

Maine Department of Environmental Protection  
Natural Resources Protection Act, Maine General Permit, Stormwater Management Law permit  
application pursuant to 38 M.R.S.A. §§ 420-D and 480-A through 490 and Section 307 of the  
federal Coastal Zone Management Act, 16 U.S.C. § 1456, and Section 404 of the Clean Water Act

Town of Scarborough  
Eastern Trail Connector Project  
Scarborough to South Portland, Maine



July 2024

Prepared for the Town of Scarborough by:

**HNTB**

HNTB Corporation

82 Running Hill Road, Suite 201

South Portland, ME 04106

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September 27, 2023

Ms. Judy Gates  
HNTB Corporation  
82 Running Hill Road, Suite 201  
South Portland, ME 04106

Dear Ms. Gates:

The Town of Scarborough hereby authorizes HNTB Corporation to act on its behalf regarding the Maine Department of Environmental Protection (DEP) and United States Army Corps of Engineers (USACE) permit filing for the proposed Eastern Trail Connector Project, located in Scarborough and South Portland, Maine.

Authorization includes completing all paperwork and materials necessary for permit filing and to serve as the DEP and USACE point of contact for questions pertaining to the permit.

Sincerely,

Thomas J. Hall

Town Manager

Town of Scarborough

## Application for a Natural Resources Protection Permit

→ PLEASE TYPE OR PRINT IN **BLACK INK ONLY**

<b>1. Name of Applicant:</b> Town of Scarborough Attn: Tom Hall		<b>5. Name of Agent:</b> HNTB Corporation Attn: Judy Gates							
<b>2. Applicant's Mailing Address:</b> PO Box 360 Scarborough, ME 04070-0360		<b>6. Agent's Mailing Address:</b> 82 Running Hill Road, Suite 201 South Portland, ME 04106							
<b>3. Applicant's Daytime Phone #:</b> (207) 730-4031		<b>7. Agent's Daytime Phone #:</b> (207) 228-0933							
<b>4. Applicant's Email Address (Required from either applicant or agent):</b> <a href="mailto:thall@scarboroughmaine.org">thall@scarboroughmaine.org</a>		<b>8. Agent's Email Address:</b> <a href="mailto:jugates@HNTB.com">jugates@HNTB.com</a>							
<b>9. Location of Activity: (Nearest Road, Street, Rt.#)</b> 139 Pleasant Hill Rd, Scarborough, ME 04074		<b>10. Town:</b> Scarborough & South Portland							
<b>11. County:</b> Cumberland									
<b>12. Type of Resource: (Check all that apply)</b> <input type="checkbox"/> River, stream or brook <input type="checkbox"/> Great Pond <input type="checkbox"/> Coastal Wetland <input checked="" type="checkbox"/> Freshwater Wetland <input type="checkbox"/> Wetland Special Significance <input type="checkbox"/> Significant Wildlife Habitat <input type="checkbox"/> Fragile Mountain		<b>13. Name of Resource:</b> Previously altered and unaltered wetlands and unnamed, degraded streams; some wetlands associated with tidal Nonesuch River							
		<b>14. Amount of Impact: (Sq.Ft.)</b> Total: 28,250 Sq. Ft.							
		<b>Fill:</b> 21,200 Sq. Ft. (Permanent) <b>Dredging/Veg Removal/Other:</b> 7,050 Sq. Ft. (Temporary)							
<b>15. Type of Wetland: (Check all that apply)</b> <input checked="" type="checkbox"/> Forested <input checked="" type="checkbox"/> Scrub Shrub <input type="checkbox"/> Emergent <input type="checkbox"/> Wet Meadow <input type="checkbox"/> Peatland <input type="checkbox"/> Open Water <input type="checkbox"/> Other _____		<b>FOR FRESHWATER WETLANDS</b> <table border="1"> <thead> <tr> <th>Tier 1</th> <th>Tier 2</th> <th>Tier 3</th> </tr> </thead> <tbody> <tr> <td> <input type="checkbox"/> 0 - 4,999 sq ft.  <input type="checkbox"/> 5,000-9,999 sq ft  <input type="checkbox"/> 10,000-14,999 sq ft               </td> <td> <input type="checkbox"/> 15,000 – 43,560 sq. ft.             </td> <td> <input type="checkbox"/> &gt; 43,560 sq. ft. or  <input type="checkbox"/> smaller than 43,560 sq. ft., not eligible for Tier 1             </td> </tr> </tbody> </table>		Tier 1	Tier 2	Tier 3	<input type="checkbox"/> 0 - 4,999 sq ft. <input type="checkbox"/> 5,000-9,999 sq ft <input type="checkbox"/> 10,000-14,999 sq ft	<input type="checkbox"/> 15,000 – 43,560 sq. ft.	<input type="checkbox"/> > 43,560 sq. ft. or <input type="checkbox"/> smaller than 43,560 sq. ft., not eligible for Tier 1
Tier 1	Tier 2	Tier 3							
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<b>16. Brief Activity Description:</b>		Construction of a 1.6-mile non-motorized pedestrian/bike trail between the northern extent of the existing trail in Scarborough to the southernmost extent in South Portland. See Attachment 1.							
<b>17. Size of Lot or Parcel &amp; UTM Locations:</b>		Linear Project 1.6 miles ____square feet, or <input type="checkbox"/> 5.2 acres UTM Northing: 4828138.07 UTM Easting: 94849.98							
<b>18. Title, Right or Interest:</b>		<input type="checkbox"/> own <input type="checkbox"/> lease <input type="checkbox"/> purchase option <input checked="" type="checkbox"/> written agreements See Attachment 15							
<b>19. Deed Reference Numbers:</b> See Attachment 10		<b>20. Map and Lot Numbers:</b> Map #: See Attachment Lot #: Various							
<b>21. DEP Staff Previously Contacted:</b> Christine Woodruff, Robert Green, Dawn Hallowell, Alison Sirois		<b>22. Part of a larger project:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <b>After-the-Fact:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No							
<b>23. Resubmission of Application?:</b> <input checked="" type="checkbox"/> Yes → No		<b>If yes, previous application #</b> L-28061-NJ-A-N L-28061-TE-B-N L-28061-2F-C-N <b>Previous project manager:</b> Christine Woodruff							
<b>24. Written Notice of Violation?:</b> <input type="checkbox"/> Yes → <input checked="" type="checkbox"/> No		<b>If yes, name of DEP enforcement staff involved:</b> NA <b>25. Previous Wetland Alteration:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No							
<b>26. Detailed Directions to the Project Site:</b>		Linear Project is in the vicinity of 139 Pleasant Hill Rd, Scarborough, ME 04074. See Attachment 3.							

27. TIER 1		TIER 2/3 AND INDIVIDUAL PERMITS	
<input type="checkbox"/> Title, right or interest documentation <input type="checkbox"/> Topographic Map <input type="checkbox"/> Narrative Project Description <input type="checkbox"/> Plan or Drawing (8 1/2" x 11") <input type="checkbox"/> Photos of Area <input type="checkbox"/> Statement of Avoidance & Minimization <input type="checkbox"/> Statement/Copy of cover letter to MHPC	<input checked="" type="checkbox"/> Title, right or interest documentation <input checked="" type="checkbox"/> Topographic Map <input checked="" type="checkbox"/> Copy of Public Notice/Public Information Meeting Documentation <input checked="" type="checkbox"/> Wetlands Delineation Report that contains the Information listed under Site Conditions <input checked="" type="checkbox"/> Alternatives Analysis including description of how wetland impacts were Avoided/Minimized	<input checked="" type="checkbox"/> Erosion Control/Construction Plan <input checked="" type="checkbox"/> Functional Assessment, if required <input checked="" type="checkbox"/> Compensation Plan, if required <input checked="" type="checkbox"/> Appendix A and others, if required <input checked="" type="checkbox"/> Statement/Copy of cover letter to MHPC <input type="checkbox"/> A Description of Previously Mined Peatland, if required	
28. FEES Amount Enclosed:		\$897.33	
<b>CERTIFICATIONS AND SIGNATURES LOCATED ON PAGE 2</b>			

**IMPORTANT:** IF THE SIGNATURE BELOW IS NOT THE APPLICANT'S SIGNATURE, ATTACH LETTER OF AGENT AUTHORIZATION SIGNED BY THE APPLICANT.

By signing below the applicant (or authorized agent), certifies that he or she has read and understood the following:

**DEP SIGNATORY REQUIREMENT**

**PRIVACY ACT STATEMENT**

Authority: 33 USC 401, Section 10; 1413, Section 404. Principal Purpose: These laws require permits authorizing activities in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. Disclosure: Disclosure of requested information is voluntary. If information is not provided, however, the permit application cannot be processed nor a permit be issued.

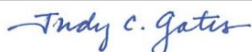
**CORPS SIGNATORY REQUIREMENT**

USC Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry shall be fined not more than \$10,000 or imprisoned not more than five years or both. I authorize the Corps to enter the property that is subject to this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein.

**DEP SIGNATORY REQUIREMENT**

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Further, I hereby authorize the DEP to send me an electronically signed decision on the license I am applying for with this application by emailing the decision to the address located on the front page of this application (see #4 for the applicant and #8 for the agent)."



SIGNATURE OF AGENT/APPLICANT

Date: July 8, 2024

**NOTE:** Any changes in activity plans must be submitted to the DEP and the Corps in writing and must be approved by both agencies prior to implementation. Failure to do so may result in enforcement action and/or the removal of the unapproved changes to the activity.

**DEPARTMENT OF ENVIRONMENTAL PROTECTION  
PERMIT BY RULE NOTIFICATION FORM**

(For use with DEP Regulation, Natural Resources Protection Act - Permit by Rule Standards, Chapter 305)

APPLICANT INFORMATION (Owner)				AGENT INFORMATION (If Applying on Behalf of Owner)			
Name:				Name:			
Mailing Address:				Mailing Address:			
Mailing Address:				Mailing Address:			
Town/State/Zip:				Town/State/Zip:			
Daytime Phone #:		Ext:		Daytime Phone #:		Ext:	
Email Address:				Email Address:			
<b>PROJECT INFORMATION</b>							
Part of a larger project? (check 1):	<input type="checkbox"/> Yes <input type="checkbox"/> No	After the Fact? (check 1):	<input type="checkbox"/> Yes <input type="checkbox"/> No	Project involves work below mean low water? (check 1):	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name of waterbody:	
Project Town:		Town Email Address:				Map and Lot Number:	
Brief Project Description:							
Project Location & Brief Directions to Site:							

**PERMIT BY RULE (PBR) SECTIONS (Check at least one):** I am filing notice of my intent to carry out work that meets the requirements for Permit-by-Rule (PBR) under DEP Rules, [Chapter 305](#). I and my agent(s), if any, have read and will comply with all of the standards in the Sections checked below.

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Sec. (2) Act. Adj. to Prot. Natural Res. | <input type="checkbox"/> Sec. (9) Utility Crossing                 | <input type="checkbox"/> Sec. (16) Coastal Sand Dune Projects       |
| <input type="checkbox"/> Sec. (3) Intake Pipes                    | <input type="checkbox"/> Sec. (10) Stream Crossing                 | <input type="checkbox"/> Sec. (16-A) Beach Nourishment              |
| <input type="checkbox"/> Sec. (4) Replacement of Structures       | <input type="checkbox"/> Sec. (11) State Transportation Facilities | <input type="checkbox"/> Sec. (17) Transfer/Permit Extension        |
| <input type="checkbox"/> Sec. (6) Movement of Rocks or Veg.       | <input type="checkbox"/> Sec. (12) Restoration of Natural Areas    | <input type="checkbox"/> Sec. (18) Maintenance Dredging             |
| <input type="checkbox"/> Sec. (7) Outfall Pipes                   | <input type="checkbox"/> Sec. (13) F&W Creat./Water Qual. Improv.  | <input type="checkbox"/> Sec. (19) Act. Near SVP Habitat            |
| <input type="checkbox"/> Sec. (8) Shoreline Stabilization         | <input type="checkbox"/> Sec. (15) Public Boat Ramps               | <input type="checkbox"/> Sec. (20) Act. Near Waterfowl/Bird Habitat |

**NOTE: Municipal permits also may be required. Contact your local code enforcement office for information. Federal permits may be required for stream crossings and for projects involving wetland fill. Contact the Army Corps of Engineers at the Maine Project Office for information.**

**NOTIFICATION FORMS CANNOT BE ACCEPTED WITHOUT THE NECESSARY ATTACHMENTS AND FEE**

- ☐ **Attach** all required submissions for the PBR Section(s) checked above. The required submissions for each PBR Section are outlined in Chapter 305 and may differ depending on the Section you are submitting under.
- ☐ **Attach** a location map that clearly identifies the site (U.S.G.S. topo map, Maine Atlas & Gazetteer, or similar).
- ☐ **Attach Proof of Legal Name** if applicant is a corporation, LLC, or other legal entity. Provide a copy of Secretary of State's registration information (available at <http://icrs.informe.org/nei-sos-icrs/ICRS?MainPage=x>). Individuals and municipalities are not required to provide any proof of identity.

**FEE:** Pay by credit card at the [Payment Portal](#). The Permit-by-Rule fee may be found here <https://www.maine.gov/dep/feeschedule.pdf> and is currently \$307.

- ☐ **Attach** payment confirmation from the Payment Portal when filing this notification form.

**Signature & Certification:**

- I authorize staff of the Departments of Environmental Protection, Inland Fisheries & Wildlife, and Marine Resources to access the project site for the purpose of determining compliance with the rules.
- I understand that this PBR becomes effective 14 calendar days after receipt by the Department of this completed form, the required submissions, and fee, *unless the Department approves or denies the PBR prior to that date.*

**By signing this Notification Form, I represent that the project meets all applicability requirements and standards in Chapter 305 rule and that the applicant has sufficient title, right, or interest in the property where the activity takes place.**

Signature of Agent or Applicant (may be typed):

Date:

**Keep a copy as a record of permit.** Email this completed form with attachments to DEP at: [DEP.PBRNotification@maine.gov](mailto:DEP.PBRNotification@maine.gov).

