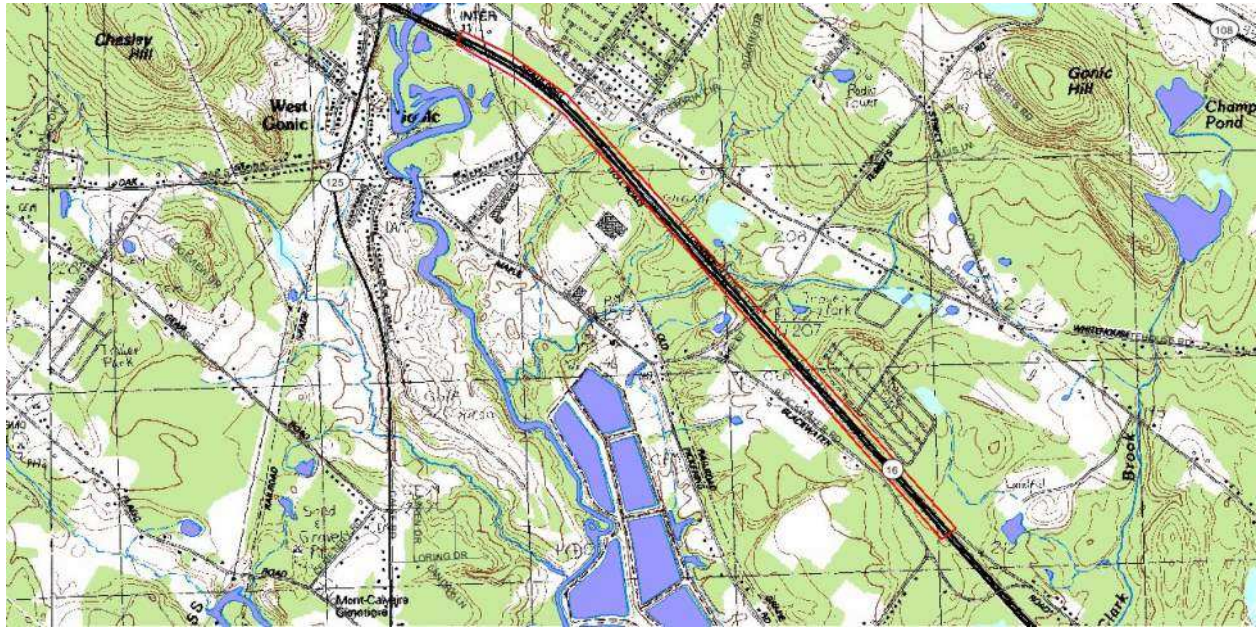
The NH Natural Heritage database has been checked for records of rare species and exemplary natural communities near the area mapped below. The species considered include those listed as Threatened or Endangered by either the state of New Hampshire or the federal government. We currently have no recorded occurrences for sensitive species near this project area.

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.

This report is valid through 5/3/2021.



MAP OF PROJECT BOUNDARIES FOR NHB FILE ID: NHB20-1243



US Fish & Wildlife Service
IPaC Consultation
and Species List



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: 05E1NE00-2021-TA-0423
Event Code: 05E1NE00-2021-E-01878
Project Name: Dover-Rochester 29440

December 04, 2020

Subject: Verification letter for the 'Dover-Rochester 29440' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions.

Dear Rebecca Martin:

The U.S. Fish and Wildlife Service (Service) received on November 16, 2020 your effects determination for the 'Dover-Rochester 29440' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's January 5, 2016, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from "take"^[1] prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

Please report to our office any changes to the information about the Action that you submitted in IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation. If the Action is not completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

This IPaC-assisted determination allows you to rely on the PBO for compliance with ESA Section 7(a)(2) only for the northern long-eared bat. It **does not** apply to the following ESA-protected species that also may occur in the Action area:

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

If the Action may affect other federally listed species besides the northern long-eared bat, a proposed species, and/or designated critical habitat, additional consultation between you and this Service office is required. If the Action may disturb bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act is recommended.

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

§17.40(o). Therefore, the PBO satisfies your responsibilities for this Action under ESA Section 7(a)(2) relative to the northern long-eared bat.

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on May 15, 2017. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for Federal actions is to assist determinations as to whether proposed actions are consistent with those analyzed in the Service's PBO dated January 5, 2016.

Federal actions that may cause prohibited take of northern long-eared bats, affect ESA-listed species other than the northern long-eared bat, or affect any designated critical habitat, require ESA Section 7(a)(2) consultation in addition to the use of this key. Federal actions that may affect species proposed for listing or critical habitat proposed for designation may require a conference under ESA Section 7(a)(4).

Determination Key Result

This project may affect the threatened Northern long-eared bat; therefore, consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) is required. However, based on the information you provided, this project may rely on the Service's January 5, 2016, *Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions* to fulfill its Section 7(a)(2) consultation obligation.

Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?
Yes
2. Have you determined that the proposed action will have "no effect" on the northern long-eared bat? (If you are unsure select "No")
No
3. Will your activity purposefully **Take** northern long-eared bats?
No
4. [Semantic] Is the project action area located wholly outside the White-nose Syndrome Zone?
Automatically answered
No
5. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

Location information for northern long-eared bat hibernacula is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases and other sources of information on the locations of northern long-eared bat roost trees and hibernacula is available at www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html.

Yes

6. Will the action affect a cave or mine where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?
No
7. Will the action involve Tree Removal?
Yes
8. Will the action only remove hazardous trees for the protection of human life or property?
No
9. Will the action remove trees within 0.25 miles of a known northern long-eared bat hibernaculum at any time of year?
No
10. Will the action remove a known occupied northern long-eared bat maternity roost tree or any trees within 150 feet of a known occupied maternity roost tree from June 1 through July 31?
No

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.

1. Estimated total acres of forest conversion:

9

2. If known, estimated acres of forest conversion from April 1 to October 31

0

3. If known, estimated acres of forest conversion from June 1 to July 31

0

If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

0



United States Department of the Interior



FISH AND WILDLIFE SERVICE
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<http://www.fws.gov/newengland>

In Reply Refer To:

November 12, 2020

Consultation Code: 05E1NE00-2021-SLI-0423

Event Code: 05E1NE00-2021-E-01274

Project Name: Dover-Rochester 29440

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

To Whom It May Concern:

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

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

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

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

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

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

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). 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: 05E1NE00-2021-SLI-0423

Event Code: 05E1NE00-2021-E-01274

Project Name: Dover-Rochester 29440

Project Type: TRANSPORTATION

Project Description: This is a toll plaza conversion project at existing toll plazas in Dover and Rochester, NH, along the Spaulding Turnpike.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/43.270795789485476N70.95982027011459W>



Counties: Strafford, NH

Endangered Species Act Species

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

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

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

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

Mammals

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

Flowering Plants

NAME	STATUS
Small Whorled Pogonia <i>Isotria medeoloides</i> 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.

NH Division of Historical Resources
Effect Memo



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

January 27, 2021

Reagan Ruedig
Preservation Company
5 Hobbs Road
Kensington, NH 03833

Re: DOT/ACOE, RPR 12035

Dear Reagan:

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

TOWN/CITY	PROPERTY	DETERMINATION
Dover	Spaulding Turnpike Dover Toll Collectors Station (DOV0235)	Eligible
Rochester	Spaulding Turnpike Rochester Toll Collectors Station (ROC0122)	Eligible

Copies of the DHR evaluation forms are attached for your use. The inventory data and the evaluation will be added to the statewide survey database for historic properties in New Hampshire.

Please contact Megan Rupnik at 271-6435 or Megan.Rupnik@dncr.nh.gov if you have questions.

Sincerely,

Marika Labash
R&C Program Specialist

Enclosure

cc: Ben Wilson / State Historic Preservation Officer
DOT/ACOE
Normandeau



New Hampshire Division of Historical Resources
Determination of Eligibility (DOE)

Inventory #: ROC0122

DOE Review Date: 1/13/2021

Date Received: 1/6/2021

Final DOE Approved: Yes



Property Name: Spaulding Turnpike Rochester Toll Collectors Station

Area:

Address: Route 16 mile marker 17.5

Town: Rochester

County: Strafford

Reviewed For: R&C

DOE Program(s):

DOT Department of Transportation

Determination of Eligibility:

National Register eligible, individually	Integrity: Yes	Level: State			
Criteria:	A: Yes	B: No	C: Yes	D:	E:

Areas of Significance(s):

Transportation

Period of Significance: 1957 to 1970

Boundary:

see description

Statement of Significance:

The Rochester Toll Collectors Station retains considerable integrity to convey its significance for its association with mid-century automobile highways and culture in New Hampshire. The Spaulding Turnpike was built to connect the cities of Portsmouth, Dover, and Rochester but also to carry tourists traveling further north in the state to the Lakes Region and the White Mountains. The Toll Collectors Station is a character-defining feature of the Spaulding Turnpike, built in the mid-1950s during the height of limited-access, multiple-lane, highspeed turnpike construction in New Hampshire. With its modern design, the property is also significant for its architecture.

Comments:

Follow Up:

Notify appropriate parties

Determination of Eligibility (DOE)

Inventory #: DOV0235

DOE Review Date: 1/13/2021

Date Received: 1/6/2021

Final DOE Approved: Yes

MR

Property Name: Spaulding Turnpike Dover Toll Collectors Station

Area:

Address: Route 16 mile marker 5.5

Town: Dover

County: Strafford

Reviewed For: R&C

DOE Program(s):

DOT Department of Transportation

Determination of Eligibility:

National Register eligible, individually		Integrity: Yes		Level: State	
Criteria:	A: Yes	B: No	C: Yes	D:	E:

Areas of Significance(s):
Transportation

Period of Significance: 1956 to 1970

Boundary:

The boundaries of the Dover Toll Collectors Station are coextensive with the footprints of the Administration Building (and its sunken courtyard) and Toll Plaza, the toll lanes spanning the width of the turnpike right of way to the east and Spur Road to the west, and the grass areas adjacent to the administration building, and the parking lots to the north and south of the Toll Collectors Station.

Statement of Significance:

Using a wide variety of research resources, the form provides a concise overview of the "Turnpike Era" in the US and in NH, when the State's 3 turnpikes were planned and during which the Spaulding Turnpike was constructed. The form also provides a more detailed history of the Spaulding Turnpike and the design and construction of the two toll collectors stations on the roadway, located strategically in Dover and Rochester. Designed in the Mid-Century Modern style by architects EH and MK Hunter, the station consists of an administration building, toll plaza, an underground connecting tunnel, parking areas, and a modern shed. Although the station has seen some alterations, the resource retains enough integrity to convey its significance as one of two remaining historic toll stations of this period in highway construction, for both its association with transportation history and for its architecture. It is noted in the form that due to more substantial alterations, the Spaulding Turnpike is not holistically eligible for listing in the National Register.