DEP will send a copy to the Town Office as evidence of DEP's receipt of notification. No further authorization will be issued by DEP after receipt of notice. A PBR is valid for two years, except Section 4, "Replacement of Structures," are valid for three years. **Work carried out in violation of the Natural Resources Protection Act or any provision in Chapter 305 is subject to enforcement.**



# Department of Environmental Protection Stormwater Application

**DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF LAND & WATER QUALITY**

**FOR DEP USE**

L-\_\_\_\_\_

ATS#\_\_\_\_\_

Fees Paid\_\_\_\_\_

Date Received\_\_\_\_\_

**STORMWATER APPLICATION FORM** PLEASE TYPE OR PRINT IN INK.

This application is for (Check the one that applies):		<input checked="" type="checkbox"/> New application <input type="checkbox"/> Amendment				
1. Name of Applicant:	Town of Scarborough	5. Name of Agent:	Judy Gates, HNTB			
2. Applicant's Mailing Address:	259 U.S. Route 1 P.O. Box 360 Scarborough, ME 04070-0360	6. Agent's Mailing Address:	82 Running Hill Road Suite 201 South Portland, ME 04106			
3. Applicant's Phone #:	(207) 730-4031	7. Agent's Phone #:	(207) 228-0933			
4. Email address (REQUIRED - license will be sent via email):	<a href="mailto:thall@scarboroughmaine.org">thall@scarboroughmaine.org</a>	8. E-mail Address: (REQUIRED - license will be sent via email)	<a href="mailto:jugates@hntb.com">jugates@hntb.com</a>			
9. Location of Project: (Road, Street, Rt.#)	193 Pleasant Hill Road, Scarborough, ME 04074	10. Town:	Scarborough, South Portland			
		11. County:	Cumberland			
12. Type of Direct Watershed: (Check all that apply)	<input type="checkbox"/> Lake not most at risk <input type="checkbox"/> Lake most at risk <input type="checkbox"/> Lake most at risk, severely blooming <input checked="" type="checkbox"/> River, stream, or brook <input type="checkbox"/> Urban impaired stream <input type="checkbox"/> Freshwater wetland <input type="checkbox"/> Coastal wetland <input type="checkbox"/> Wellhead of public water supply	13. Amount of Disturbed Area:	Total Amt.= 5.13 acres			
		14. Amount of Developed Area:	<input checked="" type="checkbox"/> 1 or more acres, but less than 5 acres <input type="checkbox"/> 5 acres or more Total Amt.=			
		15. Amount of Impervious Area:	<input type="checkbox"/> Less than 20,000 sq.ft. <input type="checkbox"/> 20,000 sq.ft. to 1 acre <input checked="" type="checkbox"/> 1 to 3 acres <input type="checkbox"/> 3 or more acres Total Amt. =			
16. Applicable Standards: (Check all that apply)	<input type="checkbox"/> Stormwater PBR <input checked="" type="checkbox"/> Basic Standards <input checked="" type="checkbox"/> General Standards: BMP <input type="checkbox"/> General Standards: Phosphorus <input type="checkbox"/> Flooding Standard <input type="checkbox"/> Urban impaired stream standards <input type="checkbox"/> Other:	17. Type of Stormwater Control:	<input checked="" type="checkbox"/> Vegetative (e.g. buffers) <input type="checkbox"/> Structural (e.g. underdrained filters, ponds, infiltration structures) <input type="checkbox"/> Other: Compost blankets			
18. Exceptions &/or Waivers Requested:	<b>BMP Standards</b>	<b>Urban impaired stream standard</b>	<b>Flooding Standard</b>			
	<input type="checkbox"/> Pretreatment measures <input type="checkbox"/> Discharge to ocean/major river segment <input checked="" type="checkbox"/> Linear portion of a project <input type="checkbox"/> Utility corridor <input type="checkbox"/> Redevelopment	<input type="checkbox"/> Developed area not landscaped or impervious. <input type="checkbox"/> Redevelopment	<input type="checkbox"/> Discharge to ocean/major river segment <input type="checkbox"/> Insignificant increase in peak flow			
19. Proposed Start Date and Brief Project Description:	Estimated start of construction: upon receipt of permits. Construction of a 1.6-mile non-motorized pedestrian/bike trail between the northern extent of the existing trail in Scarborough to the southernmost extent in South Portland. See Attachment 1.					
20. Size of Lot or Parcel:	Sq.ft., or	<input checked="" type="checkbox"/> ~5.2 acres	UTM Easting:	Various. See Attachment 10	UTM Northing:	Various. See Attachment 10
21. Title, Right or Interest:	<input type="checkbox"/> own <input type="checkbox"/> lease      purchase option <input checked="" type="checkbox"/> written agreements					
22. Deed Reference Numbers:	Book#: _____ Page: _____	24. Map and Lot Numbers:	Map #: Various. See Attachment 10		Lot#: Various. See Attachment 10	

	Various. See Attachment 10.				
<b>23. DEP Staff Previously Contacted:</b>	Dawn Hallowell, Bob Green, Christine Woodruff, Alison Sirois		<b>25. Project started prior to application?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>Completed?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No
<b>SIGNATURES/CERTIFICATIONS ON PAGE 2</b>					
<b>26. Resubmission of Application?</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>If yes, previous application #</b>	L-28061	<b>If yes, previous project manager:</b>	Christine Woodruff
<b>27. Written Notice of Violation?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>If yes, name of DEP enforcement staff involved:</b>			
<b>28. Detailed Directions to the Project Site:</b>	From Exit 2 South on I-295, head west, in 0.5 miles continue onto ME-701 for 1.6 miles, use the left land to merge onto US-1 S for 0.2, turn left onto Hillcrest Ave, in 0.4 miles turn left to stay on Hillcrest Ave, in 187ft turn left onto Desfosses Ave, in 0.2 miles continue straight to stay on Desfosses Ave to reach the destination.				
<b>29. Stormwater Permit by Rule Submissions:</b>			<b>30. Stormwater Application Submissions</b>		
<input type="checkbox"/> This form (including signature page) <input type="checkbox"/> Fee <input type="checkbox"/> Topographic Map <input type="checkbox"/> Plan or Drawing <input type="checkbox"/> Photos of Area			<input checked="" type="checkbox"/> This form (including signature page) <input checked="" type="checkbox"/> Fee <input checked="" type="checkbox"/> Proof of title, right, or interest <input type="checkbox"/> Certificate of good standing (if applicable) <input checked="" type="checkbox"/> Photos of Area <input checked="" type="checkbox"/> Copy of Public Notice		
<b>31. FEES, Amount Enclosed:</b>			\$1,142.00		
<b>Does the agent have an interest in the project? If yes, what is the interest?</b> Yes <input checked="" type="checkbox"/> No					

**IMPORTANT: IF THE SIGNATURE BELOW IS NOT THE APPLICANTS'S SIGNATURE, ATTACH LETTER OF AGENT AUTHORIZATION SIGNED BY THE APPLICATION.**

By signing below, the applicant (or authorized agent) certifies that he or she has read and understood the following:

#### CERTIFICATIONS/SIGNATURES

"I certify under penalty of law that I have personally examined the information submitting in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment. I authorize the Department to enter property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein.

Further, I hereby authorize the DEP to send me an electronically signed decision on the license I am applying for with this application by emailing the decision to the electronic address located on the front page of this application (see #4 for the applicant and #9 for the agent)."

Signed: 

Title: Department Manager, Planning

Date: July 8, 2024

**Notice of Intent to Comply with Maine Construction General Permit**

With this Stormwater Law application form and my signature below, I am filing notice of my intent to carry out work which meets the requirements of the Maine Construction General Permit (MCGP). I have read and will comply with all of the MCGP standards.

Signed: 

Date: July 8, 2024

*NOTE: If a Notice of Intent is required, you must file a Notice of Termination (attached as Form G) within 20 days of completing permanent stabilization of the project site.*

## Additional Signatures/Certifications

The person responsible for preparing this application and/or attaching pertinent site and design information hereto, by signing below, certifies that the application for stormwater approval is complete and accurate to the best of his/her knowledge.

Signature: \_\_\_\_\_ *Judy C. Gates*

Name (print): \_\_\_\_\_ Judy C. Gates \_\_\_\_\_

Date: \_\_\_\_\_ June 12, 2024 \_\_\_\_\_

Re/Cert/Lic No: \_\_\_\_\_

Engineer \_\_\_\_\_

Geologist \_\_\_\_\_

Soil Scientist \_\_\_\_\_

Land Surveyor \_\_\_\_\_

Site Evaluator \_\_\_\_\_

Active Member of the Maine Bar \_\_\_\_\_

Professional Landscape Architect \_\_\_\_\_

## Attachment 1 – Activity Description

The Town of Scarborough (Town), in cooperation with the City of South Portland, Maine, Maine Department of Transportation (MaineDOT) and the Eastern Trail Management District (ETMD), proposes to complete a 1.6-mile section of the Eastern Trail Connector Project (Project), a non-motorized pedestrian/bike path. The proposed segment will connect the northern extent of the existing Eastern Trail in Scarborough near the Nonesuch River to the southernmost extent of the existing trail in South Portland near the Wainwright Recreation Complex (Figure 1). This project was previously approved by the U.S. Army Corps of Engineers (USACE) as permit number NAE-2015-02314 dated 3/29/2019 and considered by the Maine Department of Environmental Protection (MDEP) as permit number L-28061 in 2018. However, delays caused by CSX acquiring the Pan Am railroad through Scarborough resulted in the applicant withdrawing its DEP applications due to incomplete title, right, and interest (TRI) documentation.

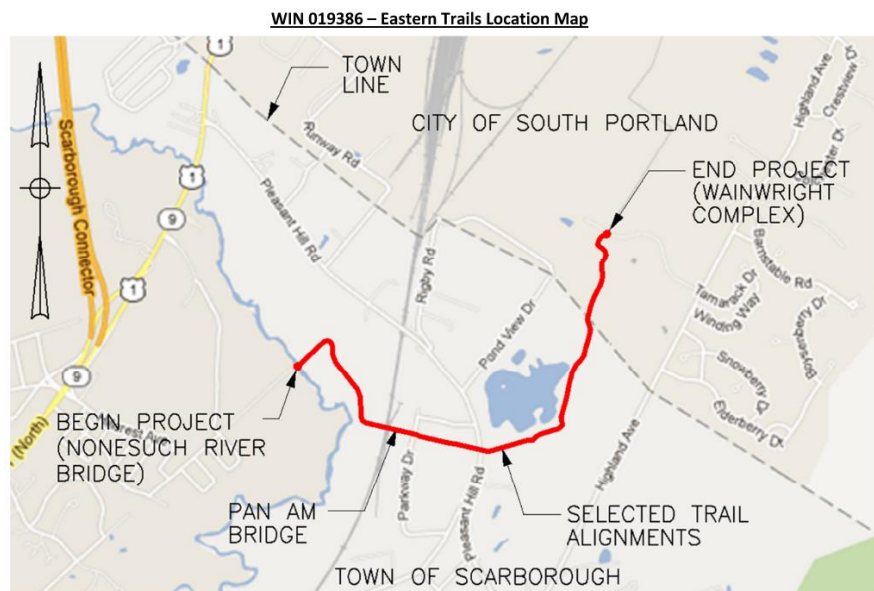


Figure 1: Extent of Proposed Eastern Trail Section, Town of Scarborough

### A. Purpose and Need

The purpose of the Project is to create a non-motorized, four-season, multi-use trail that will connect the existing Eastern Trail segments at the Nonesuch River in Scarborough and the Wainwright Recreation Complex in South Portland. Following the goals and objectives under which existing trail segments have been constructed in Maine, the trail is designed to maximize off-road connections and alignments, establish a quiet and safe route for users of all ages and abilities, provide access to areas of natural significance and scenic beauty, enhance connectivity among neighborhoods, and offer a quality experience to its users.

The Project is needed because the gap between the end of the existing off-road Eastern Trail at the Nonesuch River and the existing off-road Eastern Trail in South Portland represents a critical missing link in the Eastern Trail network. Users of the Eastern Trail must backtrack on the existing trail once arriving at endpoints, or worse, redirect their travels off the trail, which can pose trespass concerns and potential safety threats to riders.

## B. Activity Description

The Project involves constructing a 10 to 12-foot wide paved or stone dust trail, including several trail segments, roadway crossings, and new bridges spanning the Nonesuch River and CSX Railway corridor. Except for the bridge crossings, the trail will generally follow existing contours. In wetland areas, the surface elevation required to ensure a dry trail surface will be limited to approximately two feet above existing ground to reduce wetland impacts.

This application constitutes a joint application to MDEP and USACE for proposed activities that qualify for review under USACE Pre-Construction Notification and MDEP NRPA Tier 3 wetland permit application, Permit by Rule (Section 10), and Stormwater Management Law (Stormwater) permits. In filing this application, the Town confirms that the Project will comply with the USACE's Maine General Permit Terms and Conditions, and conditions set forth under MDEP's NRPA and Stormwater Laws.

## C. Summary of Potentially Affected Natural Resources

A formal wetland and stream delineation, assessment of the site for potential significant wildlife habitat such as vernal pools, and an environmental data review were performed by Normandeau Associates in 2012, NewEarth Ecological Associates in 2013, then re-evaluated and supplemented as needed in 2016 and 2018 to address design modifications. Discussions with natural resource and permitting agencies have been an integral component of project design and avoidance/minimization efforts. Telephone, email, and in person conversations have included on-site visits to evaluate resources and alternative routes in May 2012, September 2012 (Maine Department of Inland Fisheries and Wildlife (MDIFW)), September 2013 (MDIFW), October 2013 (MDEP), and November 2013 (USACE) (Attachment 11: MHPC and Natural Resource Agency Correspondence).

Through desktop and onsite review of environmental conditions as well as careful design, planning, and collaboration with environmental agencies, the Project was designed to minimize the impact to environmental resources and is expected to result in permanent fill of 21,200 sf (0.46 acre) of palustrine forested and scrub-shrub wetland and temporary impacts to 7,050 sf (0.16 acre) (Attachment 5: Design Permit Plans).

Construction will generally involve an initial approximate 50 foot construction workspace with 10 to 12 feet of this width converted to permanent paved or stone-dust trail; 4 feet (2 feet to each side of trail) converted to permanently maintained mowed herbaceous cover; 10 feet (5 feet to each side of trail) vegetation periodically maintained for pedestrian safety; and, the remaining area along each side of the trail allowed to return to natural vegetative state.

## D. Stormwater Management

The total Project footprint is approximately 226,500 sf (5.20 acres). Of this area to be cleared and/or grubbed to construct the trail, approximately 222,200 sf (5.10 acres) will be developed with a total of 127,630 sf (2.93 acres) developed and not returned to its original vegetated condition. Of the total developed area, 101,700 sf (2.33 acres) will be new impervious area while 25,930 sf (0.60 acres) is existing impervious area that will remain impervious. A two-foot-wide grassed shoulder on each side of the trail will be regularly mowed and maintained for public safety, accounting for 31,670 sf (0.73 acres) of the project area.

The Project site is not located within a MDEP-designated Urban Impaired Stream Watershed.

## E. Natural Resource Impacts

### 1. Waterbodies

Four waterbodies that meet the definition of a river, stream, or brook per Maine's NRPA (38 M.R.S.A. §480-A through JJ) were identified within 25 feet of the proposed trail alignment (Attachment 4: Site Photographs; Attachment 9: Site Condition/Wetland Delineation Report). Three of the waterbodies are highly- modified (i.e., straightened), and of overall low-quality due to slow flow and invasive aquatic species. Streams will be crossed using embedded culverts per the USACE's Maine General Permit.

Approximately 180 linear feet of impact to these resources by new or replacement stream crossings is anticipated (Attachment 5). All in-stream work will take place within MDIFW's recommended timing window of July 15 to October 1.

The remaining waterbody, the Nonesuch River, is a tidal waterbody and therefore subject to USACE's Section 10, Rivers and Harbors Act, jurisdiction. No impacts will occur below the Ordinary High Water (OHW) elevation of the river, but a bridge spanning the river will be required. The crossing will be constructed on pre-existing abutments with almost 9 feet of clearance above the approximate 100-year flood elevation. Navigational uses of the Nonesuch River are subject to upstream and downstream constraints that limit use to manually powered watercraft (i.e., kayaks, canoe, etc.) and small motorboats. The proposed bridge will not involve any in stream work and will result in a structure at or above the railroad bridge previously located at the site. Accordingly, an initial request for exemption from US Coast Guard (USCG) Bridge Crossing permit requirements was filed with the USCG in December 2013 (Attachment 11). A waiver response was not received from the USCG in 2013 and Project progression was halted until 2018. A USCG permit exemption was granted in 2017, documentation of such is attached.