Comments:

Follow Up:

Notify appropriate parties

US Army Corps of Engineers
Appendix B



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

Appendix B

New Hampshire 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 <https://www.nae.usace.army.mil/Missions/Regulatory/> “Useful Documents, Forms and Publications” and then “Corps Application Form and Guidance.” 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:

- New Hampshire Department of Environmental Services (DES) Wetlands Permit Application.
- Request for Project Review Form by the New Hampshire Division of Historical Resources (DHR) <https://www.nh.gov/nhdhr/review/rpr.htm>.
- Photographs of wetland/waterway to be impacted.
- Purpose of the project.
- Legible, reproducible 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. 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.
 - 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 OHW in inland waters and below the HTL in coastal waters.
 - Delineation of all waterways and wetlands on the project site,;
- Use Federal delineation methods and include Corps wetland delineation data sheets (GC 2).
- 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.



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**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?	0 sf	
2.7 What is the area of the proposed fill in wetlands?	34,545 sf	
2.8 What is the % of previously and proposed fill in wetlands to the overall project site?	1.3%	
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: <ul style="list-style-type: none"> • PDF: https://wildlife.state.nh.us/wildlife/wap-high-rank.html. • 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? Alternative Designs submitted		X
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.

USACE Appendix B – Explanations/Additional Information

1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water?

Both the Rochester and Dover portions of the project area are within one mile of impaired waters. The project will comply with all requirements associated with the NHDOT and Municipal MS4 permits, Alteration of Terrain requirements, and Construction General Permits. The Project Design will treat stormwater where treatment is not currently occurring.

2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?

There are eight un-named tributaries to the Cocheco River within 200 ft of the proposed work. Two of these are perennial streams, and six are intermittent. Four intermittent tributaries will be directly impacted by the construction of sound walls within the Turnpike ROW.

2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage?

The project will fill portions of nine wetlands within the Turnpike for the construction of two sound walls. These wetlands are relatively small, and mostly contained within the ROW between the Turnpike and adjacent residential developments. A drainage plan was developed to accommodate drainage. Wildlife movement is already limited by the presence of the Turnpike. The addition of the sound walls and small section of median barrier may alter wildlife movements further, funneling some terrestrial animals around the walls or toward the 2/3 mi gap between the walls.

2.4 Would the project remove part or all of a riparian buffer?

The culvert extensions on the four affected intermittent streams will also eliminate the riparian buffers of those streams in those locations, but there will be minimal loss of riparian buffer of perennial streams.

2.5 The overall project site is more than 40 acres?

The project area is approximately 60 acres, but approximately 40% of this is paved highway.

2.6 What is the area of the previously filled wetlands?

The Turnpike was constructed in the 1960's, and no estimate of the previously impacted wetland area was determined. The wetlands on the east side of the Turnpike were likely formed, in part, by the drainage changes resulting from Turnpike construction.

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?

The NHB report did not identify any known occurrences of rare species or exemplary natural communities. The IPaC consultation revealed the potential for Northern Long-eared Bats,

USACE Appendix B – Explanations/Additional Information

although no hibernacula are known in or near the Project Area. Approximately 6 acres of tree clearing is proposed and the project is in compliance with the 4(D) rule.

3.5 Are stream crossings designed in accordance with the GC 21?

Culverts will be required on four intermittent streams. Three of these will be extensions of existing culverts under the Turnpike that will pass the stream under the new sound wall. The fourth crossing will replace a stream channel with a culvert as it runs parallel to the Turnpike and sound wall, and there is insufficient room in the ROW to relocate the channel. This stream joins a perennial stream and flows immediately under the Turnpike. The culverts will maintain a similar level of flow, sediment transport, and connectivity as that provided by the existing culverts, and will continue to pass the 50 year storm.

5. Historic/Archaeological Resources

RPRs for the Project (Dover and Rochester sites) were submitted to the NH Division of Historical Resources (NHDHR), and follow-up Inventory Forms for the mid-century modern Toll facilities were submitted to NHDHR in response to their request. The NHDHR has determined that the toll facilities in Dover and Rochester are eligible for listing on the National Register of Historic Places. NHDOT is working with NHDHR to identify appropriate mitigation.

US Army Corps of Engineers
Wetland Determination Data Forms
for Impacted Palustrine Wetlands

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Dover-Rochester City/County: Rochester/Stark Sampling Date: 2/11/2020
 Applicant/Owner: NHDOX State: NH Sampling Point: RW-FUR
 Investigator(s): B. G. Flynn, E. O'Hara Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none
 Slope (%): 0 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (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 _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 	
Remarks: 	

VEGETATION – Use scientific names of plants.

Sampling Point: RVI-upc

Tree Stratum (Plot size: <u>30'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer rubrum</u>	<u>60</u>	Yes	FAC
2. <u>Pinus strobus</u>	<u>20</u>	Yes	FACU
3. <u>Fagus grandifolia</u>	<u>10</u>	No	FACU
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

50/20 Thresholds:
50% of total cover = 45%
20% of total cover = 18%

Sapling/Shrub Stratum (Plot size: 15'R)

Sapling/Shrub Stratum (Plot size: <u>15'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer rubrum</u>	<u>10</u>	Yes	FAC
2. <u>Corylus americana</u>	<u>15</u>	Yes	FACU
3. <u>Ecorymus alatus</u>	<u>5</u>	No	N/A
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

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 = _____

50/20 Thresholds:
50% of total cover = 15%
20% of total cover = 6%

Herb Stratum (Plot size: 5'R)

Herb Stratum (Plot size: <u>5'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lysimachia borealis</u>	<u>2</u>	Yes	N/A
2. <u>Pteridium aquilinum</u>	<u>5</u>	Yes	FACU
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

Dominance Test is >50%

Prevalence Index is ≤3.0¹

Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

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

50/20 Thresholds:
50% of total cover = 3.5%
20% of total cover = 1.4%

Woody Vine Stratum (Plot size: _____)

1. <u>None</u>	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____

_____ = Total Cover

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 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 _____ No X

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

RW1 - WET

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Dover - Rochester City/County: Rochester / Strafford Sampling Date: 7/1/20
Applicant/Owner: NH DOT State: NH Sampling Point: RW1 wet
Investigator(s): B. Griffin, J. O'Brien Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave
Slope (%): 0 Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION – Use scientific names of plants.

Sampling Point: RW1Wkt

Tree Stratum (Plot size: <u>30'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>None</u>			
2.			
3.			
4.			
5.			
6.			
7.			

Sapling/Shrub Stratum (Plot size: <u>15'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Frangula alnus</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Sambucus canadensis</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>
3.			
4.			
5.			
6.			
7.			

50/20 Thresholds:
 50% of total cover = 30%
 20% of total cover = 12%
60% = Total Cover

Herb Stratum (Plot size: <u>5'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Impatiens capensis</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>
2. <u>Thyridium angustum</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
3. <u>Silene dulcissima</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			

50/20 Thresholds:
 50% of total cover = 25%
 20% of total cover = 10%
50% = Total Cover

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>None</u>			
2.			
3.			
4.			

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

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (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:**
- Rapid Test for Hydrophytic Vegetation
 - Dominance Test is >50%
 - Prevalence Index is ≤3.0¹
 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 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 _____

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Dover-Rochester City/County: Rochester/Stafford Sampling Date: 5/3/2020
 Applicant/Owner: NHDOT State: NH Sampling Point: RW4-Wet
 Investigator(s): B. Griffin, J. O'Brien Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: WGS84
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>2"</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0"</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION – Use scientific names of plants.

Sampling Point: RW4-Wet

Tree Stratum (Plot size: 30'R)

	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Sapling/Shrub Stratum (Plot size: 15'R)

	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			

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 =

Herb Stratum (Plot size: 5'R)

	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Impatiens capensis</i>	<u>10</u>	<u>Y</u>	<u>FACW</u>
2. <i>Ranunculus recurvatus</i>	<u>5</u>	<u>Y</u>	<u>FACW</u>
3. <i>Equisetum arvense</i>	<u>1</u>	<u>N</u>	<u>FAC</u>
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			

16 = Total Cover

- Hydrophytic Vegetation Indicators:**
- Rapid Test for Hydrophytic Vegetation
 - Dominance Test is >50%
 - Prevalence Index is ≤3.0¹
 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 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.

Woody Vine Stratum (Plot size: _____)

1. None			
2.			
3.			
4.			

_____ = Total Cover

Hydrophytic Vegetation Present? Yes X No _____

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

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

RW6-UPBL

Project/Site: Dow - Rochester City/County: Rochester / Spalding Sampling Date: 7/1/20
 Applicant/Owner: NHDOE State: NH Sampling Point: RW6/UPBL
 Investigator(s): B. Griffin, B. Oller Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none
 Slope (%): <1% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (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 _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 	
Remarks: 	

VEGETATION – Use scientific names of plants.

Sampling Point: RWG-UPL

Tree Stratum (Plot size: <u>30'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer rubrum</u>	<u>30</u>	Yes	FAC
2. <u>Quercus rubra</u>	<u>25</u>	Yes	FACU
3. <u>Pinus strobus</u>	<u>10</u>	No	FACU
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

50/20 Thresholds:
50% of total cover = 32.5%
20% of total cover = 13%

Sapling/Shrub Stratum (Plot size: <u>15'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Vaccinium corymbosum</u>	<u>25</u>	Yes	FACW
2. <u>Fagus grandifolia</u>	<u>10</u>	Yes	FACU
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

50/20 Thresholds:
50% of total cover = 17.5%
20% of total cover = 7%

Herb Stratum (Plot size: <u>5'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Osmunda cinnamomeum</u> <small>Osmundastrum cinnamomeum</small>	<u>25</u>	Yes	FACW
2. <u>Maintheum canadense</u>	<u>30</u>	Yes	FACU
3. <u>Berberis thunbergii</u>	<u>15</u>	Yes	FACU
4. <u>Maintheum racemosum</u>	<u>5</u>	No	FACU
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____

50/20 Thresholds:
50% of total cover = 37.5%
20% of total cover = 15%

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>None</u>	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 43% (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:**
- Rapid Test for Hydrophytic Vegetation
 - Dominance Test is >50%
 - Prevalence Index is ≤3.0¹
 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 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 _____ No X

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

RWG - WET

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Dover-Rochester City/County: Rochester/Dorchester Sampling Date: 2/1/20

Applicant/Owner: NHDOT State: NH Sampling Point: RWG-Wet

Investigator(s): B. Griffin, E. Olivier Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave

Slope (%): 0/0 Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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

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

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (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 _____ No _____	Is the Sampled Area within a Wetland? Yes _____ No _____
Hydric Soil Present? Yes _____ No _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present? Yes _____ No _____	
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)		_____ Surface Soil Cracks (B6)	
_____ Surface Water (A1)	_____ Water-Stained Leaves (B9)	_____ Drainage Patterns (B10)	
<input checked="" type="checkbox"/> High Water Table (A2)	_____ Aquatic Fauna (B13)	_____ Moss Trim Lines (B16)	
<input checked="" type="checkbox"/> Saturation (A3)	_____ Marl Deposits (B15)	_____ Dry-Season Water Table (C2)	
_____ Water Marks (B1)	_____ Hydrogen Sulfide Odor (C1)	_____ Crayfish Burrows (C8)	
_____ Sediment Deposits (B2)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Saturation Visible on Aerial Imagery (C9)	
_____ Drift Deposits (B3)	_____ Presence of Reduced Iron (C4)	_____ Stunted or Stressed Plants (D1)	
_____ Algal Mat or Crust (B4)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Geomorphic Position (D2)	
_____ Iron Deposits (B5)	_____ Thin Muck Surface (C7)	_____ Shallow Aquitard (D3)	
_____ Inundation Visible on Aerial Imagery (B7)	_____ Other (Explain in Remarks)	_____ Microtopographic Relief (D4)	
_____ Sparsely Vegetated Concave Surface (B8)		_____ FAC-Neutral Test (D5)	
Field Observations:			
Surface Water Present? Yes _____ No _____	Depth (inches): _____		
Water Table Present? Yes <input checked="" type="checkbox"/> No _____	Depth (inches): <u>6 inches</u>		
Saturation Present? Yes <input checked="" type="checkbox"/> No _____	Depth (inches): <u>0 inches</u>		
(includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION – Use scientific names of plants.

Sampling Point: RW6-WET

Tree Stratum (Plot size: <u>30' R</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>None in wetland</u>			
2.			
3.			
4.			
5.			
6.			
7.			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6% (A/B)

Sapling/Shrub Stratum (Plot size: <u>15' R</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Ilex verticillata</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>
2. <u>Pinus strobus</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
3.			
4.			
5.			
6.			
7.			

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 =

50/20 Thresholds:
 50% of total cover = 17.5%
 20% of total cover = 7%

Herb Stratum (Plot size: <u>5' R</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Osmunda cinnamomea</u> <small>Osmundastrum cinnamomeum</small>	<u>30</u>	<u>Yes</u>	<u>FACW</u>
2. <u>Rosa multiflora</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Impatiens capensis</u>	<u>10</u>	<u>No</u>	<u>FACW</u>
4. <u>Oxalis sensibilis</u>	<u>10</u>	<u>No</u>	<u>FACW</u>
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

Dominance Test is >50%

Prevalence Index is ≤3.0¹

Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

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

50/20 Thresholds:
 50% of total cover = 35%
 20% of total cover = 14%

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>None</u>			
2.			
3.			
4.			

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 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.)

SOIL

Sampling Point: RWG-WET

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	WYR 3/1	W0%					muck	
3-8	WYR 4/2	90%	2.5YA 4/6	10%	C	RL	sand	
8-14	WYR 3/1	90%	2.5YR 4/6	10%	C	PL	sand	washed w/ organic

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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)
- 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 Soils³:

- 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 (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Dover - Rakeh City/County: Rochester/Stratford Sampling Date: 7/1/20
 Applicant/Owner: NHDOT State: NH Sampling Point: RWT-UP
 Investigator(s): TS, Griffith, P. O'Neil Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none
 Slope (%): 1/0 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes 6 No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (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 _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 	
Remarks: 	

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Dover Rochester City/County: Rochester/Stafford Sampling Date: 7/1/00
 Applicant/Owner: MHDOT State: NH Sampling Point: RWZ-WET
 Investigator(s): B. Griffith, B. Olliv Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 1 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION – Use scientific names of plants.

Sampling Point: RW7-WET

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>None</u>			
2. _____			
3. _____			
4. _____			
5. _____			
6. _____			
7. _____			

_____ = Total Cover

Sapling/Shrub Stratum (Plot size: <u>15'x15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Vaccinium corymbosum</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>
2. _____			
3. _____			
4. _____			
5. _____			
6. _____			
7. _____			

5% = Total Cover

Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>None</u>			
2. _____			
3. _____			
4. _____			
5. _____			
6. _____			
7. _____			
8. _____			
9. _____			
10. _____			
11. _____			
12. _____			

_____ = Total Cover

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>None</u>			
2. _____			
3. _____			
4. _____			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**
- Rapid Test for Hydrophytic Vegetation
 - Dominance Test is >50%
 - Prevalence Index is ≤3.0¹
 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 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.)

SOIL

Sampling Point: PWZNET

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	7.5YR 2.5/1	100%					Peat	
2-10	10YR 3/2	85%	7.5YR 4/6	15%	C	PL	sand	
10-18	10YR 4/1	70%	7.5YR 4/6	30%	C	PL	sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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)
- 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 Soils³:

- 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 (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Dover - Rochester City/County: Rochester/Stratton Sampling Date: 2/1/20
 Applicant/Owner: NHDOSS State: NH Sampling Point: RWR-UP
 Investigator(s): B. Griffith, E. O'Hara Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Mound Local relief (concave, convex, none): Convex
 Slope (%): 1 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (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 _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<p>Field Observations:</p> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<p>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/></p>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION – Use scientific names of plants.

Sampling Point: RW8-UPL

Tree Stratum (Plot size: <u>30'K</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Pinus strobus</u>	<u>50</u>	Yes	FACU
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

50% = Total Cover

Sapling/Shrub Stratum (Plot size: <u>15R</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Vaccinium corymbosum</u>	<u>30</u>	Yes	FACW
2. <u>Betula papyrifera</u>	<u>5</u>	No	FACU
3. <u>Quercus alba</u>	<u>5</u>	No	FACU
4. <u>Quercus rubra</u>	<u>5</u>	No	FACU
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

50/20 Thresholds:
50% of total cover = 22.5%
20% of total cover = 9%

45% = Total Cover

Herb Stratum (Plot size: <u>5'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Vaccinium angustifolium</u>	<u>40</u>	Yes	FACU
2. <u>Vaccinium corymbosum</u>	<u>20</u>	Yes	FACW
3. <u>Lysimachia borealis</u>	<u>2</u>	No	N/A
4. <u>Maianthemum canadense</u>	<u>2</u>	No	FACU
5. <u>Ajuga reptans</u>	<u>5</u>	_____	N/A
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____

50/20 Thresholds:
50% of total cover = 34.5%
20% of total cover = 13.8%

69% = Total Cover

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>None</u>	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (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:**
- Rapid Test for Hydrophytic Vegetation
 - Dominance Test is >50%
 - Prevalence Index is ≤3.0¹
 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 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 _____ No X

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

SOIL

Sampling Point: RWB-UPL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 5/1	100%					Sandy loam	
2-6	10YR 4/3	100%					↓	
6-14	10YR 5/3	100%						

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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)
- 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 Soils³:

- 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 (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Dover-Rochester City/County: Rochester/Stratford Sampling Date: 7/1/20
 Applicant/Owner: NH DOT State: NH Sampling Point: 258-Wet
 Investigator(s): B. Griffin, E. Ollivier Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none
 Slope (%): 1% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<p>Field Observations:</p> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): <u>1/2"</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>12"</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0"</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 	
Remarks: 	

VEGETATION – Use scientific names of plants.

Sampling Point: RW8-WET

Tree Stratum (Plot size: <u>30'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer rubrum</u>	<u>70</u>	Yes	FAC
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

Sapling/Shrub Stratum (Plot size: <u>15'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Pines strobus</u>	<u>20</u>	Yes	FACU
2. <u>Acer rubrum</u>	<u>10</u>	Yes	FAC
3. <u>Tsuga canadensis</u>	<u>5</u>	No	FACU
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

50/20 Thresholds:
 50% of total cover = 17.5%
 20% of total cover = 7%

Herb Stratum (Plot size: <u>5'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Carex stricta</u>	<u>30</u>	Yes	OBL
2. <u>Toxicodendron radicans</u>	<u>5</u>	No	FAC
3. <u>Equisetum pratense</u>	<u>15</u>	No	FACW
4. <u>Thelypteris palustris</u>	<u>5</u>	No	FACW
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____

50/20 Thresholds:
 50% of total cover = 52%
 20% of total cover = 21%

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>None</u>	_____	_____	_____
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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (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:**
- Rapid Test for Hydrophytic Vegetation
 - Dominance Test is >50%
 - Prevalence Index is ≤3.0¹
 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 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.)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Dover - Rochester City/County: Rochester/Strafford Sampling Date: 7/1/20
 Applicant/Owner: NHDOH State: NH Sampling Point: RWA-UPL
 Investigator(s): B. Griffith, E. O'Hara Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): convex
 Slope (%): 2% Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (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 _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators (minimum of one is required; check all that apply)</p> <table style="width:100%; border: none;"> <tr> <td style="width:50%; border: none;"> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) </td> <td style="width:50%; border: none;"> <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) </td> </tr> </table>	<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<p>Secondary Indicators (minimum of two required)</p> <table style="width:100%; border: none;"> <tr> <td style="width:50%; border: none;"> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) </td> <td style="width:50%; border: none;"> <input type="checkbox"/> FAC-Neutral Test (D5) </td> </tr> </table>	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)				
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4)	<input type="checkbox"/> FAC-Neutral Test (D5)				
<p>Field Observations:</p> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (Includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>				
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 					
Remarks: 					

VEGETATION – Use scientific names of plants.

Sampling Point: RW1-UPL

Tree Stratum (Plot size: 30'R)

	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Quercus rubra</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>
2. <u>Pinus strobus</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
3. <u>Populus tremuloides</u>	<u>5</u>	<u>N</u>	<u>FACU</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Sapling/Shrub Stratum (Plot size: 15'R)

	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Pinus strobus</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
2. <u>Quercus rubra</u>	<u>5</u>	<u>N</u>	<u>FACU</u>
3. <u>Fagus grandifolia</u>	<u>5</u>	<u>N</u>	<u>FACU</u>
4. <u>Comptonia peregrina</u>	<u>5</u>	<u>N</u>	<u>UPL</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

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 = _____

Herb Stratum (Plot size: 5'R)

	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Pteridium aquilinum</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>
2. <u>Comptonia peregrina</u>	<u>10</u>	<u>N</u>	<u>UPL</u>
3. <u>(Saururus) procumbens</u>	<u>5</u>	<u>N</u>	<u>FACU</u>
4. <u>Agrostis sp</u>	<u>2</u>	<u>N</u>	<u>UPL</u>
5. <u>Apocynum androsaemifolium</u>	<u>2</u>	<u>N</u>	<u>FACU</u>
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

Dominance Test is >50%

Prevalence Index is ≤3.0¹

Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

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

Woody Vine Stratum (Plot size: _____)

1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
_____	_____	_____	_____

_____ = Total Cover

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 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 _____ No

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

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Dover Rochester City/County: Rochester / Stafford Sampling Date: 7/1/20
 Applicant/Owner: NH DOT State: NH Sampling Point: R19-WE
 Investigator(s): B. Griffin E. O'Hara Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 2/10 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators (minimum of one is required; check all that apply)</p> <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<p>Field Observations:</p> Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>1 inches</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0 inches</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 	
Remarks:	

VEGETATION – Use scientific names of plants.