### 2. Wetlands

The Project will impact 28,250 sf (0.65 acres) of freshwater wetland, consisting of 20,100 sf (0.46 acres) of palustrine forest (PFO) primarily located within 75 feet of the Nonesuch River, as well as 8,150 sf (0.19 acres) of managed palustrine scrub-shrub wetlands (PSS) primarily located associated with the maintained CMP utility line corridor and Wainwright Recreation Complex (Attachments 4, 6 and 9).

Approximately 21,200 sf (0.49 acres) of impact will be permanent, and 7,050 sf (0.16 acres) will be temporary. Areas temporarily impacted will be stabilized and allowed to revert to a vegetated wetland community. For safety purposes, maintenance (i.e., above-ground pruning) will be performed as needed in areas where vegetation growth encroaches onto the trail.

Approximately 2,080 sf (0.05 acres) of impacts are to Wetlands of Special Significance (WOSS) (Chapter 310, Section 4) due to their location within 75 feet of the tidal Nonesuch River, association with emergent wetlands >20,000 sf, or occurrence within a mapped Federal Emergency Management Administration (FEMA) floodplain zone. Moderate value Inland Waterfowl and Wading (IWWH) bird habitat exists in and along the Nonesuch River and portions of the Project occur within 75 feet of the IWWH designated wetlands; however, no IWWH areas are directly impacted by the Project, but. The remaining WOSS wetlands consist of 2,120 square feet (0.05 acres) of



narrow shoreline areas within 25 feet of the three Project area streams.

### 3. Vegetation Clearing

Of the approximately 222,200 sf (5.20 acres) of disturbance (i.e., clearing, grubbing, etc.) proposed, 142,500 sf (3.27 acres) will result from clearing of sapling and mature tree cover. Disturbed areas consist of 122,400 sf (2.81 acres) of upland communities, and 20,100 sf (0.46 acres) of wetlands. Included the impact estimate are areas where tree branches that encroach onto the trail area may be pruned, but the entire tree would remain intact.

Through avoidance and minimization efforts, the trail alignment has been located such that much of the clearing will take place in previously disturbed areas associated with existing commercial and industrial development. Areas include an existing unimproved road along Prout's Pond; disturbed areas of an existing waste management facility near Prout's Pond; and, along the edge of the Central Maine Power utility line corridor that are sparsely vegetated. Many of these areas have served as unauthorized access for illegal dumping or off-road-vehicle activity (Attachments 3 and 4).

Construction activities and areas required for contractor equipment access, staging and laydown areas will temporarily impact specific locations. Following construction, temporary impact areas will be seeded and allowed to revert to natural vegetated communities, while areas within approximately 2 feet of the edge of trail will be periodically mowed or maintained for public safety. Measures will be taken to minimize secondary impacts such as erosion and siltation per Maine's Erosion and Sediment Control Best Management Practices (Attachment 8).

### 4. Cultural Resources

The Maine State Historic Preservation Commission (MHPC) identified the abutments that remain at the former railroad bridge crossing over the Nonesuch River as a historic property but determined there would be no adverse impacts from the Project (Attachment 11). Correspondence with Native American tribes, also included in Attachment 11, did not identify any tribal concerns.

### 5. Significant Wildlife Habitat

Based on Project review by state and federal agencies, no rare, threatened, or endangered species are known to occur on the site (Attachment 11). Agency correspondence did identify several species that could utilize habitats found on the Project site, including the federally- and state-listed Northern Long-eared Bat, state-listed New England Cottontail, Little Brown Bat, and Eastern Small-footed Bat, as well as several bat species of special concern in Maine. Approximately 3.3 acres of tree removal is proposed; all tree clearing will occur within the recommended timing window of August to May to avoid adverse effects to these species. Vegetated areas also provide habitat for migratory birds, some of which are identified as U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern. The site was evaluated for presence of New England Cottontail and potential vernal pool habitat by a qualified biologist during the appropriate survey seasons; none were found.

### 6. Other Environmental Resources

Background review identified the Wainwright Recreation Complex, located to the northern extent of the Project, as a Section 4(f) property. The proposed Project supports the goals and objectives of the Section 4(f) property. No concerns regarding hazardous materials, aquifers or public water supplies, or significant natural areas were identified. Land use and cover type changes would be

consistent with Scarborough and South Portland land use plans and zoning.

#### F. Project Summary and Existing Permits

The Eastern Trail is a four-season, 65+-mile, non-motorized, multi-use transportation and recreational corridor that is being created between Kittery and South Portland, Maine. It starts at the Maine state line on the Memorial Bridge over the Piscataqua River in Kittery and ends at Bug Light Park in South Portland. The Eastern Trail is considered a trail of statewide significance and is the southern Maine “gateway” segment of the East Coast Greenway project, a developing off-road bicycle trail system between Calais, Maine and Key West, Florida.

Two non-profit groups are fundamental to the development of the Eastern Trail: the Eastern Trail Alliance (ETA) and the Eastern Trail Management District (ETMD). Formed in 1998, the ETA is a coalition of trail groups, municipalities, government and other agencies, non-profit groups, and individuals that advocate for the development of the trail. The Eastern Trail is managed and maintained by the ETMD. Created in 2001 as a non-profit corporation, the ETMD is comprised of representatives from each of the twelve towns that the trail traverses.

The general area surrounding the Project site has undergone significant alterations including expanding infrastructure, commercial, and residential development which have undoubtedly required and received permits from MDEP and/or the USACE. Four MDEP Orders associated with properties likely to be applicable to this Project have been identified as follows; others may exist.

- MDEP Order #42-0840-05200, July 11, 1973, approved a truck transport facility; subsequent Order #42-0840-05200/#L-0840-26-B-X, August 2, 1982, approved expanded parking areas; and Order #42-0840-05200/#L-0840-26-A-T, December 17, 1996, transferred ownership.
- MDEP Order #L-20429-28-A-N, March 8, 2001, approved a community recreation facility; subsequent Order L-20429-28-B-M, date unknown, approved field changes, grading and drainage alterations; and Order #L-20429-28-C-M, January 13, 2003, approved addition and relocation of driveways.
- MDEP Order #L-21469-TH-B-N, January 7, 2004, approved creation of a wetland mitigation site as compensation for alteration of approximately 2.24 acres of freshwater wetland; and, subsequently on June 28, 2006, approved reconfiguration of mitigation site boundary (no new order issued).
- MDEP Permit by Rule (PBR) #62413 to construct buildings and install pavement along a portion of Pleasant Hill Road that directly abuts the north edge of the proposed Project route.
- Maine DEP issued a draft order for the current project under #L-28061-NJ/TE/2F-AN/BN/CN on April 10, 2019; however, DEP subsequently returned the Town’s application due to unresolved TRI related to the transfer of Pan Am Railroad assets to CSX.

#### G. Overview of Project Setting

The Project site is located within the Presumpscot-Royal River watershed (USGS Identification Number 01060001) and situated generally from The Nonesuch River to the Wainwright Recreation Complex (Attachment 3. Project Location). Topography along the proposed trail is close to mean sea level and remains within the 5 to 15-foot elevation above mean sea level elevation gradients throughout the site.

From its existing endpoint on the southwest side of the Nonesuch River in Scarborough, the first segment of the proposed trail extends to the northeast on an abandoned railroad bed, then southeast through intact mixed mature forest and forested wetlands to Chamberlain Road (Attachment 3). The next segment extends generally eastward along the north edge of an existing utility line corridor to a location just east of Pleasant Hill Road. Through this area, the corridor is periodically maintained in a sapling tree/shrub height community due to utility line safety requirements. Depending on the time since last managed, the utility line contains habitat that may be suitable for New England Cottontail (a listed endangered species in Maine), although MDIFW noted no species presence (Attachment 11). This portion of the trail lies within the Pleasant Hill Industrial District, and most of the area along the utility corridor is surrounded by commercial and industrial development. The trail then shifts toward the north where it ties into an existing sand/gravel trail that abuts the perimeter of Prout's Pond and follows this existing path to a dirt/gravel road into an active wood waste processing facility. From here, the trail would continue to the north for several feet along the east side of a relatively stagnant stream then cross to the west side of the stream and follow within sapling tree/shrub habitat of another utility line corridor. Much of the area surrounding the utility corridor and trail from Prout's Pond to the sports complex is surrounded by intact mature mixed forest. The proposed trail then would depart the corridor and head generally northwest where it eventually crosses through the Wainwright Recreation Complex and would tie into the endpoint of the existing Eastern Trail segment at Gary L Maietta Way in South Portland. The portion within the sports complex is comprised primarily of maintained athletic fields and parking lots.

#### **H. Financial Capacity**

This approximately \$4.7 M Project is a joint endeavor by ETA, ETMD, Town of Scarborough, City of South Portland, and the MaineDOT. The Project is currently funded for construction beginning in 2024 through federal, state, local, and private monies. Attached is a signed letter indicating commitment to funding for the Project.



September 27, 2023

Maine Department of Environmental Protection  
17 State House Station  
Augusta, Maine 04333

Re: Eastern Trail Project Scarborough/South Portland NRPA Application Financial Capacity

To Whom It May Concern:

The estimated cost of the Eastern Trail Project from the Nonesuch River in Scarborough to the Wainwrights Sports Complex in South Portland is \$4,950,000. This project will be funded with Federal, State, Local and Private Funds. The Federal and State funds are bonded monies, the local funds were a budget appropriation, and the private funds were collected through several fund raisers.

Please feel free to contact me with any questions you may have.

Sincerely,

Thomas J. Hall  
Town Manager

Chris Bisignano  
US Department of Homeland Security  
United States Coast Guard, First Coast Guard District  
One South Street  
Battery Park Building  
New York, NY 10004



December 19, 2013

Eastern Trail, Nonesuch River Crossing

Dear Mr. Bisignano,

I am following up on a previous inquiry letter sent from Jennifer West at Normandeau Associates regarding the applicability of a bridge permit for the Eastern Trail Pedestrian/Bike Trail over the Nonesuch River in Scarborough Maine. The February 8, 2012 response letter from Gary Kassof (attached) requested additional information about the project location and nature of the waterway and use by vessels. HNTB is under contract with the City of Scarborough to provide preliminary trail design services and an assessment of the permits for the entire project, however HNTB is not presently scoped to prepare permits or to provide the level of detail requested in the Bridge Project Questionnaire. We have gathered some of the information needed for a determination, included herein, and seek further review by the Coast Guard to confirm the applicability of a bridge permit for the project.

#### Project Location

The proposed crossing is located approximately 9.4 miles upriver from Saco Bay and will utilize an existing railroad bridge abutment from an abandoned rail crossing over the Nonesuch River (see picture). The river is a slow moving, extensively meandering watercourse as shown on the attached locus map. It appears to be a tidally influenced fresh water system at the proposed crossing location.

The proposed bridge would use the existing abutments and not require any work in the water or adjacent wetlands. The attached bridge plan shows a vertical clearance of approximately 17 feet above mean water level spanning a distance of 34 feet 6 inches across the river. The existing abutments are located approximately 4.2 miles upstream from the nearest downstream river crossing, Blackpoint Road/Route 207 Bridge, which is approximately 1.4 miles upstream of the former Boston & Maine (now Pan Am Railways) railroad crossing of the river. Both of the existing downstream crossings are non-moveable structures, and no maintained or navigationally aided channels extend to those bridges. The vertical and horizontal clearances of the two downstream bridges are not known, but as you can see from the attached photographs, these are both low-clearance bridges without any designated navigation markers.

Approximately 0.7 miles and 1.3 miles upstream of the proposed replacement crossing are Main Street (Route 1/9) and the Route 1/9 to I-295 Scarborough Connector road. From aerial images these crossings both appear to be low clearance, single opening box culverts running under the roadway.

We have researched marinas and boat launches along the river from the mouth to tidal extent upstream of the project. Three boat landings are located downstream of the proposed replacement bridge. Clay Pits road ramp is seven miles downstream from the proposed crossing, a high tide only accessible ramp with a long float and located 2.4 miles upstream from Saco Bay. The Pine Point ramp and Ferry Beach ramp are also both high tide only accessible ramps located at the confluence of the Scarborough, Nonesuch, and Libby rivers at Saco Bay. The attached aerial figure shows where these ramps and crossings, as well as the two additional up stream crossings, are in relation to the proposed Eastern Trail replacement bridge crossing. We have not identified any boat launches or marinas upstream of the proposed replacement crossing. Also attached is a portion of the NOAA navigation chart showing the extent of NOAA published information further downstream near the river mouth at Saco Bay.

It appears from the information provided, navigation uses at the proposed crossing from either upstream or downstream is constrained and likely limited to rowboats, canoes, kayaks, and possibly very small motorboats that could navigate under the low clearance bridges downstream.

We are seeking verification that this proposed replacement bridge crossing would require a USCG bridge permit. Further, if a permit is applicable, what is the nature of the permit (new, amended, etc.), and the next steps to advance and an approximate processing time once a completed application is submitted to the First Coast Guard District. Thank you for your assistance with this request.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kevin Slattery', with a long, sweeping horizontal line extending to the right.

Kevin Slattery, PWS  
Senior Environmental Specialist  
HNTB Corporation

Attachments (U.S. Coast Guard 2/8/2012 Letter, State locus map, Aerial locus map of river crossings and boat ramps, Photographs the proposed crossing and the two downstream bridges, NOAA navigation chart excerpt, Preliminary bridge plans)

CC: Tim Cote, HNTB  
Dan Bacon, Town of Scarborough

U.S. Department of  
Homeland Security

United States  
Coast Guard



Commander  
First Coast Guard District

One South Street  
Battery Park Building  
New York, NY 10004-1466  
Staff Symbol: dpb  
Phone: (212) 668-7165  
Fax: (212) 668-7967

16211/NV-823  
Nonesuch River/ME//

February 8, 2012

Ms. Jennifer West, MECSS, PWS, NHCW  
Normandeau Associates Inc.  
8 Fundy Road  
Falmouth, ME 04101

**Re: Eastern Trail Pedestrian/Bike Trail over Nonesuch River**

Dear Ms. West:

This is in response to your e-mail asking whether the Coast Guard will require a permit for the referenced bridge project. We have examined the Nonesuch River with regard to its status as a navigable water of the United States for purposes of Coast Guard bridge jurisdiction.

Our examination indicates that there is sufficient factual support for concluding that the waterway at the project location is a navigable water of United States for purposes of general Coast Guard jurisdiction. Since this is the case, a Coast Guard bridge permit will be required for the referenced bridge project.

Specific processing can only be determined once we receive more information i.e. plans of the proposed construction, type and volume of navigational using the waterway, bridge owner and funding source. Once we have reviewed that material we will be able to determine whether a full bridge permit process will be required.

If you have any questions, please feel free to contact me at the above telephone number.