Sampling Point: RW9-WET

Tree Stratum (Plot size: <u>30'R</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Acer rubrum</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2.				
3.				
4.				
5.				
6.				
7.				

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Sapling/Shrub Stratum (Plot size: <u>15'R</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Spiraea alba</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>
2.	<u>Fraxinus alnus</u>	<u>5</u>	<u>N</u>	<u>FAC</u>
3.				
4.				
5.				
6.				
7.				

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 = _____

Herb Stratum (Plot size: <u>5'R</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Osmunda regalis</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>
2.	<u>Carex stricta</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				

- Hydrophytic Vegetation Indicators:**
- Rapid Test for Hydrophytic Vegetation
 - Dominance Test is >50%
 - Prevalence Index is ≤3.0¹
 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Woody Vine Stratum (Plot size: _____)		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				

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 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 No

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

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Spaulding Turnpike City/County: Rochester/Strafford Sampling Date: 7/30/2020
 Applicant/Owner: NHDOT State: NH Sampling Point: RW13 UPL
 Investigator(s): B. Griffith Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Mound Local relief (concave, convex, none): Convex Slope %: 0
 Subregion (LRR or MLRA): LRR R Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (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 _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Colocated with RW14 UPL	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) ? _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ 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)
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Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Spaulding Turnpike City/County: Rochester/Strafford Sampling Date: 7/30/2020
 Applicant/Owner: NHDOT State: NH Sampling Point: RW13 Wet
 Investigator(s): B. Griffith Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: 0
 Subregion (LRR or MLRA): LRR R Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ 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 _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: RW13 Wet

<u>Tree Stratum</u> (Plot size: <u>30' R</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	<u>50</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u>50</u> =Total Cover			Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:center;">Total % Cover of:</td> <td style="width:50%; text-align:center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>65</u></td> <td>x 3 = <u>195</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>65</u> (A)</td> <td><u>195</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = <u>3.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>65</u>	x 3 = <u>195</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>65</u> (A)	<u>195</u> (B)	Prevalence Index = B/A = <u>3.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>65</u>	x 3 = <u>195</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>65</u> (A)	<u>195</u> (B)																			
Prevalence Index = B/A = <u>3.00</u>																				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15' R</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Acer rubrum</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u>15</u> =Total Cover																			
<u>Herb Stratum</u> (Plot size: <u>5' R</u>)				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 <u>X</u> No _____																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
	_____ =Total Cover																			
<u>Woody Vine Stratum</u> (Plot size: <u>30' R</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
	_____ =Total Cover																			

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

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Spaulding Turnpike City/County: Rochester/Strafford Sampling Date: 7/30/2020
 Applicant/Owner: NHDOT State: NH Sampling Point: RW14 UPL
 Investigator(s): B. Griffith Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Mound Local relief (concave, convex, none): Convex Slope %: 0
 Subregion (LRR or MLRA): LRR R Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (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 _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Colocated with RW13 UPL	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ ? Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ 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)
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Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: RW14 UPL

<u>Tree Stratum</u> (Plot size: <u>30' R</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u><i>Tsuga canadensis</i></u>	<u>30</u>	Yes	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. <u><i>Acer rubrum</i></u>	<u>5</u>	No	FAC																	
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
	<u>35</u>	=Total Cover		Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:center;">Total % Cover of:</td> <td style="width:50%; text-align:center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>41</u></td> <td>x 4 = <u>164</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>46</u></td> <td>(A) <u>179</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = <u>3.89</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>41</u>	x 4 = <u>164</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>46</u>	(A) <u>179</u> (B)	Prevalence Index = B/A = <u>3.89</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>5</u>	x 3 = <u>15</u>																			
FACU species <u>41</u>	x 4 = <u>164</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>46</u>	(A) <u>179</u> (B)																			
Prevalence Index = B/A = <u>3.89</u>																				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15' R</u>)																				
1. <u><i>Tsuga canadensis</i></u>	<u>5</u>	Yes	FACU																	
2. <u><i>Prunus pensylvanica</i></u>	<u>5</u>	Yes	FACU																	
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
	<u>10</u>	=Total Cover																		
<u>Herb Stratum</u> (Plot size: <u>5' R</u>)				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u><i>Maianthemum canadense</i></u>	<u>1</u>	No	FACU																	
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
	<u>1</u>	=Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: <u>30' R</u>)				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.																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
				Hydrophytic Vegetation Present? Yes <u> </u> No <u> X </u>																
Remarks: (Include photo numbers here or on a separate sheet.)																				

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Spaulding Turnpike City/County: Rochester/Strafford Sampling Date: 7/30/2020
 Applicant/Owner: NHDOT State: NH Sampling Point: RW14 Wet
 Investigator(s): B. Griffith Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope %: 0
 Subregion (LRR or MLRA): LRR R Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) <input checked="" type="checkbox"/> 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)	<u>Secondary Indicators (minimum of two required)</u> _____ 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) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
---	---

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>8</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>2</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
---	--

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: RW14 Wet

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30' R</u>)				
1. <u>Acer rubrum</u>	40	Yes	FAC	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
	40	=Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15' R</u>)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
		=Total Cover		
Herb Stratum (Plot size: <u>5' R</u>)				
1. <u>Osmundastrum cinnamomeum</u>	5	Yes	FACW	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
12. _____				
	5	=Total Cover		
Woody Vine Stratum (Plot size: <u>30' R</u>)				
1. _____				
2. _____				
3. _____				
4. _____				
		=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	<u>0</u>	x 1 =	<u>0</u>	
FACW species	<u>5</u>	x 2 =	<u>10</u>	
FAC species	<u>40</u>	x 3 =	<u>120</u>	
FACU species	<u>0</u>	x 4 =	<u>0</u>	
UPL species	<u>0</u>	x 5 =	<u>0</u>	
Column Totals:	<u>45</u>	(A)	<u>130</u>	(B)
Prevalence Index = B/A =			<u>2.89</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 No

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

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Spaulding Turnpike City/County: Rochester/Strafford Sampling Date: 7/30/2020
 Applicant/Owner: NHDOT State: NH Sampling Point: RW15 UPL
 Investigator(s): B. Griffith Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Mound Local relief (concave, convex, none): Convex Slope %: 0
 Subregion (LRR or MLRA): LRR R Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (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 _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ ? Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ 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 <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
--	---

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: RW15 UPL

<u>Tree Stratum</u> (Plot size: <u> 30' R </u>)	Absolute % Cover	Dominant Species?	Indicator Status																																	
1. <u> Pinus strobus </u>	<u> 50 </u>	Yes	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> 1 </u> (A) Total Number of Dominant Species Across All Strata: <u> 4 </u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u> 25.0% </u> (A/B)																																
2. <u> Tsuga canadensis </u>	<u> 20 </u>	Yes	FACU																																	
3. <u> Acer rubrum </u>	<u> 10 </u>	No	FAC																																	
4. <u> Quercus alba </u>	<u> 10 </u>	No	FACU																																	
5. _____	_____	_____	_____																																	
6. _____	_____	_____	_____																																	
7. _____	_____	_____	_____																																	
	<u> 90 </u>	=Total Cover		Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="text-align:right;">Total % Cover of:</td> <td style="text-align:center;">_____</td> <td style="text-align:right;">Multiply by:</td> <td style="text-align:center;">_____</td> </tr> <tr> <td>OBL species</td> <td style="text-align:center;"><u> 0 </u></td> <td>x 1 =</td> <td style="text-align:center;"><u> 0 </u></td> </tr> <tr> <td>FACW species</td> <td style="text-align:center;"><u> 10 </u></td> <td>x 2 =</td> <td style="text-align:center;"><u> 20 </u></td> </tr> <tr> <td>FAC species</td> <td style="text-align:center;"><u> 10 </u></td> <td>x 3 =</td> <td style="text-align:center;"><u> 30 </u></td> </tr> <tr> <td>FACU species</td> <td style="text-align:center;"><u> 110 </u></td> <td>x 4 =</td> <td style="text-align:center;"><u> 440 </u></td> </tr> <tr> <td>UPL species</td> <td style="text-align:center;"><u> 0 </u></td> <td>x 5 =</td> <td style="text-align:center;"><u> 0 </u></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align:center;"><u> 130 </u></td> <td>(A)</td> <td style="text-align:center;"><u> 490 </u> (B)</td> </tr> <tr> <td colspan="4" style="text-align:center;">Prevalence Index = B/A = <u> 3.77 </u></td> </tr> </table>	Total % Cover of:	_____	Multiply by:	_____	OBL species	<u> 0 </u>	x 1 =	<u> 0 </u>	FACW species	<u> 10 </u>	x 2 =	<u> 20 </u>	FAC species	<u> 10 </u>	x 3 =	<u> 30 </u>	FACU species	<u> 110 </u>	x 4 =	<u> 440 </u>	UPL species	<u> 0 </u>	x 5 =	<u> 0 </u>	Column Totals:	<u> 130 </u>	(A)	<u> 490 </u> (B)	Prevalence Index = B/A = <u> 3.77 </u>			
Total % Cover of:	_____	Multiply by:	_____																																	
OBL species	<u> 0 </u>	x 1 =	<u> 0 </u>																																	
FACW species	<u> 10 </u>	x 2 =	<u> 20 </u>																																	
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Column Totals:	<u> 130 </u>	(A)	<u> 490 </u> (B)																																	
Prevalence Index = B/A = <u> 3.77 </u>																																				
<u> Tsuga canadensis </u>	<u> 30 </u>	Yes	FACU																																	
2. <u> Vaccinium corymbosum </u>	<u> 10 </u>	Yes	FACW																																	
3. _____	_____	_____	_____																																	
4. _____	_____	_____	_____																																	
5. _____	_____	_____	_____																																	
6. _____	_____	_____	_____																																	
7. _____	_____	_____	_____																																	
	<u> 40 </u>	=Total Cover																																		
<u> Sapling/Shrub Stratum </u> (Plot size: <u> 15' R </u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																
1. _____	_____	_____	_____																																	
2. _____	_____	_____	_____																																	
3. _____	_____	_____	_____																																	
4. _____	_____	_____	_____																																	
5. _____	_____	_____	_____																																	
6. _____	_____	_____	_____																																	
7. _____	_____	_____	_____																																	
8. _____	_____	_____	_____																																	
9. _____	_____	_____	_____																																	
10. _____	_____	_____	_____																																	
11. _____	_____	_____	_____																																	
12. _____	_____	_____	_____																																	
	_____	=Total Cover																																		
<u> Woody Vine Stratum </u> (Plot size: <u> 30' R </u>)				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.																																
1. _____	_____	_____	_____																																	
2. _____	_____	_____	_____																																	
3. _____	_____	_____	_____																																	
4. _____	_____	_____	_____																																	
	_____	=Total Cover																																		
Hydrophytic Vegetation Present? Yes <u> </u> No <u> X </u>																																				

Remarks: (Include photo numbers here or on a separate sheet.)
 No herbs in plot

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Spaulding Turnpike City/County: Rochester/Strafford Sampling Date: 7/30/2020
 Applicant/Owner: NHDOT State: NH Sampling Point: RW15 Wet
 Investigator(s): B. Griffith Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope %: 1
 Subregion (LRR or MLRA): LRR R Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) <u>X</u> High Water Table (A2) _____ Aquatic Fauna (B13) <u>X</u> Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ 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 <u>X</u> Depth (inches): _____ Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>1</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
--	---

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: RW15 Wet

<u>Tree Stratum</u> (Plot size: <u> 30' R </u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u><i>Acer rubrum</i></u>	<u> 30 </u>	<u> Yes </u>	<u> FAC </u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> 3 </u> (A) Total Number of Dominant Species Across All Strata: <u> 5 </u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u> 60.0% </u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u> 30 </u> =Total Cover			Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="text-align:right;">Total % Cover of:</td> <td style="text-align:right;">Multiply by:</td> </tr> <tr> <td>OBL species <u> 0 </u></td> <td>x 1 = <u> 0 </u></td> </tr> <tr> <td>FACW species <u> 30 </u></td> <td>x 2 = <u> 60 </u></td> </tr> <tr> <td>FAC species <u> 30 </u></td> <td>x 3 = <u> 90 </u></td> </tr> <tr> <td>FACU species <u> 4 </u></td> <td>x 4 = <u> 16 </u></td> </tr> <tr> <td>UPL species <u> 0 </u></td> <td>x 5 = <u> 0 </u></td> </tr> <tr> <td>Column Totals: <u> 64 </u></td> <td>(A) <u> 166 </u> (B)</td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = <u> 2.59 </u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u> 0 </u>	x 1 = <u> 0 </u>	FACW species <u> 30 </u>	x 2 = <u> 60 </u>	FAC species <u> 30 </u>	x 3 = <u> 90 </u>	FACU species <u> 4 </u>	x 4 = <u> 16 </u>	UPL species <u> 0 </u>	x 5 = <u> 0 </u>	Column Totals: <u> 64 </u>	(A) <u> 166 </u> (B)	Prevalence Index = B/A = <u> 2.59 </u>	
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Column Totals: <u> 64 </u>	(A) <u> 166 </u> (B)																			
Prevalence Index = B/A = <u> 2.59 </u>																				
<u>Sapling/Shrub Stratum</u> (Plot size: <u> 15' R </u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u><i>Vaccinium corymbosum</i></u>	<u> 25 </u>	<u> Yes </u>	<u> FACW </u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u> 25 </u> =Total Cover																			
<u>Herb Stratum</u> (Plot size: <u> 5' R </u>)				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 <u> X </u> No <u> </u>																
1. <u><i>Vaccinium corymbosum</i></u>	<u> 5 </u>	<u> Yes </u>	<u> FACW </u>																	
2. <u><i>Maianthemum canadense</i></u>	<u> 2 </u>	<u> Yes </u>	<u> FACU </u>																	
3. <u><i>Tsuga canadensis</i></u>	<u> 2 </u>	<u> Yes </u>	<u> FACU </u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
	<u> 9 </u> =Total Cover																			
<u>Woody Vine Stratum</u> (Plot size: <u> 30' R </u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
	_____ =Total Cover																			

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

Color Photographs

Wetland Photographs



Photo 1. RW1 from wetland plot facing north. 7/30/20.



Photo 2. RW2 Wetland plot facing east. 5/13/20.

Wetland Photographs



Photo 3. RW3 from wetland plot facing south. 5/13/20.



Photo 4. RW4 from wetland plot facing north 5/13/20.

Wetland Photographs



Photo 5. RW5 from wetland plot facing south. 7/30/20.



Photo 6. RW6 from wetland plot facing south. 6/30/20.

Wetland Photographs



Photo 7. RW7 from wetland plot facing south. 7/30/20.



Photo 8. RW8 from wetland plot facing north 6/13/20.

Wetland Photographs



Photo 9. RW9 from wetland plot facing west. 6/13/20.



Photo 10. RW11 from wetland plot facing west. 5/13/20.

Wetland Photographs



Photo 11. RW13 from wetland plot facing southwest. 5/13/20.



Photo 12. RW14 from wetland plot facing west. 6/20/20.

Wetland Photographs



Photo 13. RW15 from wetland plot facing southwest. 7/1/20.



Photo 14. RW16 from wetland plot facing west. 7/1/20.

Wetland Photographs



Photo 15. RW17 from wetland plot facing south. 7/1/20.



Photo 16. RVP01 in Wetland RW9, looking north along Turnpike. 5/13/20.

Stream Photographs



Photo 1, above. 6/19/20. Perennial Stream RS1 looking upstream above existing culvert and just above confluence with Stream RS2.

Photo 2, below. 6/19/20. Intermittent Stream RS2 just above confluence with RS1.



Stream Photographs



Photo 3, above. May 13, 2020.
Intermittent Stream RS3 looking
upstream from culvert.

Photo 4, left. 6/19/20. Perennial
Stream RS5, looking upstream from
culvert under Turnpike.

Stream Photographs



Photo 5, above. 6/19/20. Perennial Stream RS6 looking downstream from X-section 3 towards Turnpike.

Photo 6, below. 6/25/20. Intermittent Stream RS7 just upstream of culvert under Turnpike.



Stream Photographs



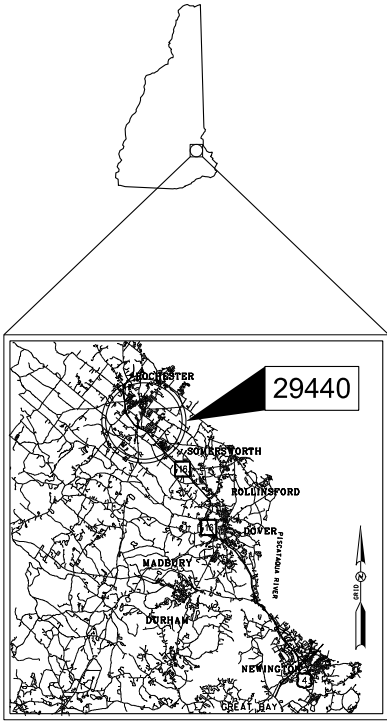
Photo 7. 6/25/20. Stream RS8, looking downstream through ephemeral section toward intermittent segment.

Construction Sequence
Narrative

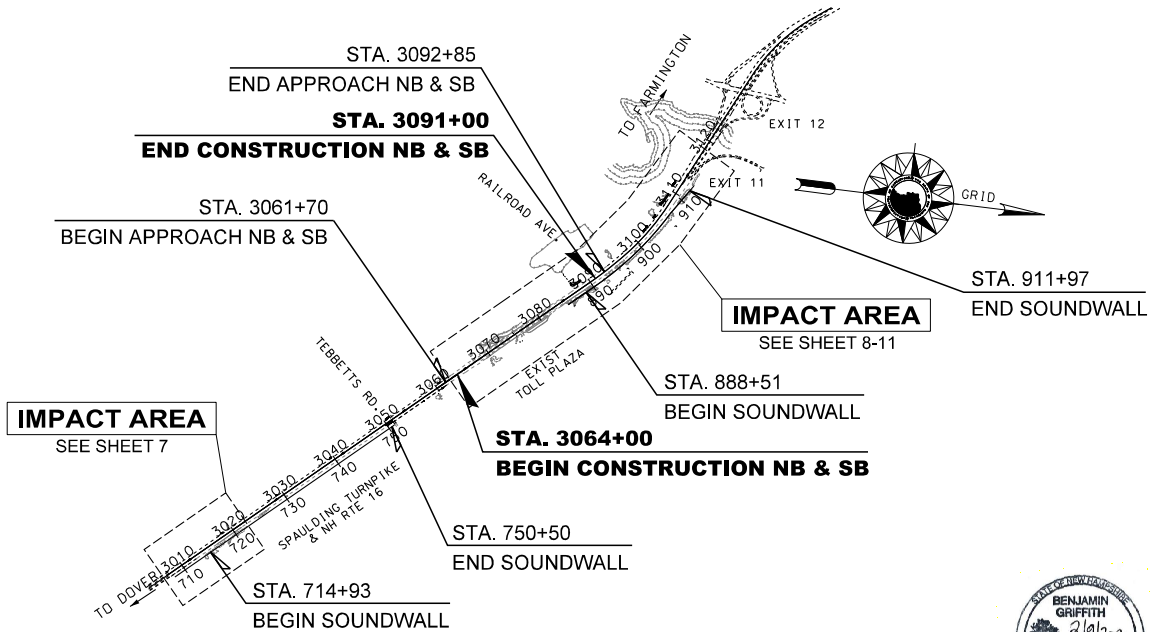
Please see wetland permit plan set, Sheet 5

Wetland Impact Plans
and
Erosion Control Plans

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION
WETLAND IMPACT PLANS
SPAULDING TURNPIKE (NH ROUTE 16)
ALL ELECTRONIC TOLLING



LOCATION MAP



IMPACT AREA
SEE SHEET 7

IMPACT AREA
SEE SHEET 8-11

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE PAGE
2-3	STANDARD SYMBOLS
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PROGRESS PLANS
SUBJECT TO CHANGE
DATE 2/12/2021

CITY OF ROCHESTER

STRAFFORD COUNTY

SCALE: 1" = 1000'



WETLANDS WERE DELINEATED BY NORMANDEAU ASSOCIATES, INC., CERTIFIED WETLAND SCIENTIST BEN GRIFFITH (NHCS #298) ON MAY 5-14, 2020. UNLESS OTHERWISE NOTED, WETLAND FIELD DELINEATION'S WERE COMPLETED IN ACCORDANCE WITH THE NHDES ADMINISTRATIVE RULES ENV-PT 301.01 AND MEET THE CRITERIA FOR WETLAND DELINEATION IN ACCORDANCE WITH THE U.S. ARMY CORPS OF ENGINEERS WETLAND DELINEATION MANUAL, TECHNICAL REPORT 1-87-1 AND THE REGIONAL SUPPLEMENT FOR THE NORTHEAST REGION (JANUARY, 2012).