Sincerely,

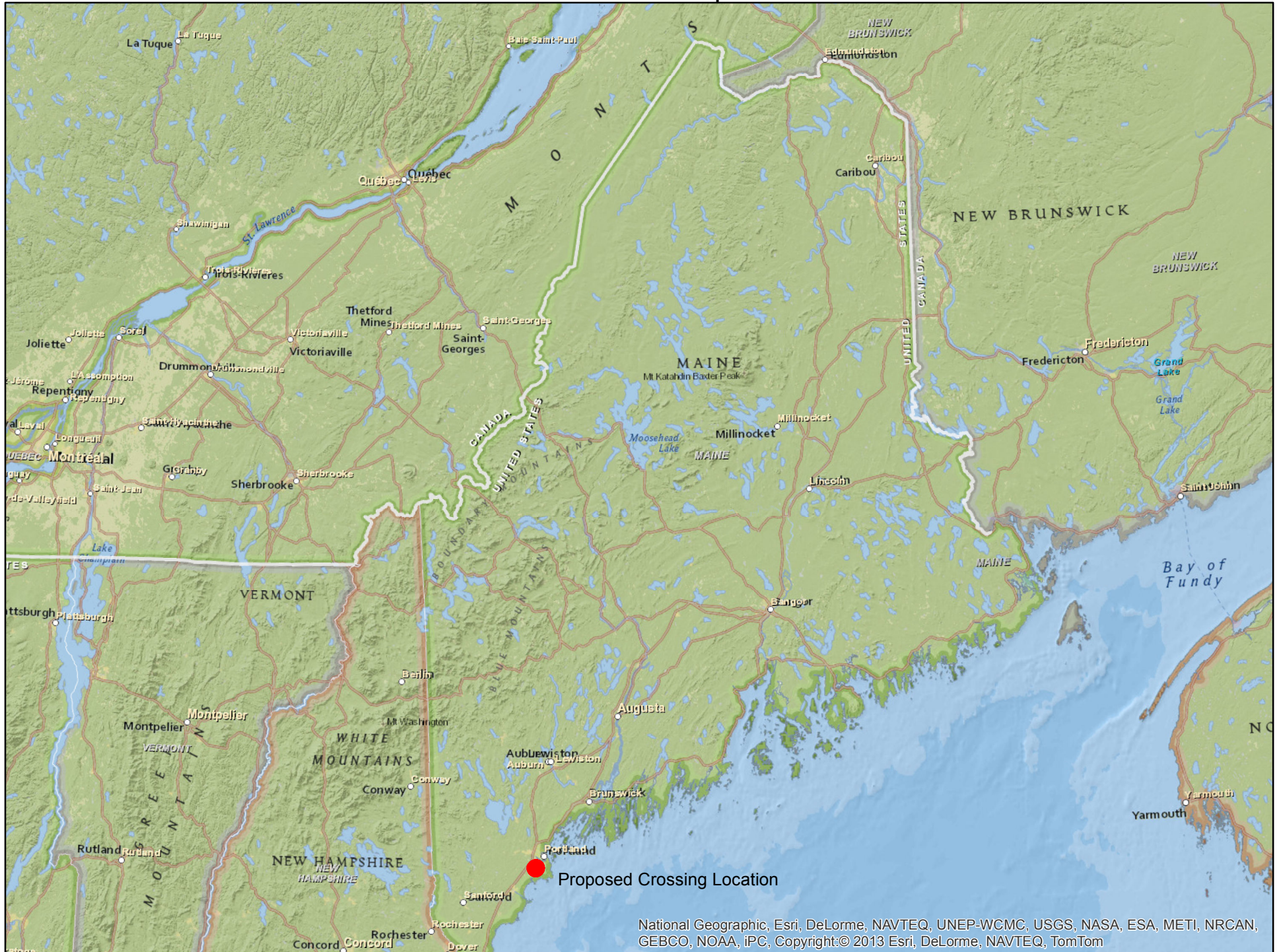
A handwritten signature in black ink, appearing to read "Gary Kassof".

Gary Kassof  
Bridge Program Manager  
First Coast Guard District  
By direction of the District Commander

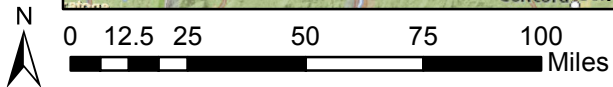
Copy: Corps of Engineers, New England District



# State Locus Map

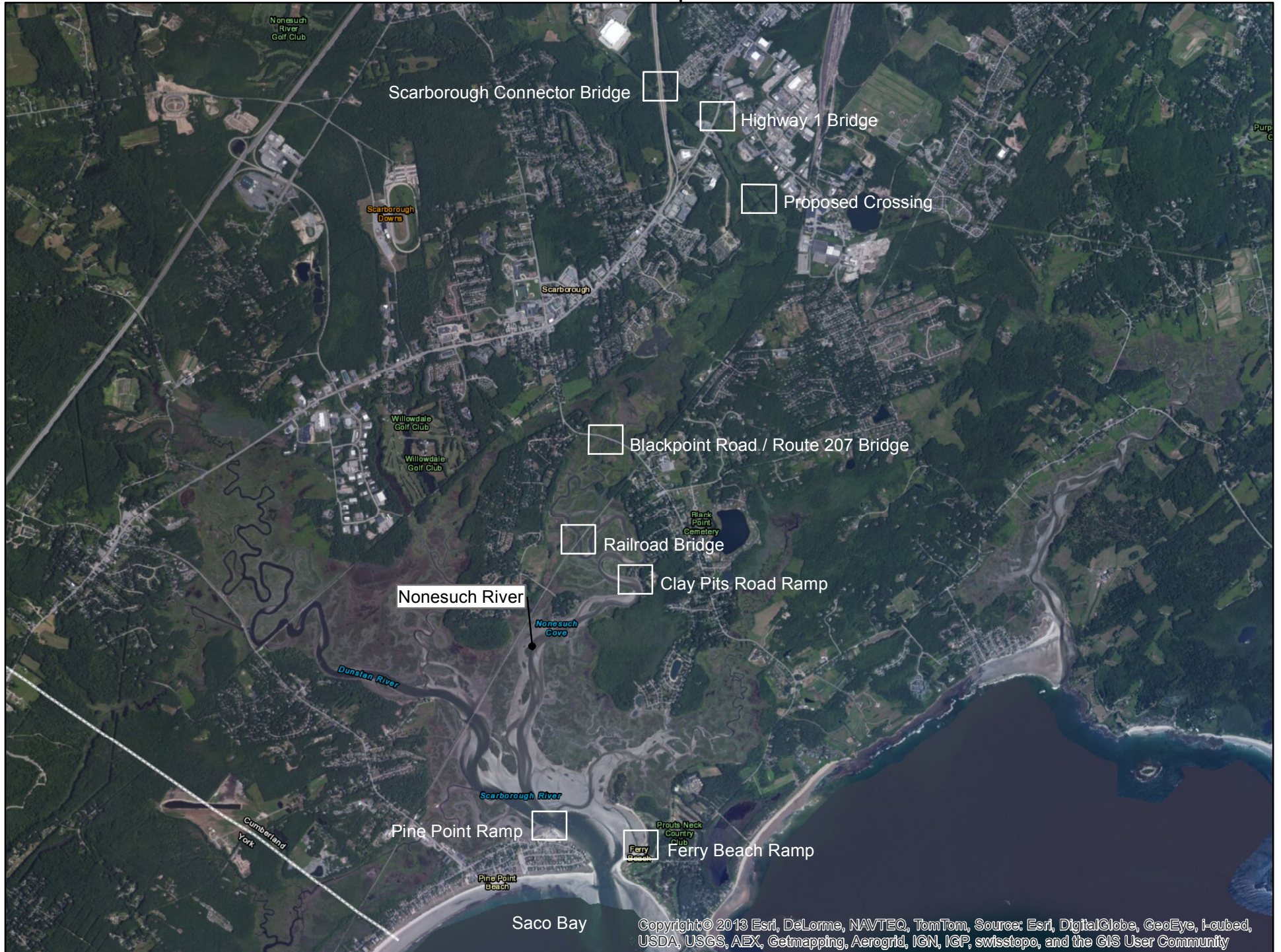


National Geographic, Esri, DeLorme, NAVTEQ, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, IPC, Copyright:© 2013 Esri, DeLorme, NAVTEQ, TomTom

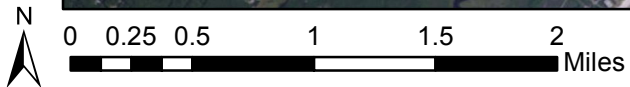




# Locus Map



Copyright © 2013 Esri, DeLorme, NAVTEQ, TomTom, Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community