ROADWAY PLANS PREPARED BY:

HNTB The HNTB Companies
Engineers, Architects, Planners
340 County Road, Suite 60
Westbrook, Maine 04092
(207) 774-5155 FAX (207) 226-0909
HNTB CORPORATION

NHDOT THE STATE OF
NEW HAMPSHIRE
DEPARTMENT OF
TRANSPORTATION

RECOMMENDED FOR APPROVAL:

DIRECTOR OF PROJECT DEVELOPMENT DATE

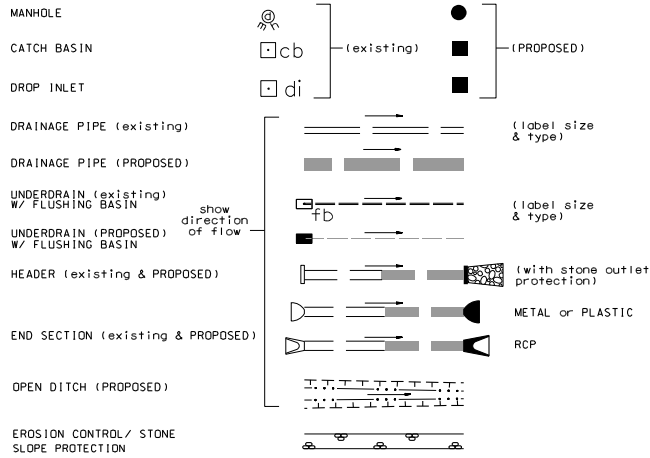
APPROVED:

ASSISTANT COMMISSIONER AND CHIEF ENGINEER DATE

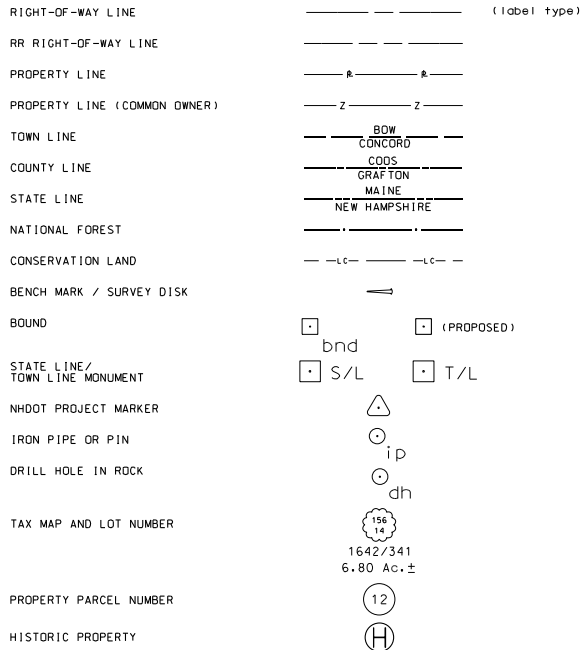
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DRAWN BY: HNTB DESIGN TEAM DATE: 10/2020
CHECKED BY: P. KENDALL & G. SMITH DATE: 10/2020

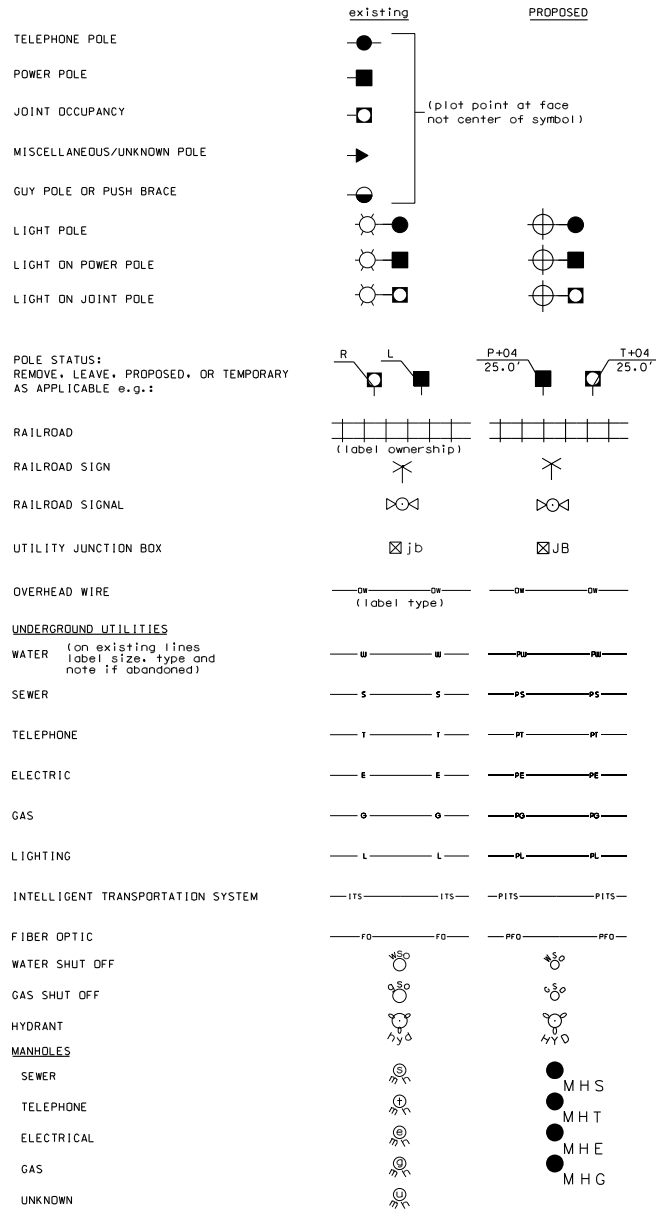
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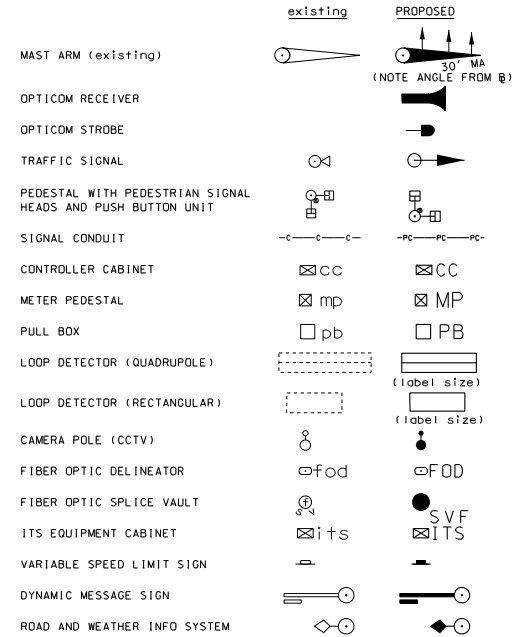
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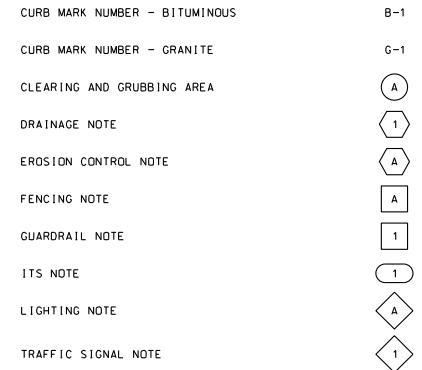
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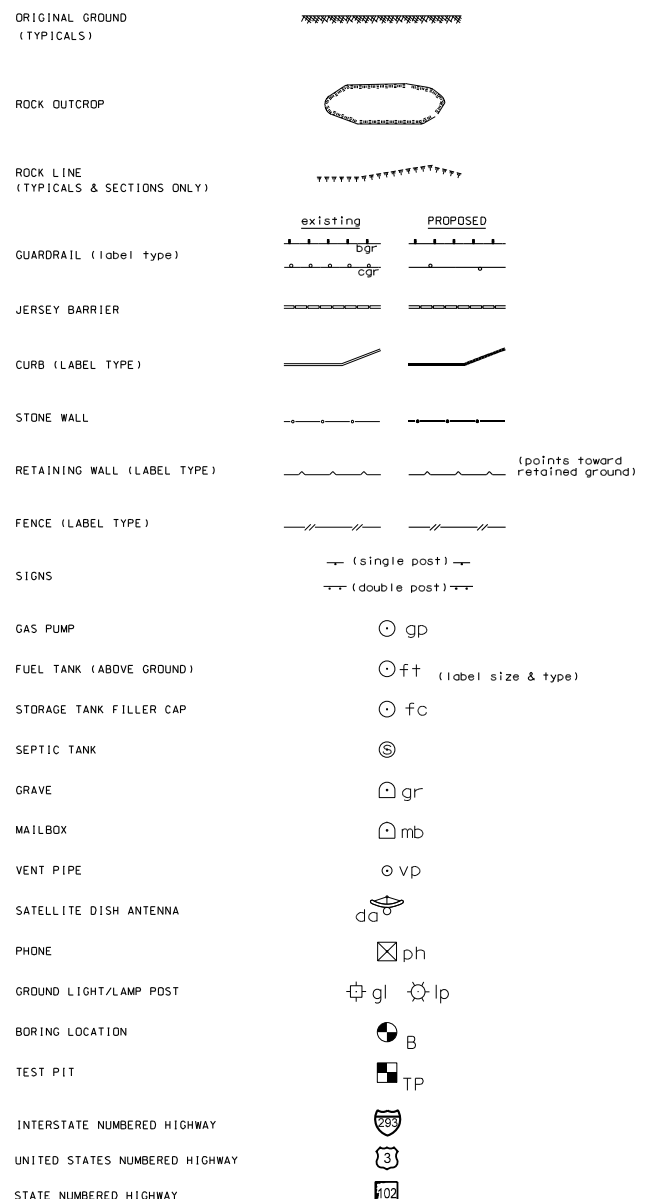
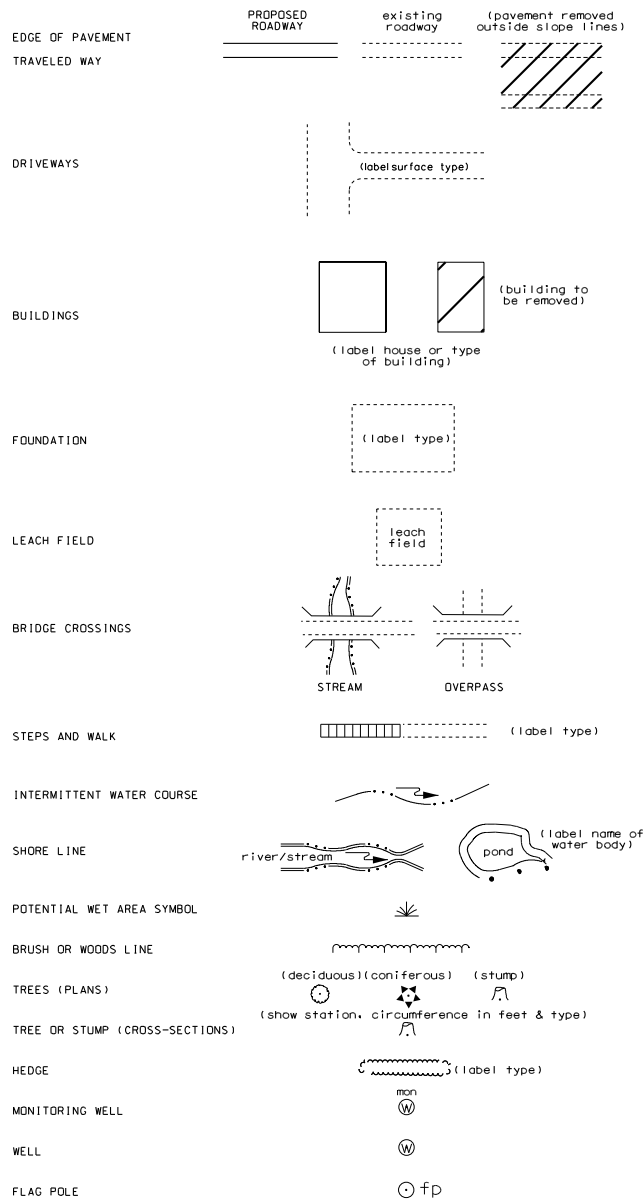
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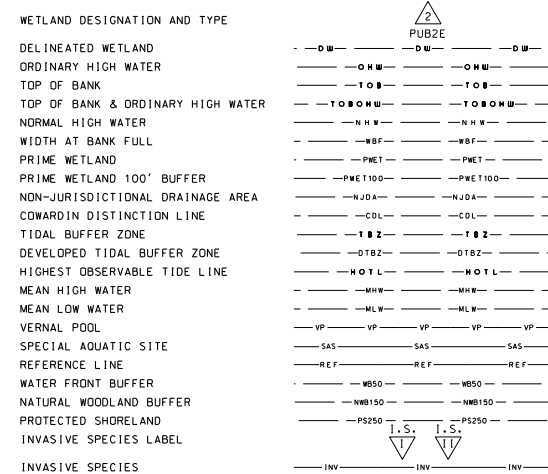
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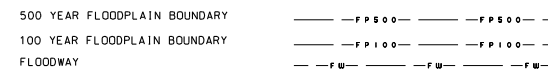
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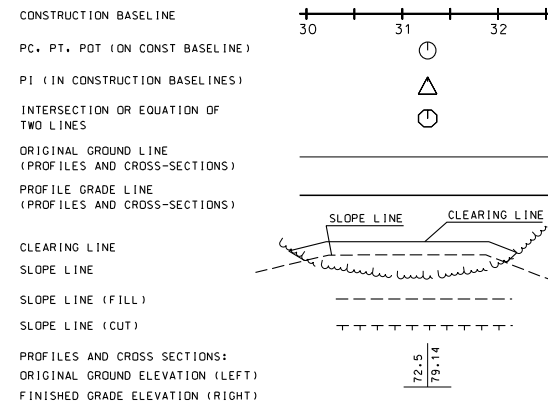
SHORELAND - WETLAND