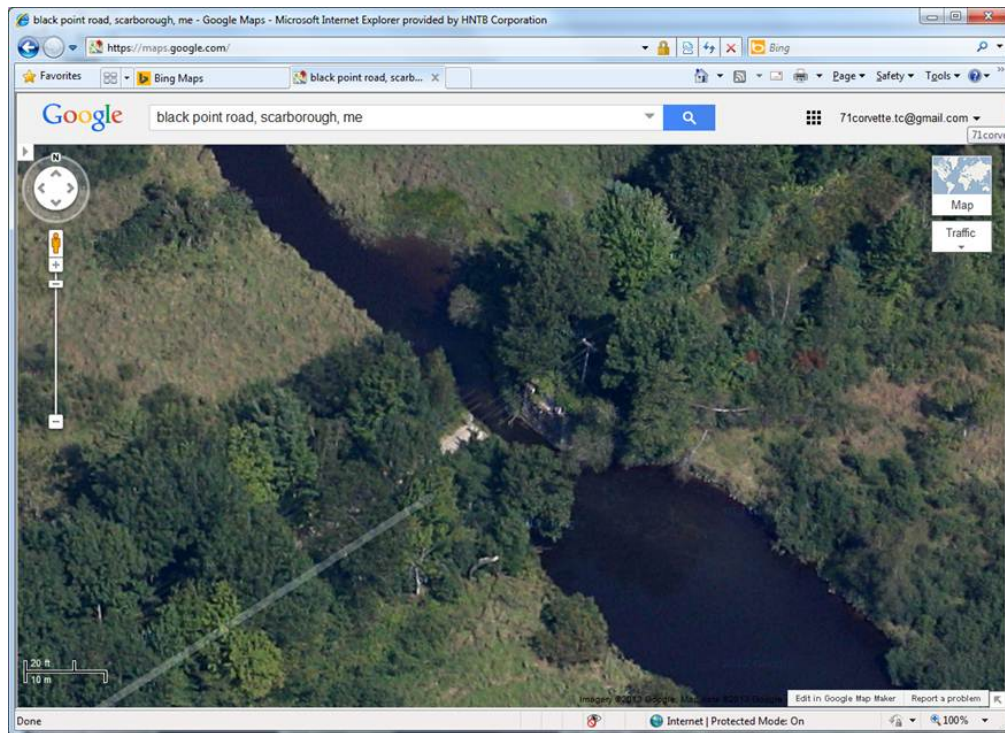


Photo 1 – Proposed Crossing

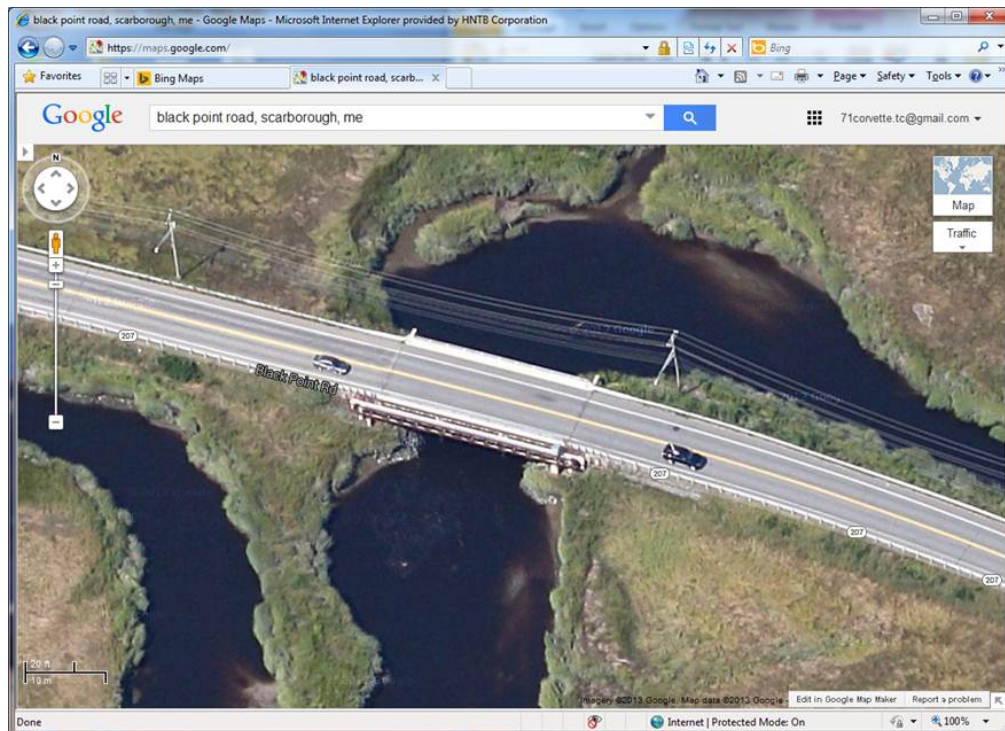


Photo 2 - Blackpoint Road/Route 207 Bridge



Photo 3 - Blackpoint Road/Route 207 Bridge

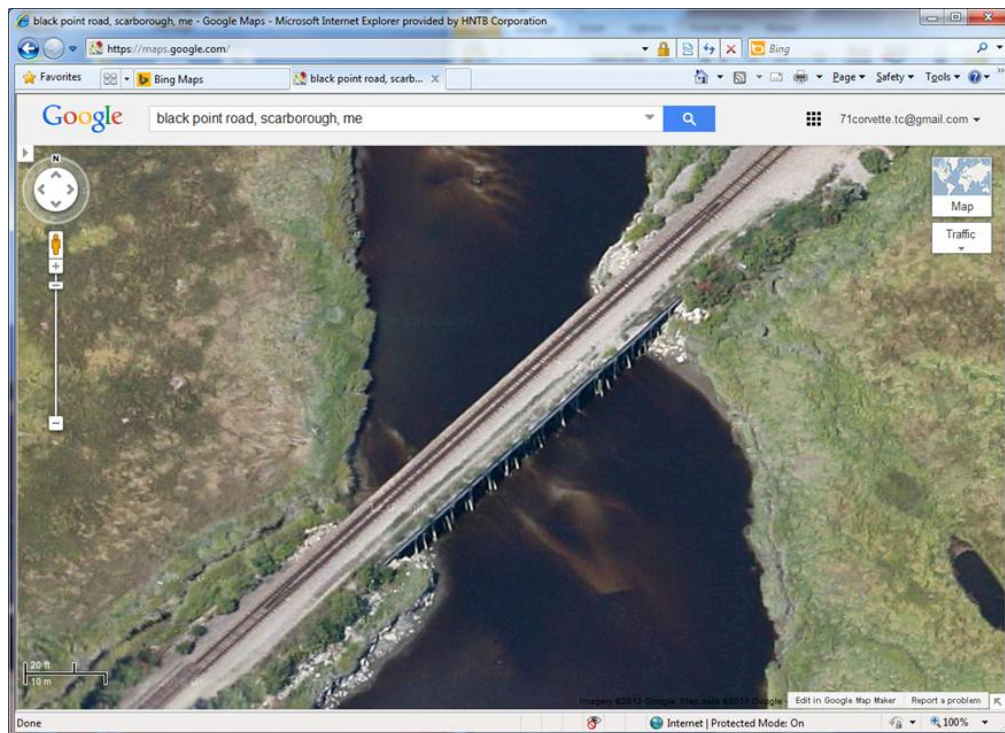


Photo 4 - Boston & Maine (now Pan Am Railways) railroad Bridge





Photo 5 - Boston & Maine (now Pan Am Railways) railroad Bridge



Photo 6 - Boston & Maine (now Pan Am Railways) railroad Bridge

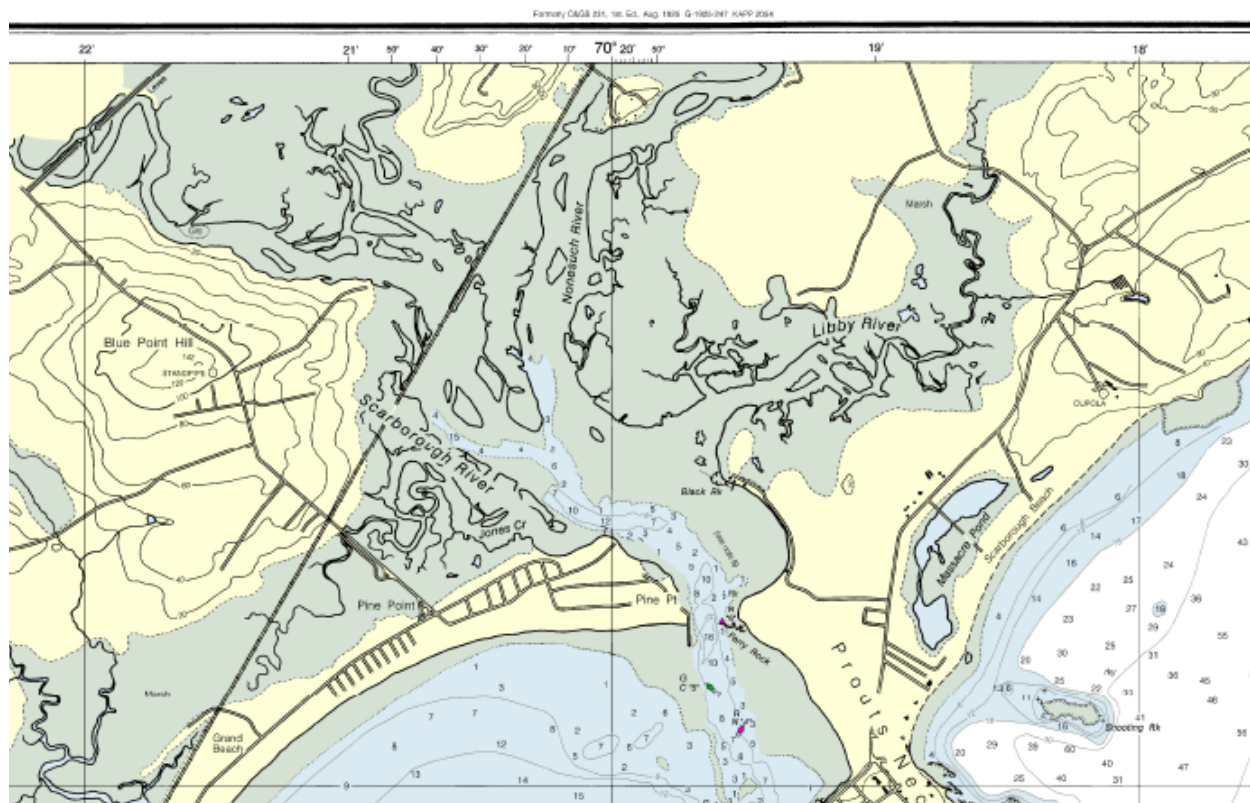


Photo 7 – The extent of information provided by NOAA navigation chart falls short of reaching the proposed site.

Date: 11/6/2013

Filename: D:\Nonessuch River Bridge.dgn

PRELIMINARY  
NOT FOR CONSTRUCTION  
NOVEMBER 6, 2013

EXISTING EASTERN TRAIL

CL BRG., ABUT. NO. 1 CL BRG., ABUT. NO. 2

34'-6"  
PREFABRICATED STEEL TRUSS  
WITH TIMBER DECKING

10'-0"  
WALKWAY  
± 11'-9"  
OUT-TO-OUT

FLOW  
NONESUCH  
RIVER

PLAN  
1/8" = 1'-0"

CL EASTERN TRAIL

CL BRG., ABUT. NO. 1 CL BRG., ABUT. NO. 2

34'-6"  
PREFABRICATED STEEL TRUSS  
WITH TIMBER DECKING

9'-0"  
CL

PROP. CONC.  
PEDESTAL

EXIST. ABUTMENT  
TO REMAIN  
(LIMITS UNKNOWN)

50 YEAR FLOOD ELEV. ± 4'-3"

ORDINARY  
WATER ELEV. ± 4'-0"

PROPOSED TRAIL GRADE

EXISTING GRADE

PROFILE  
1/8" = 1'-0"

SPECIFICATIONS

DESIGN: AASHTO LRFD Bridge Design Specifications, Sixth Edition 2012 and Interim Specifications through 2013.

AASHTO LRFD Guide Specification for Design of Pedestrian Bridges, Second Edition.

DESIGN LOADING

Live Load: 90 p.s.f. (pedestrian only) or 45,000 lb EMS vehicle

HYDROLOGIC DATA


Drainage Area	.....	sq mi
Design Discharge (Q50)	.....	cfs
Check Discharge (Q100)	.....	cfs
Headwater Elevation (Q50)	.....	ft
Headwater Elevation (Q100)	.....	ft
Discharge Velocity (Q50)	.....	fps
Discharge Velocity (Q100)	.....	fps

MATERIALS

Concrete (Unless noted otherwise).....Class "A"  
Reinforcing Steel:.....ASTM A615/A615M, Grade 60  
Structural Steel:.....ASTM A588

UTILITIES

Central Maine Power



340 COUNTY ROAD  
WESTBROOK, ME 04092  
(207) 774-5155

BY	DATE	DESIGNED		CHECKED		SIGNATURE
		DATE	DATE	DATE	DATE	
AF	11/13					
TH	11/13					
REVISIONS						
REVISIONS 1						
REVISIONS 2						
REVISIONS 3						
REVISIONS 4						
REVISIONS 5						
REVISIONS 6						

TOWN OF SCARBOROUGH  
EASTERN TRAIL CONNECTOR  
SCARBOROUGH TO SOUTH PORTLAND, MAINE

NONESUCH RIVER PLAN & PROFILE

SHEET NUMBER

OF



## ATTACHMENT 2 - ALTERNATIVES ANALYSIS

Planning efforts have included several evaluations of numerous possible designs and configurations that would meet The American Association of State Highway and Transportation Officials' (AASHTO's) *Guide for the Development of Bicycle Facilities* design criteria and safety requirements, and also minimize the Project footprint to avoid potential environmental impacts. A final Alternatives Analysis Report provided a detailed explanation and findings of the analysis was provided to MDEP and the USACE in November 2015, as indicated in the attached transmittal notice.

### A. Alternatives Assessment

To summarize, 17 segments were evaluated for consistency with the overall project purpose. Of these, ten segments did not meet the overall project purpose and were dismissed from further consideration. The remaining seven segments were then used to develop 19 alternative alignments, which were evaluated based on their feasibility and whether each met the overall project purpose. Of these, two alignments were advanced through a detailed analysis, which included efforts to avoid and minimize impacts of each considering design modification as per agency input received during meetings and site visits. A summary of findings is provided below; the full report is provided as Appendix A. The appendices to the Alternative Analysis Report can be provided upon request.

#### 1. No-Action Alternative

Although the no-action alternative would result in no direct environmental impacts, it would not provide a connection between the existing endpoints of the Eastern Trail between South Portland and Scarborough, Maine.

**Therefore, the no-action alternative does not meet the overall project purpose and was excluded as a practicable alternative.**

#### 2. Alternative 1 (Alternatives Analysis Alignment "M")

Alignment "M" would require a trail segment to be collocated along a public roadway (Highland Avenue) to reduce wetland and stream impacts. This option would result in lower environmental impacts when compared to Alternative 2. However, much of the route would occur along a busy roadway, which could pose a potential significant safety risk for some user modes, abilities, and demographics. Further, portions of the route along Highland Avenue would not be off-road and would not provide a natural setting typical of existing trail segments.

**This alternative partly meets the overall project purpose, but increases the risk to public safety to an unacceptable level and so was excluded as a practicable alternative.**

#### 3. Alternative 2 (Alternatives Analysis Option "L")

Alignment "L" provides trail users with a safe, ADA compliant, four season, off-road route suitable for all user modes, abilities, and demographics, within a natural setting. It also provides

a transportation corridor. This alignment would, however, result in slightly higher impacts to wetlands and streams as well as increased environmental mitigation costs.

**Alternative 2 meets the overall project purpose** to provide a connection between two existing trail endpoints, designed to maximize off-road connections and alignments, establish a quiet and safe route for users of all ages and abilities, provide access to areas of natural significance and scenic beauty, enhance connectivity among neighborhoods, and offer a quality experience to its users.

**When compared to Alternative 1, this configuration has slightly higher environmental impacts, but significantly lowers the risk to public safety, and therefore was selected as the preferred alternative.**

## B. Avoidance and Minimization

The section of the Eastern Trail extending between the Nonesuch River in Scarborough and the Wainwright Recreational Complex in South Portland traverses a series of unique geographic and constrained site conditions. Throughout the length of the trail, a variety of avoidance and minimization measures were incorporated to balance environmental impacts and project needs. Avoidance and minimization measures applied on the Project include:

- Station 100+00 to 100+36: The proposed Nonesuch River bridge will be constructed on existing abutments at this location, thereby avoiding the need to conduct work in the Nonesuch River.
- Station 115+00 to 119+00: The trail alignment was relocated further from the Nonesuch River to provide a minimum of 75-feet between the trail and the emergent wetland boundary. Additionally, the width of the trail at this location is reduced to 10 feet as opposed to the typical 12-foot width recommended per AASHTO guidelines.
- Station 162+50 to 163+50: The trail width was reduced from 12 to 10 feet to minimize impacts to a stream crossing and allow a shorter culvert to be installed.
- Station 164+00 to 171+50: The trail was aligned to allow a minimum 25-foot buffer to an adjacent stream.
- Station 172+00 to 177+00: The trail width was reduced from 12 to 10 feet to minimize impacts to wetlands and streams by allowing shorter culverts to be installed at stream crossing locations.
- Per Maine DEP recommendation, the preferred route was realigned to a position immediately along Prouts Pond and the CMP utility corridor north of the pond, where the area has been significantly impacted by current industrial land uses and off-road vehicle traffic.

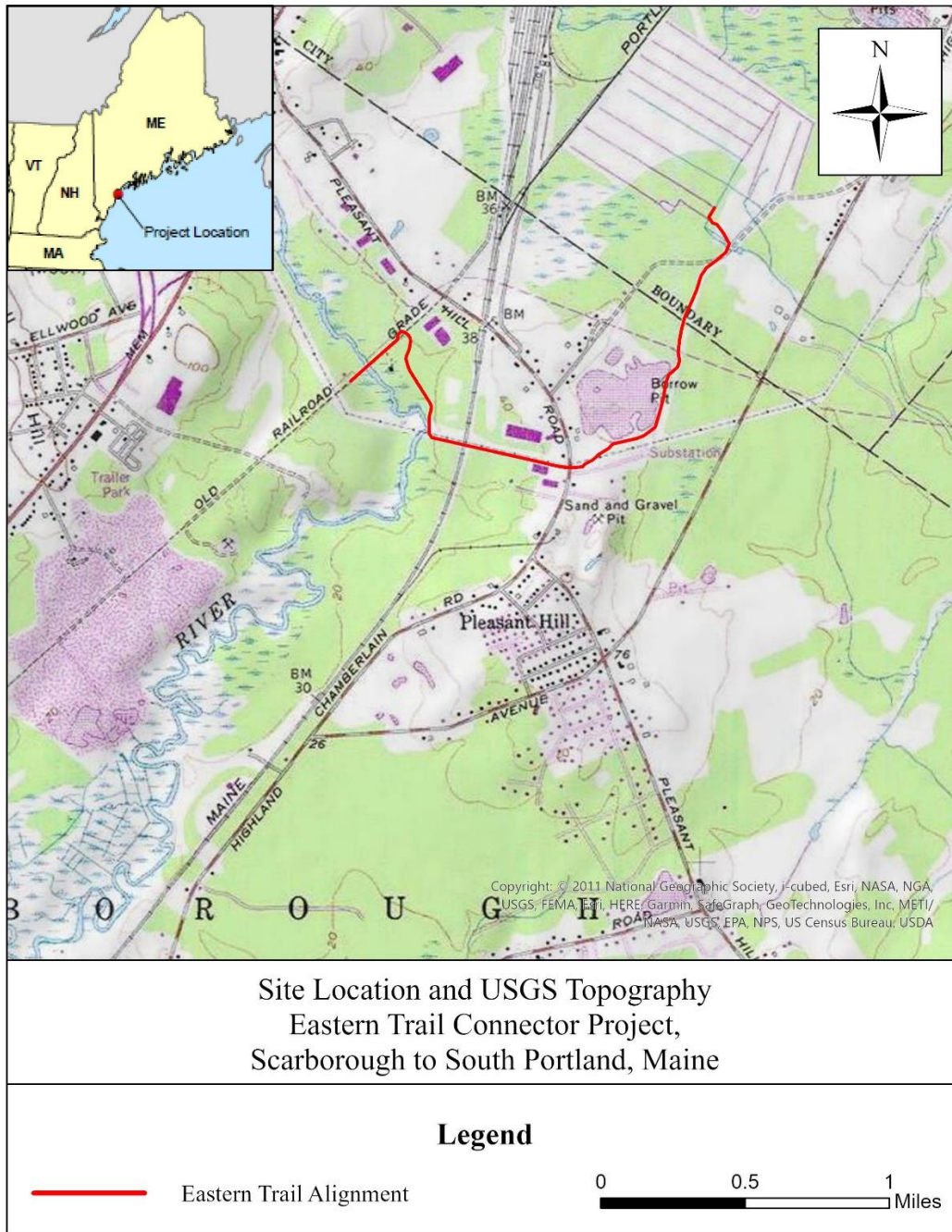
- The need for grading, cutting, and filling has been minimized by following the existing terrain and topography to the extent practicable.
- The area of new impervious area was minimized by incorporating grassed shoulders and allowing for a stone dust trail surface. Pavement will be proposed where grades exceed 3 percent, and the trail passes through the Nonesuch River floodplain to minimize erosion potential.
- To maintain existing hydrologic connections, where the trail crosses large wetland areas, large, embedded culvert pipes will be installed to equalize flows and provide connectivity between wetland areas.
- Crossings will be designed in accordance with Wetland and Stream Crossing Conditions of the USACE General Permit for the State of Maine to the extent practicable.
- The bottom elevation of the Nonesuch River Bridge will be approximately EL. 21 feet, which is almost 9 feet above the approximate 100-year flood elevation and exceeds MaineDOT's minimum freeboard requirement of 2 feet for a minor bridge.
- The Nonesuch River crossing is located within the former railroad crossing and former railroad bed, where impacts to the river and adjacent wetlands previously occurred.
- Through forested wetland areas, the trail was sited through a series of forested upland areas within the larger wetland complex to reduce wetland impacts.
- The trail has been situated within and along the existing CMP utility corridor, where vegetation is already periodically maintained, and NEC habitat does not exist or is of overall low quality.
- Where feasible, clearing will involve only the removal of tree branches that encroach onto the trail area, leaving the tree intact.
- New stream crossings were aligned to minimize linear impacts.

In addition, the following general measures will be taken to limit adverse impacts to on-site resources.

- Any dewatering during construction or other point source discharges will comply with waste discharge requirements imposed under the National Pollutant Discharge Elimination System (NPDES). A Section 401 Certification will be obtained from MDEP prior to initiating work on the project.
- The project will comply with general and project-specific conditions required by state and federal permitting agencies.

- Contractors performing work will be responsible for developing and maintaining erosion and sedimentation control measures, which at a minimum will include plans for:
  - Sediment and erosion control best management practices
  - Dewatering methods and location
  - Dust prevention; and,
  - Hazardous spill prevention and response.
- Culverts will be embedded to prevent hanging outlets and will be monitored and maintained by the Town.
- The Project Resident Engineer will oversee site inspections to ensure compliance with design plans and BMPs.
- A construction kick-off meeting between the applicant, Project sponsors, Project engineers and the contractor(s) will be held prior to beginning construction to discuss permit conditions, site specific plans, and required construction BMP techniques and procedures.
- No fuel would be stored onsite, and the contractor would be required to properly manage and dispose of any hazardous waste off the site during construction.
- BMPs will be used to stabilize disturbed soil, minimize erosion, and capture and remove sediment suspended in runoff before it leaves the site and will be removed after the site is successfully stabilized.
- Vegetation removal will be limited to the Proposed Action Area.
- Measures will be taken to avoid rutting within wetland areas.
- Except for several short duration pile-driving and bridge erection activities, onsite work and equipment operation will take place during daylight and normal business hours.

## ATTACHMENT 3 – LOCATION



Date: 9/20/2023



## ATTACHMENT 4 - PHOTOS



Station No. ~100+00\_West abutment of former Nonesuch River railroad bridge and tie-in location to existing trail – looking Northwest



Station No. ~100+15\_Nonesuch River and emergent wetland upstream of proposed bridge - looking Northwest



Station No. ~100+25\_East abutment of former Nonesuch River railroad bridge - looking Northeast



Station No. ~100+25 to ~105+00\_former railroad bed – looking Northeast





Station No. ~105+00 to ~119+00\_forest  
community – looking East



Station No. ~123+00 to ~127+00\_Pan Am/CSX  
Railroad and CMP corridor – looking east



Station No. ~128+00 to ~133+00\_CMP  
corridor – looking West



Station No. ~133+00 to ~137+30\_CMP corridor –  
looking east



Station No. ~137+60\_Pleasant Hill Road –  
looking North



Station No. ~138+30 to ~142+00\_CMP corridor –  
looking Southwest





Station No. ~145+00 to ~161+00\_existing road along Prouts Pond – looking Northwest



Station No. ~162+00 active waste disposal site – looking West



Station No. ~162+95 Steam A crossing – looking North



Station No. ~163+50 to ~164+80\_CMP corridor and waste disposal site – looking South



Station No. ~165+20 to ~173+80\_CMP corridor and wetland – looking North



Station No. ~174+20\_Stream B crossing – looking Southeast





Station No. ~175+50\_Steam C crossing –  
looking Northeast



Station No. ~176+30\_Second Steam C crossing –  
looking North



Station No. ~178+50 to  
~180+50\_ Wainwright Sports Complex –  
looking Northwest



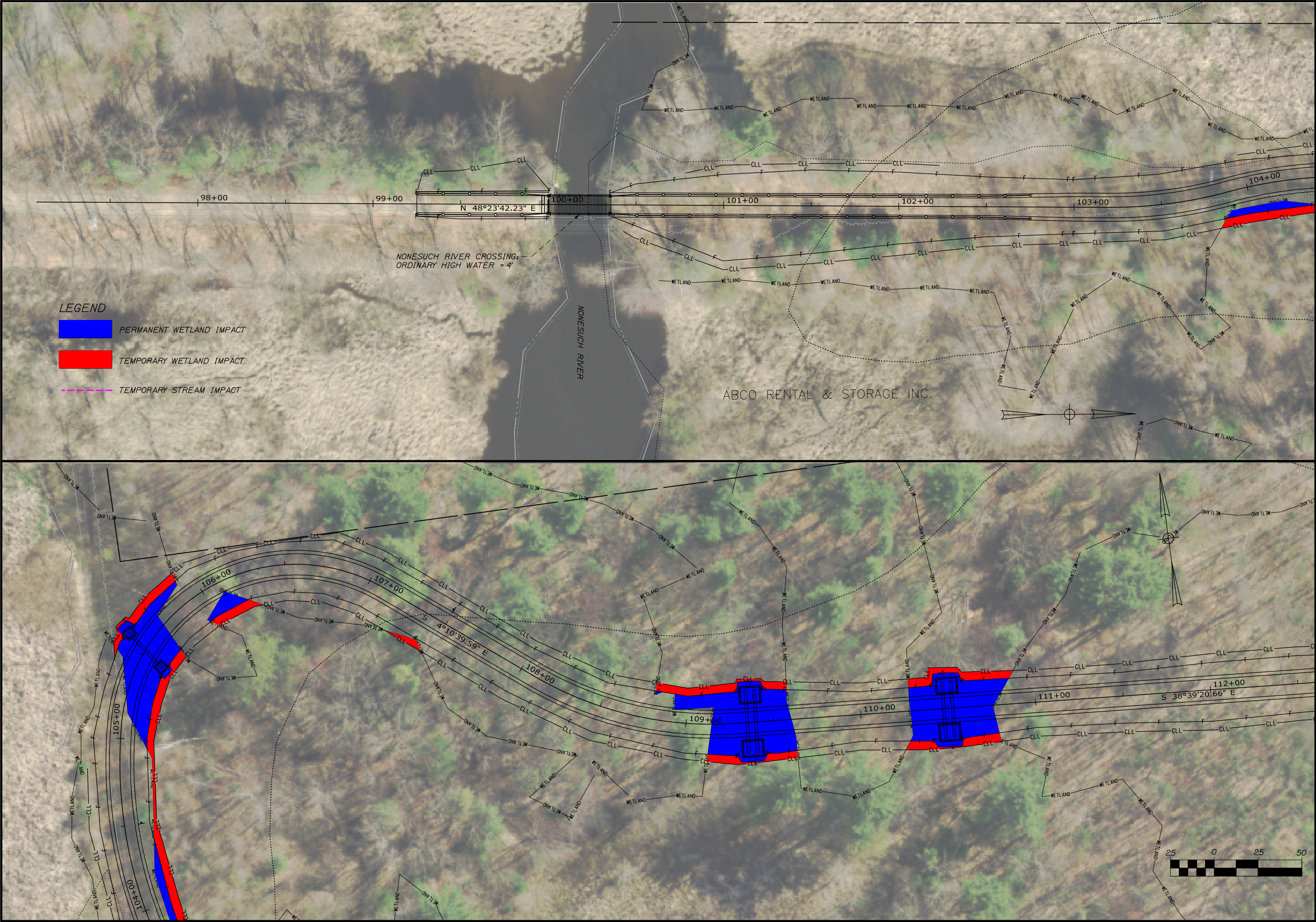
Station No. ~193+00\_tie-in to existing Eastern Trail in  
Wainwright Sports Complex – looking West

## **ATTACHMENT 5 – DESIGN PLANS**

As shown on the attached design plans, the primary components of the 1.6-mile Eastern Trail Connector Project include:

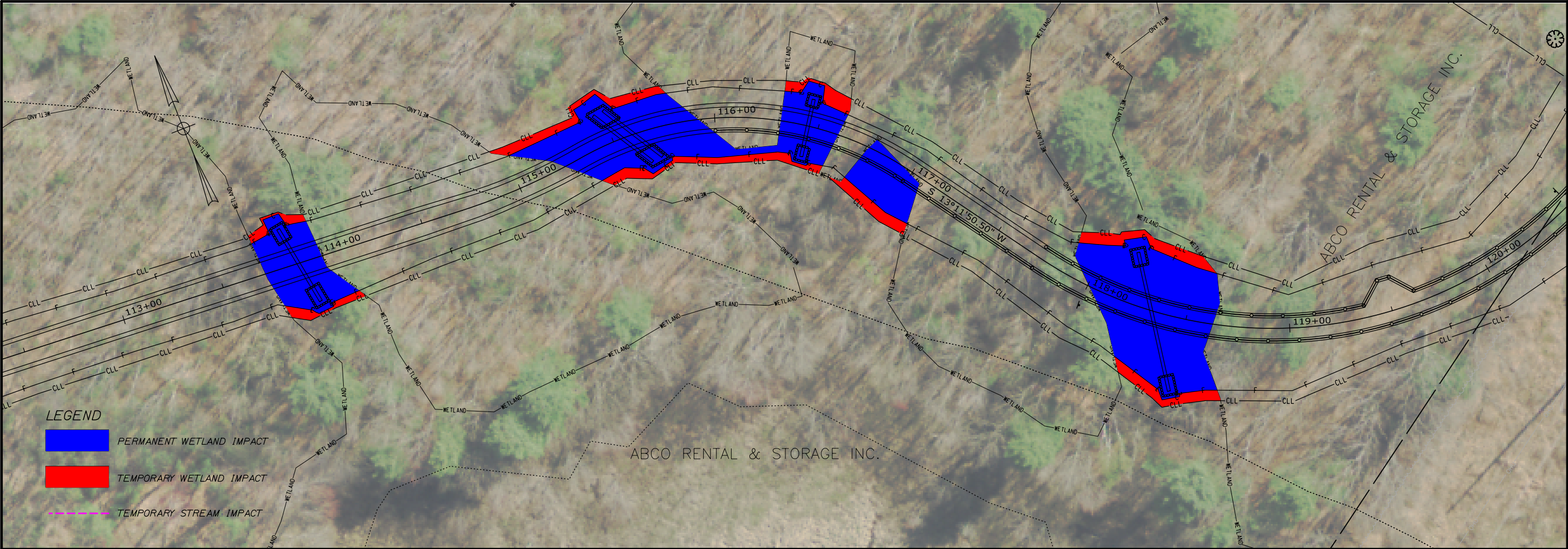
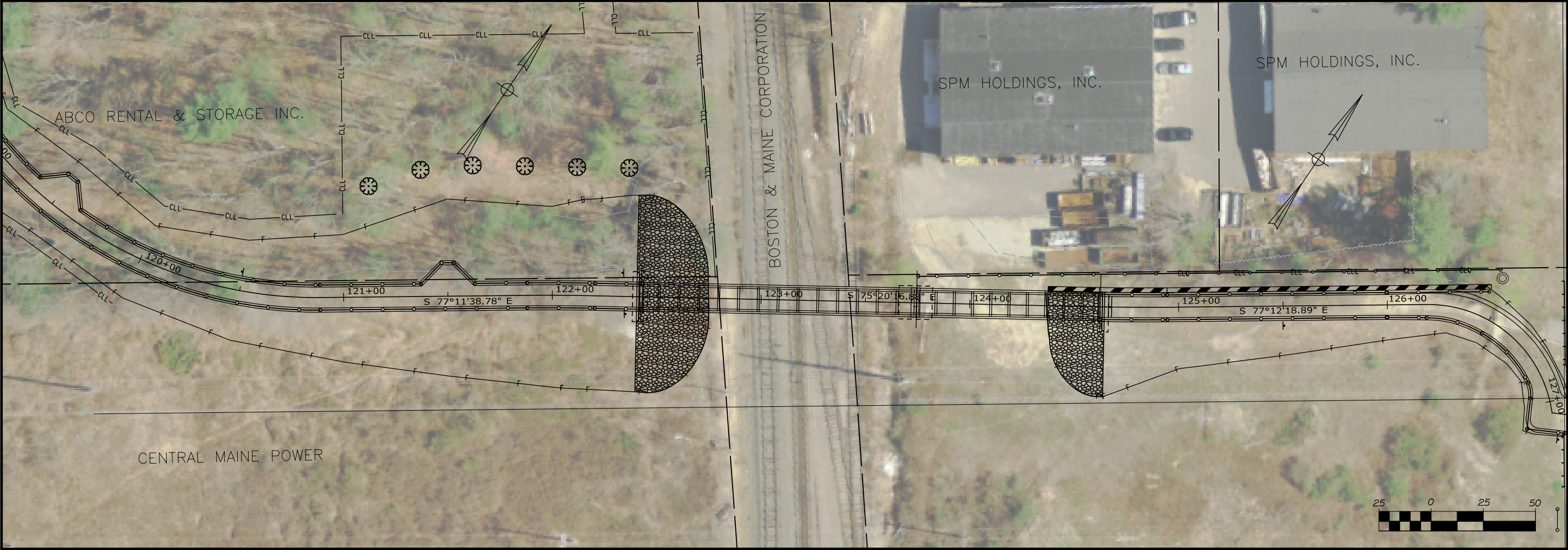
- Trail constructed of 2” hot mixed asphalt (HMA) or stone dust surface over a variable depth aggregate subbase course (gravel, type D-modified).
- Trail constructed to a 10 to 12-foot width, with 2-foot shoulders, and a 5-foot minimum clear zone on each side. Shoulders will be loamed and seeded after placement of trail surface and maintained as herbaceous ground cover. Clear zones will be allowed to re-establish.
- Cedar rail or PVC coated chain link fence installed along the trail at bridge approaches and along waterbodies.
- Waterbody crossings consist of 60-inch diameter culverts embedded 18 inches below existing streambed elevation.
- Wetland crossings consist of 36-inch diameter pipes embedded to 12 inches below existing ground elevation.
- The Nonesuch River Bridge (STA 100+00) will be a prefabricated steel truss with timber decking, supported by concrete pedestals installed on the existing granite masonry abutments.
- The pedestrian bridge over the CSX Railroad STA 123+00) is partly within the railroad right of way and partly within CMP’s right of way. The bridge will be a prefabricated steel truss with timber decking, supported by steel H-piles and reinforced concrete abutments or piers. The bridge railing will have a minimum of 107’ length of protective screening over the railroad tracks to protect the railroad corridor from vandalism by trail users. A prefabricated concrete modular gravity wall will be installed east of the railway between approximately STA 126+43.49 to STA 124+35.92.