FLOODPLAIN / FLOODWAY



ENGINEERING



STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION		BUREAU OF TURNPIKES	
STANDARD SYMBOLS			

REVISION DATE	DCM	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
11-21-2014	stdsyml-2	29440	3	19

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 REGULATIONS 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-WO 1500 REQUIREMENTS (HTTP://DES.NH.GOV/ORGANIZATION/ORDINATIONS/WATER/WE/1500S/INDEX.HTML)
 - 1.6. THE CONTRACTOR IS DIRECTED TO REVIEW AND COMPLY WITH SECTION 107.01 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% VEGETATIVE GROWTH HAS BEEN ESTABLISHED;
 - (C) A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP-RAP HAS BEEN INSTALLED;
 - (D) 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 30th AND MAY 1st 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 15th, OR WHICH ARE DISTURBED AFTER OCTOBER 15th, 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 15th, OR WHICH ARE DISTURBED AFTER OCTOBER 15th, SHALL BE STABILIZED TEMPORARILY WITH STONE OR IN ACCORDANCE WITH TABLE 1.
 - (C) AFTER NOVEMBER 30th 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-WO 1505.02 AND ENV-WO 1505.05.
 - (E) A SWPPP AMENDMENT SHALL BE SUBMITTED TO THE DEPARTMENT, FOR APPROVAL, ADDRESSING COLD WEATHER STABILIZATION (ENV-WO 1505.05) AND INCLUDING THE REQUIREMENTS OF NO LESS THAN 30 DAYS PRIOR TO THE COMMENCEMENT OF WORK SCHEDULED AFTER NOVEMBER 30th.
- 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 FEATURES (WETLAND, OPEN WATER OR FLOWING WATER), PERIMETER CONTROL SHALL BE ENHANCED CONSISTENT WITH SECTION 2.1-2.1.1, OF THE 2017 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 TRAFFICKING.
 - 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 1st THROUGH NOVEMBER 30th, 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 15th 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-WO 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 DESIGNED TO PREVENT STORMWATER RUNOFF FROM AREAS GREATER THAN 4 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 TEMPORARY 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 485A:17 AND ENV-WO 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 485A:17 AND ENV-WO 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 MATRICES (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 485A:17 AND ENV-WO 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-WO 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 ¹	YES ¹	YES	YES	NO	NO	NO	YES	YES	NO	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	YES	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	NO	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.

PROGRESS PLANS
 SUBJECT TO CHANGE
 DATE 2/12/2021



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

EROSION CONTROL STRATEGIES

MODEL	DNM	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
Default	29440Ero.Stro	29440	4	19

NO. REVISIONS	DATE	DESCRIPTION
1	2/12/2021	PROGRESS PLANS SUBJECT TO CHANGE

STATION	DATE	DESCRIPTION
1	2/12/2021	PROGRESS PLANS SUBJECT TO CHANGE

SHEET CHECKED	DATE	DESCRIPTION
1	2/12/2021	PROGRESS PLANS SUBJECT TO CHANGE

AS BUILT DETAILS	DATE	DESCRIPTION
1	2/12/2021	PROGRESS PLANS SUBJECT TO CHANGE

CONSTRUCTION SEQUENCE

GENERAL TRAFFIC CONTROL NOTES

(APPLICABLE TO ALL TRAFFIC CONTROL PLANS):

- REFER TO NHDOT WORK ZONE TRAFFIC CONTROL STANDARD PLANS FOR TYPICAL SIGN LAYOUTS. SIGNS SHALL NOT BLOCK OTHER ROADWAY SIGNS. REFER TO MUTCD FOR CONDITIONS NOT ADDRESSED BY THE STANDARD PLANS.
- ALL TEMPORARY TRAFFIC LANES SHALL BE A MINIMUM OF 12 FEET IN WIDTH UNLESS OTHERWISE NOTED. PLACE ALL TEMPORARY PAVEMENT MARKINGS, SYMBOLS AND WORDS IN ACCORDANCE WITH NHDOT STANDARD PLANS, STANDARD NDS, PM-1 THROUGH PM-14.
- IMPACT ATTENUATORS (ITEM 606.9523) AND START OF PORTABLE CONCRETE BARRIER (ITEM 606.417) MUST BE ILLUMINATED AT ALL TIMES.
- THE CONTRACTOR SHALL LIMIT THE AREA OF DISTURBANCE COMMENSURATE WITH THE CONTRACTOR'S CAPABILITIES AND PROGRESS IN KEEPING GRADING, MULCHING, SEEDING AND UTILIZING TEMPORARY AND PERMANENT EROSION CONTROL MEASURES CONCURRENT WITH OPERATIONS. EARTHWORK STOCKPILES ARE TO BE SEEDED AND MULCHED AND HAVE SILT FENCE INSTALLED ON THE DOWNSLOPE SIDE.
- INSTALL DRAINAGE SYSTEMS, PIPES, CULVERTS, DITCHES AND TEMPORARY EROSION CONTROL PROTECTIONS IN A SEQUENCE FROM OUTLET TO INLET IN ORDER TO STABILIZE OUTLET AREAS BEFORE RUNOFF IS DIRECTED TO THEM.
- THE FINAL SURFACE COURSE OF PAVEMENT AND FINAL STRIPING IS ASSUMED TO BE PLACED AFTER THE FINAL CONSTRUCTION PHASE WITH THE EXCEPTION OF THE NET TOLL ZONE. FINAL PAVING AND STRIPING IS ASSUMED TO BE COMPLETED USING TEMPORARY LANE CLOSURES.

PHASE 1 CONSTRUCTION

- CONSTRUCT MEDIAN, MEDIAN DRAINAGE, AND INSTALL MEDIAN BARRIER FROM STA. 3064+00 TO STA. 3069+50.
- INSTALL TOLL GANTRY FOUNDATIONS, TOLL GANTRY AND TOLLING EQUIPMENT.
- CONSTRUCT TOLL SHELTER AND ACCESS ROAD.
- CONSTRUCT MEDIAN, MEDIAN DRAINAGE, AND INSTALL MEDIAN BARRIER FROM STA. 3081+00 TO STA. 3089+00.
- CONSTRUCT WATER QUALITY BMP AND INSTALL CROSS PIPES.

PHASE 2A CONSTRUCTION

- REMOVE TOLL PLAZA CANOPY AND DISMANTLE EXISTING TOLL EQUIPMENT PRIOR TO DEMOLITION OF EXISTING TOLL ISLANDS, SUPPORT COLUMNS, AND CONCRETE SLABS.
- REMOVE THE SOUTHBOUND OUTSIDE SUPPORT COLUMN, TOLL BOOTH AND TOLL ISLAND, AND REMOVE CONCRETE SLAB.
- REMOVE EXISTING DRAINAGE STRUCTURES FROM WESTERLY TOLL LANES.
- FILL EXISTING UTILITY TUNNEL WITH FLOWABLE FILL.
- REPLACE VOIDS FROM TOLL ISLAND AND SLAB REMOVAL WITH SELECT MATERIAL. PLACE FULL DEPTH PAVEMENT FROM STA. 3074+00 TO 3076+50.
- CONTRACTOR SHALL UTILIZE DYNAMIC MESSAGE BOARDS CONVEYING "DO NOT STOP AT PLAZA" AND "TOLL COLLECTED ELECTRONICALLY" DURING THE TIMEFRAME THAT TRAFFIC PASSES THROUGH THE EXISTING TOLL PLAZA PRIOR TO REMOVAL.

PHASE 2B CONSTRUCTION

- REMOVE THE NORTHBOUND OUTSIDE SUPPORT COLUMN, TOLL BOOTH AND TOLL ISLAND, AND REMOVE CONCRETE SLAB.
- REMOVE EXISTING DRAINAGE STRUCTURES FROM EASTERLY TOLL LANES.
- DEMOLISH EXISTING TOLL ADMINISTRATION BUILDING.
- FILL EXISTING UTILITY TUNNEL WITH FLOWABLE FILL.
- REPLACE VOIDS FROM TOLL ISLAND AND SLAB REMOVAL WITH SELECT MATERIAL. PLACE FULL DEPTH PAVEMENT FROM STA. 3074+00 TO 3076+50.
- CONTRACTOR SHALL UTILIZE DYNAMIC MESSAGE BOARDS CONVEYING "DO NOT STOP AT PLAZA" AND "TOLL COLLECTED ELECTRONICALLY" DURING THE TIMEFRAME THAT TRAFFIC PASSES THROUGH THE EXISTING TOLL PLAZA PRIOR TO REMOVAL.

PHASE 2C CONSTRUCTION

- REMOVE REMAINING 3 TOLL BOOTHS, TOLL ISLANDS, AND TOLL SLABS.
- REMOVE EXISTING DRAINAGE STRUCTURES FROM MIDDLE 2 LANES
- CONSTRUCT MEDIAN, MEDIAN DRAINAGE, AND INSTALL MEDIAN BARRIER FROM STA. 3069+50 TO 3081+00
- REPLACE VOIDS FROM TOLL ISLAND AND SLAB REMOVAL WITH SELECT MATERIAL. PLACE FULL DEPTH PAVEMENT FROM STA. 3074+00 TO 3076+50.

PHASE 3 CONSTRUCTION

- CONSTRUCT DITCHING AND REMOVE EXISTING PAVEMENT BEYOND ULTIMAT LIMITS ON THE OUTSIDE OF BOTH NB AND SB ROADWAYS.
- INSTALL GUARDRAIL, CURBING, AND DRAINAGE AS NOTED ON THE PLANS
- REMOVE TOLL ADMINISTRATION BUILDING IF NOT COMPLETED IN PHASE 2B.

SJR PROCESSED	NAME1	DATE1	REVISIONS AFTER PROPOSAL		
			NUMBER	DATE	DESCRIPTION
NEW DESIGN	NAME2	DATE2	STATION		
SHEET CHECKED	NAME3	DATE3			
AS BUILT DETAILS		DATE			

PROGRESS PLANS
SUBJECT TO CHANGE
DATE 2/12/2021



STATE OF NEW HAMPSHIRE				
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN				
ROCHESTER				
CONSTRUCTION SEQUENCE				
MODEL	DCM	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
Default	29440Constr_Seq	29440	5	19

SDR PROCESSED NAME1
 NEW DESIGN NAME2
 SHEET CHECKED NAME3
 AS BUILT DETAILS
 DATE DATE1
 DATE DATE2
 DATE DATE3
 DATE
 NUMBER
 STATION
 STATION
 STATION
 REVISIONS AFTER PROPOSAL
 DESCRIPTION

WETLAND AND STREAM IMPACT SUMMARY														
WETLAND NUMBER	WETLAND CLASSIFICATION	LOCATION	WETLAND IMPACTS						STREAM IMPACTS					
			PERMANENT			TEMPORARY*			PERMANENT		TEMPORARY			
			N. H. W. B. (NON-WETLAND)		N. H. W. B. & A. C. D. E. (WETLAND)		SF	LF	BANK LEFT	BANK RIGHT	STREAM CHANNEL	STREAM CHANNEL	STREAM CHANNEL	STREAM CHANNEL
			SF	LF	SF	LF								
		ROCHESTER												
RW15	PF01E	A			9513		259							
RW14	PF01E	B			1545		94							
RW14	PF01E	C			7									
RW13	PF01E	D			8782									
RW4	PF01B	E			552		3							
RW4	PF01B	F			289		75							
RW4	PF01B	G			131									
RW1	PF01E	H			40		102							
RW6	PF01E	I			896		17							
RW7	PF01E	J			222		516							
RW7	PF01E	K			437		996							
RW8	PF01E	L			379		423							
RW8	PF01E	M			736		402							
RWS/RVP1	PF01E/RVP01***	N			8769		5196**							
RS7	R4SB4	D							73		812			
RS2	R4SB4	P							208		834			
RS3	R4SB4	O							21		168			
RS4	R4SB4	R							67		433			
RS8	R4SB4	S										8	25	
RS8	R4SB4	T										7	17	
RS8	R4SB4	U										7	43	
TOTAL					32298		8083				369	2247	22	85

PERMANENT IMPACTS: 32298 SF
 TEMPORARY IMPACTS: 8083 SF
 PERMANENT IMPACTS: 369 LF
 TEMPORARY IMPACTS: 22 LF
 PERMANENT IMPACTS: 2247 SF
 TEMPORARY IMPACTS: 85 SF
 TOTAL IMPACTS: 40381 SF
 TOTAL IMPACTS: 391 LF
 TOTAL IMPACTS: 2332 SF

WETLAND CLASSIFICATION CODES	
PF01B	PALUSTRINE, FORESTED, BROAD-LEAVED DECIDUOUS, SATURATED.
PF01E	PALUSTRINE, FORESTED, BROAD-LEAVED DECIDUOUS, SEASONALLY FLOODED/SATURATED
R4SB4	RIVERINE, INTERMITTENT, STREAMBED, SAND
R2UB2	RIVERINE, LOWER PERENNIAL, UNCONSOLIDATED BOTTOM, SAND
RVP01	VERNAL POOL

* TEMPORARY IMPACTS ARE CALCULATED AT 5' FROM THE SLOPE LIMITS TO ALLOW FOR INSTALLATION OF EROSION CONTROL MEASURES.
 ** PER THE NHDOT, TEMPORARY IMPACTS AT THIS LOCATION ARE 5' FROM THE TOE OF SLOPE ALONG THE EAST AND NORTH SIDES AND THE ENTIRE AREA ON THE WEST SIDE TO ALLOW FOR ACCESS DURING CONSTRUCTION OPERATIONS.
 *** THE RVP01 IMPACT AREA IS THE AREA OF DIRECT, PERMANENT FILL WITHIN RVP01. PER NHDOT AND THE NATURAL RESOURCE AGENCIES, THE VERNAL POOL RVP01 IS TO BE CONSIDERED A COMPLETE PERMANENT LOSS, AND BOTH THE DIRECT IMPACT AREA AS WELL AS THE PERMANENT FUNCTIONAL LOSS WILL BE MITIGATED THROUGH AN ARM FUND PAYMENT.

PROGRESS PLANS
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STATE OF NEW HAMPSHIRE
 DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

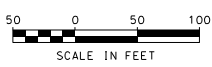
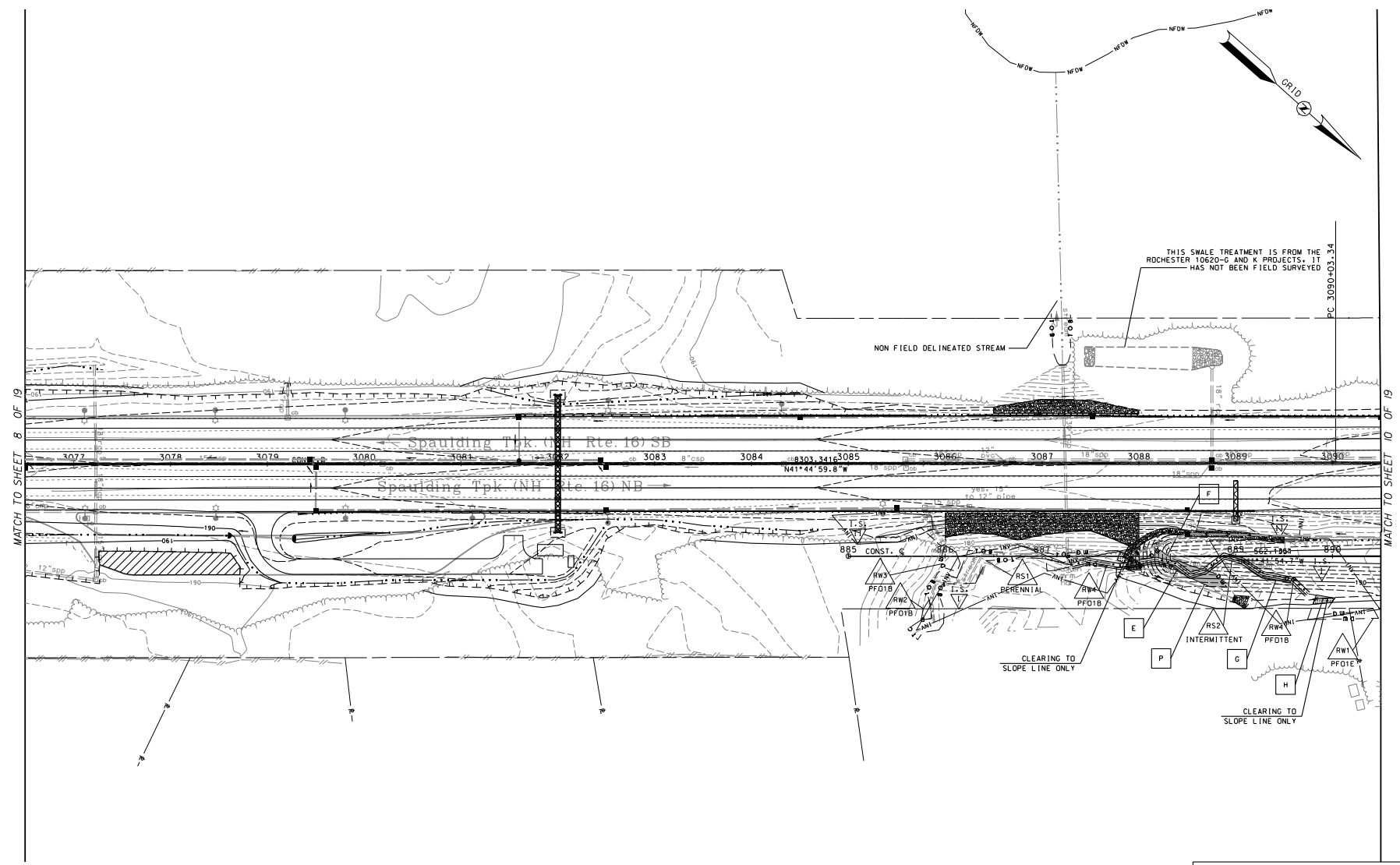
WETLAND IMPACT SUMMARY

MODEL	DCM	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
Default	29440Wet_Sum	29440	6	19

SR PROCESSED	NAME1	DATE1	DATE1	DATE1	DATE1
NEW DESIGN	NAME2	DATE2	DATE2	DATE2	DATE2
SHEET CHECKED	NAME3	DATE3	DATE3	DATE3	DATE3
AS BUILT DETAILS		DATE			

STATION	REVISIONS AFTER PROPOSAL	DESCRIPTION
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NUMBER	DATE	STATION
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PROGRESS PLANS
SUBJECT TO CHANGE
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STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

WETLAND IMPACT PLANS

MODEL	DCM	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
Wet10	29440WetPlans_R	29440	9	19