STATE OF MAINE DEPARTMENT OF TRANSPORTATION AC-STP-1942(600)X & CMAQ-1942(610)		SIGNATURE		DATE	
		P.E. NUMBER		DATE	
TOWN OF SCARBOROUGH EASTERN TRAIL CONNECTOR SCARBOROUGH TO SOUTH PORTLAND, MAINE  TRAIL PLAN 1		PROJ. MANAGER	BILL REICH	BY	DATE
		DESIGN-DETAILED	C. Helmick	P. Bishop	6/23
		CHECKED-REVIEWED	L. Driscoll	J. O'Neil	6/23
		DESIGNS DETAILING	-	-	-
		REVISIONS 1	-	-	-
REVISIONS 2	-	-	-		
REVISIONS 3	-	-	-		
REVISIONS 4	-	-	-		
SHEET NUMBER		1			
OF 6		WIN 19426.00 & 019426.10 HIGHWAY PLANS			





LEGEND

- PERMANENT WETLAND IMPACT
- TEMPORARY WETLAND IMPACT
- TEMPORARY STREAM IMPACT

PROJ. MANAGER	BILL REICH	BY	DATE
DESIGN-DETAILED	C. Helmick	P. Bishop	6/23
CHECKED-REVIEWED	L. Driscoll	J. O'Neil	6/23
DESIGNS DETAILLED	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE	P.E. NUMBER	DATE



Date:9/22/2023

Username:

Division:

Filename: 010\_TrailPlan03.dgn

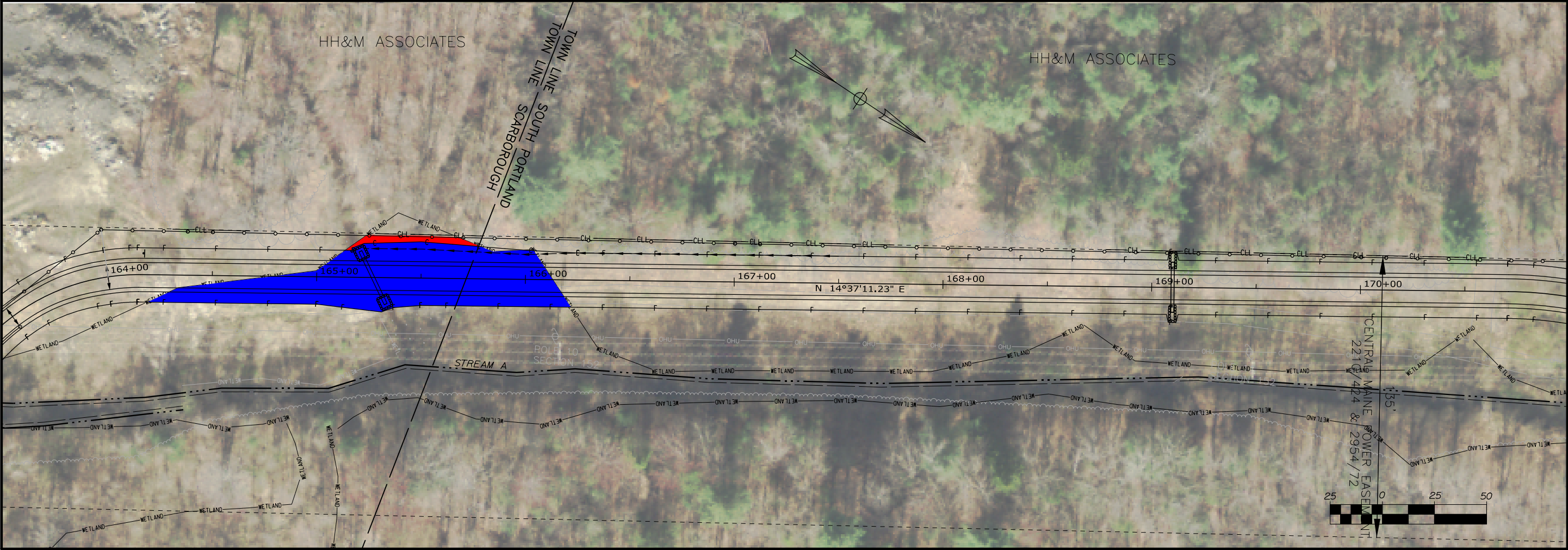


STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
AC-STP-1942(600)X & CMAQ-1942(610)		SIGNATURE	
WIN		P.E. NUMBER	
19426.00 & 019426.10		DATE	
HIGHWAY PLANS			
TOWN OF SCARBOROUGH		PROJ. MANAGER	
EASTERN TRAIL CONNECTOR		BILL RECH	
SCARBOROUGH TO SOUTH PORTLAND, MAINE		BY	
TRAIL PLAN 3		DATE	
SHEET NUMBER		DESIGN-DETAILED	
3		CHECKED-REVIEWED	
OF 6		DESIGNS-DETAILED	
		REVISIONS 1	
		REVISIONS 2	
		REVISIONS 3	
		REVISIONS 4	
		FIELD CHANGES	









**LEGEND**

PERMANENT WETLAND IMPACT

TEMPORARY WETLAND IMPACT

TEMPORARY STREAM IMPACT

TOWN OF SCARBOROUGH  
EASTERN TRAIL CONNECTOR  
SCARBOROUGH TO SOUTH PORTLAND, MAINE

SHEET NUMBER  
**5**  
OF 6

PROJ. MANAGER	BILL REICH	BY	DATE
DESIGN-DETAILED	C. Helmick	P. Bishop	6/23
CHECKED-REVIEWED	L. DRISCOLL	J. Ould	6/23
DESIGNS DETAILED	-	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE	P.E. NUMBER	DATE

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
A-C-STP-1942(600)X & CMAQ-1942(610)

WIN  
19426.00 & 019426.10 HIGHWAY PLANS

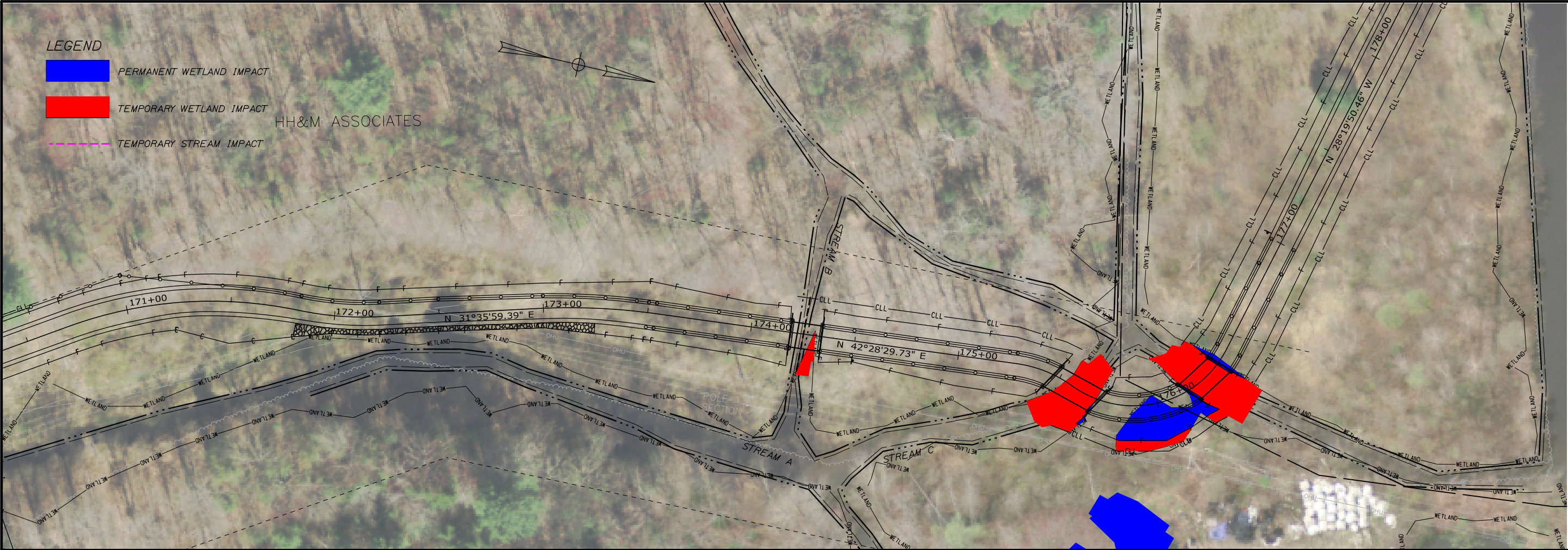


Date:9/22/2023

Username:

Division:

Filename: 013\_TrailPlan06.dgn



STATE OF MAINE DEPARTMENT OF TRANSPORTATION AC-STP-1942(600)X & CMAQ-1942(610)		SIGNATURE	
		P.E. NUMBER	
		DATE	
TOWN OF SCARBOROUGH EASTERN TRAIL CONNECTOR SCARBOROUGH TO SOUTH PORTLAND, MAINE		PROJ. MANAGER	BILL REICHL
TRAIL PLAN 6		DESIGNED-DETAILED	C. Helmick
		CHECKED-REVIEWED	L. DRISCOLL
		DESIGNS DETAILING	-
		REVISIONS 1	-
		REVISIONS 2	-
SHEET NUMBER		REVISIONS 3	-
		REVISIONS 4	-
6 OF 6		FIELD CHANGES	-
		WIN 19426.00 & 019426.10 HIGHWAY PLANS	



## ATTACHMENT 6 – OTHER PROJECT PLANS

### A. Waterbody Impacts

Four waterbodies were identified within 25 feet of the proposed trail alignment that meet the definition of a river, brook, or stream per Maine’s NRPA. Three of the waterbodies are highly modified (i.e., straightened), and of overall low-quality due to slow flow and invasive aquatic species. Streams will be crossed using embedded culverts per the USACE’s Maine General Permit Conditions; 180 linear feet of impact to these resources is anticipated. All in-stream work will take place within the recommended in-water work window between July 15 and October 1.

### B. Wetland Impacts

Wetland impacts will total 28,250 square feet (sf) (0.65 acre), including 20,100 sf (0.46 acres) of palustrine forested wetland (PFO) located primarily adjacent to the Nonesuch River, and 8,150 sf (0.19 acres) of managed palustrine scrub-shrub wetlands (PSS) located primarily in the maintained CMP utility line corridor and Wainwright Recreation Complex. Approximately 21,200 sf (0.49 acre) of impact will be permanent, and 7,050 sf (0.16 acre) will be temporary.

Table 1: Impact totals by resource type and temporal extent. Eastern Trail, Scarborough and South Portland, Maine.

	Impact by Resource Type (sf)		
	PFO	PSS	
Total	20,100	8,150	28,250
	Type of Impact (sf)		
	Permanent (Fill)	Temporary (Clearing)	
Total	21,200	7,050	28,250

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION



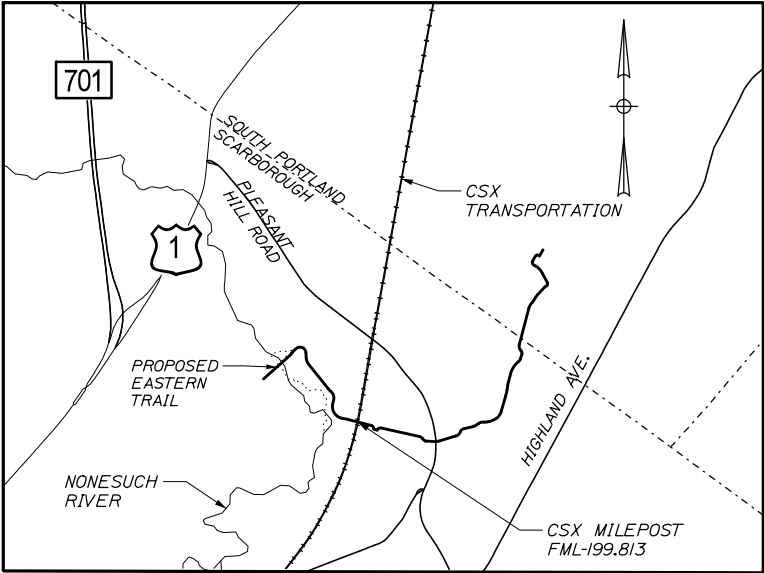
SCARBOROUGH AND SOUTH PORTLAND  
CUMBERLAND COUNTY

STP-1942600 & STP-1942610

EASTERN TRAIL:  
MULTI-USE RECREATIONAL  
TRAIL DEVELOPMENT

PROJECT LENGTH : 1.6 mi.  
CSX MILEPOST FML-199.813

A GRADING, BASE, SURFACE, TRAIL  
AND BRIDGE PROJECT



LOCATION MAP  
N.T.S.

INDEX OF SHEETS

Title Sheet .....	1
General Plan & Notes .....	2
Profile .....	3
Details .....	4
Boring Logs .....	5-8

TOWN OF SCARBOROUGH EASTERN TRAIL CONNECTOR SCARBOROUGH TO SOUTH PORTLAND, MAINE  TITLE SHEET	STATE OF MAINE DEPARTMENT OF TRANSPORTATION		APPROVED		DATE
	PROJECT INFORMATION		SIGNATURE	P.E. NUMBER	DATE
	PROGRAM	PROJECT MANAGER	DESIGNER	CONSULTANT	PROJECT RESIDENT
	Multimodal	Bill Reichl	Judy Gates	HNTB	CONTRACTOR
SHEET NUMBER		PROJECT COMPLETION DATE			
1					
OF 8					

CSX RAILWAY  
REVIEW PLANS

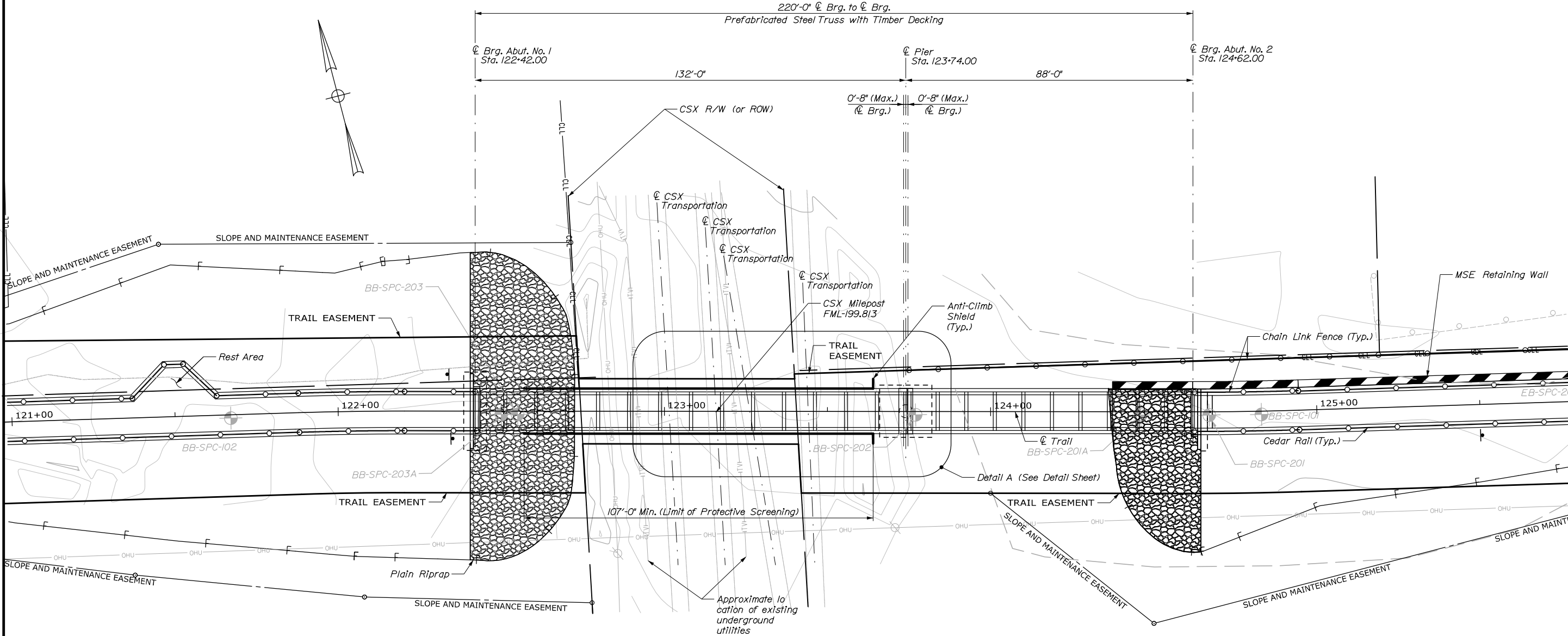


Date:4/9/2024

Username:

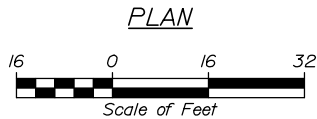
Division:

Filename: 002\_CSX Rail\_ GeneralPlan.dgn



#### GENERAL NOTES:

1. The mileposts immediately north and south of the crossing, along the CSX Railway, are FML-199 0.813 miles to the north and FML-200 0.197 miles to the south.
2. Upon completion of construction, a full set of electronic as-built drawings, showing actual measured vertical and horizontal clearances, shall be furnished to CSX.
3. For demolition, erection and hoisting all lifting equipment and connection devices shall have capacity for 150% of the actual lifting load. The factor of safety provided by the manufacturer in the lifting capacity data shall not be considered in the 150% requirement. A Professional Engineer licensed in the State of Maine shall sign and seal all plans and calculations related to critical lifting.
4. During and after completion of construction operations, the Contractor shall clear all CSX Railway drainage ditches to the satisfaction of the CSX Railway Construction Engineer and Inspection Representative.
5. A ballast protection system shall be installed consisting of geofabric or canvas. The system shall extend along the track structure for a minimum of 25'-0" beyond the limits of the demolition work.
6. The Contractor shall submit a detailed procedure for erecting over or adjacent to CSX right-of-way for approval by the CSX Construction Engineer and Inspection Representative. The procedure shall indicate the capacity of cranes, location of cranes with respect to the tracks and calculated lifting loads.
7. The character of flow in the CSX Railway's ditches and/or drainage structures shall not change as a result of this project.
8. The Pier face is not within 25'-0" of the track centerline and therefore does not require a crashwall.
9. The Contractor shall consider the Theoretical Live Load Influence Zone depicted in the CSX Public Projects Manual for all subsurface excavation in the vicinity of the railway.
10. Any disturbance to soils within the CSX ROW shall adhere to the CSX Transportation Soil and Water Management Policy appended to the CSX Public Projects Manual.



CSX RAILWAY  
REVIEW PLANS

**HNTB**

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
STP-1942600 & STP 1942610  
WIN  
19426.00 & 019426.10  
BRIDGE PLANS

PROJ. MANAGER	BILL RECH	BY	DATE
DESIGN-DETAILED	D. Guzzi	K. Belsie	4/2024
CHECKED-REVIEWED	G. Stanley	J. O'Neil	4/2024
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

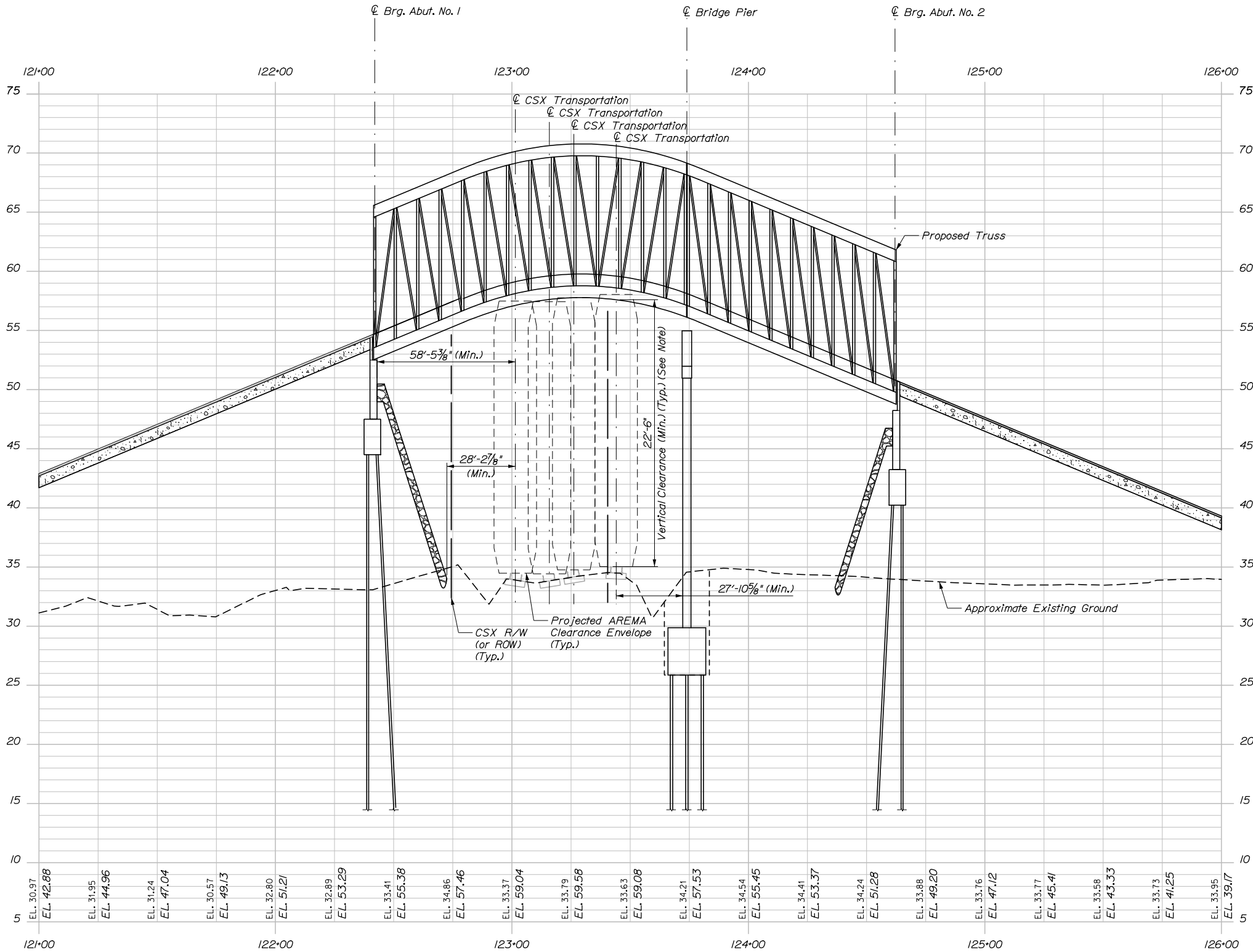
TOWN OF SCARBOROUGH  
EASTERN TRAIL CONNECTOR  
SCARBOROUGH TO SOUTH PORTLAND, MAINE  
GENERAL PLAN & NOTES

SHEET NUMBER  
2  
OF 8

Username: Date:4/9/2024

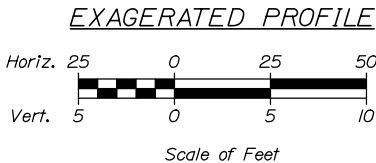
Division:

Filename: 003\_CSX\_Rail\_Profile.dgn



NOTES:

1. A minimum vertical clearance of 22'-6\"/>

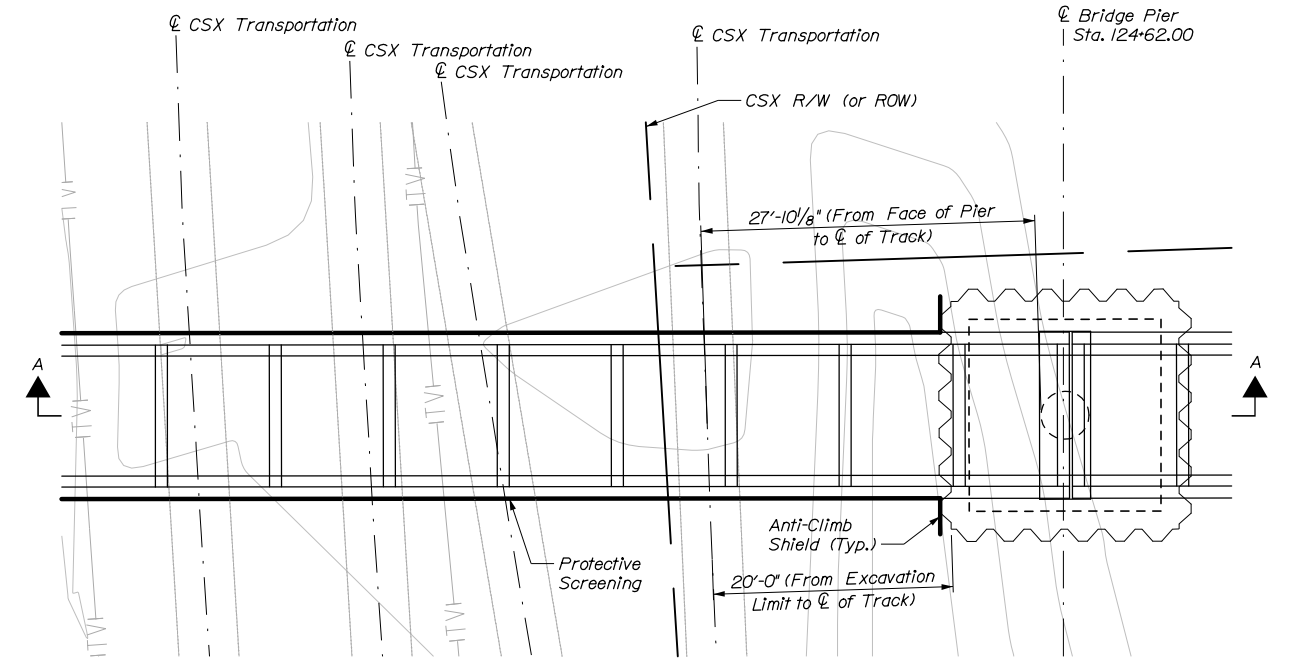


CSX RAILWAY  
REVIEW PLANS

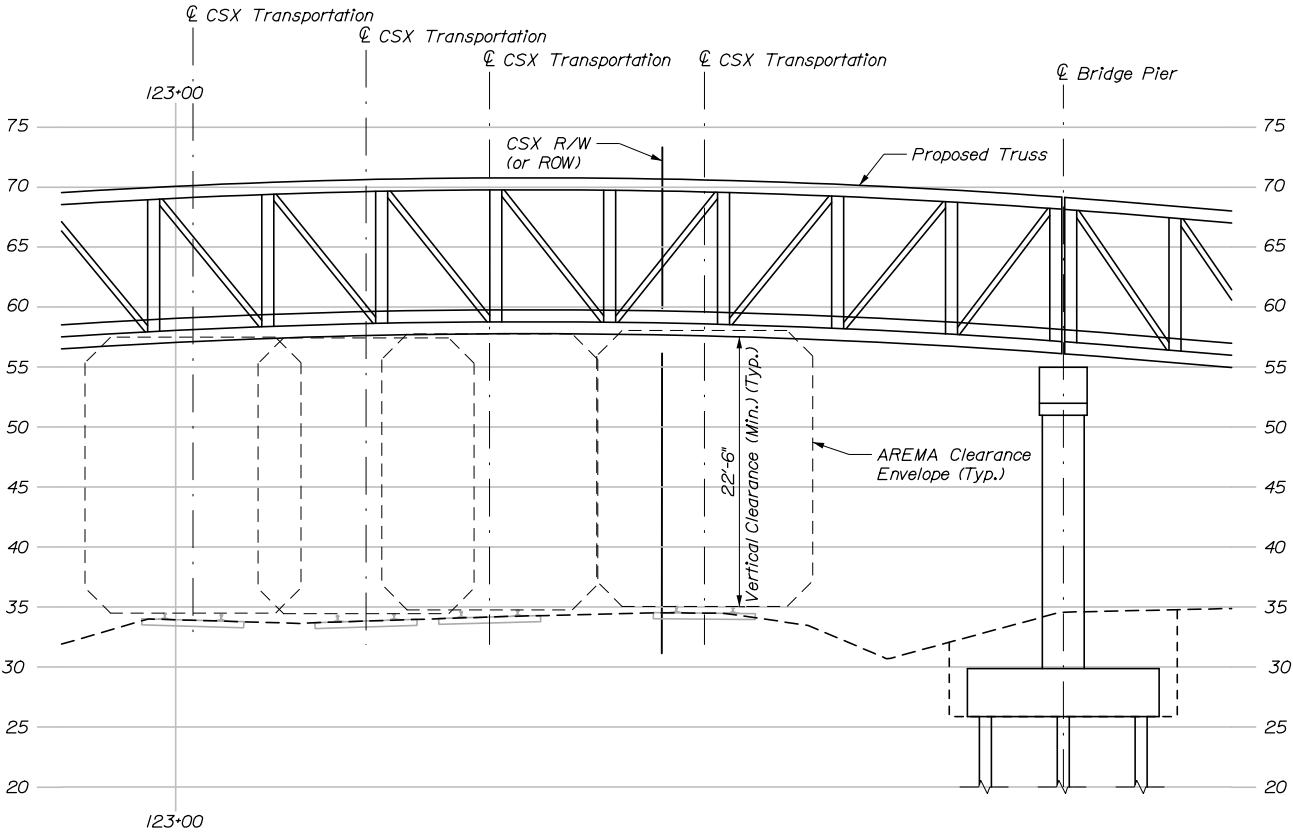


TOWN OF SCARBOROUGH EASTERN TRAIL CONNECTOR SCARBOROUGH TO SOUTH PORTLAND, MAINE			PROJ. MANAGER			BILL REICH	BY	DATE
PROFILE			DESIGN-DETAILED			D. Guzzi	K. Belsie	4/20/24
			CHECKED-REVIEWED			G. Standley	J. Ound	4/20/24
			DESIGN2-DETAILED2			-	-	-
			DESIGN3-DETAILED3			-	-	-
			REVIEWS 1			-	-	-
			REVIEWS 2			-	-	-
			REVIEWS 3			-	-	-
			REVIEWS 4			-	-	-
			FIELD CHANGES			-	-	-
SHEET NUMBER			DATE					
3			P.E. NUMBER					
OF 8			SIGNATURE					
			DATE					
			WIN					
			19426.00 & 019426.10					
			BRIDGE PLANS					
			STP-1942600 & STP 1942610					
			DEPARTMENT OF TRANSPORTATION					
			STATE OF MAINE					

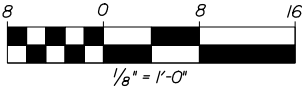
CSX RAILWAY  
REVIEW PLANS



DETAIL A



SECTION A-A



TOWN OF SCARBOROUGH EASTERN TRAIL CONNECTOR SCARBOROUGH TO SOUTH PORTLAND, MAINE  DETAILS		PROJ. MANAGER		BILL REICH	BY	DATE
		DESIGN-DETAILED		D. Guzzi	K. Belsie	4/2024
		CHECKED-REVIEWED		G. Standley	J. Oland	4/2024
		DESIGN2-DETAILED2		-	-	-
		DESIGN3-DETAILED3		-	-	-
		REVISIONS 1		-	-	-
		REVISIONS 2		-	-	-
		REVISIONS 3		-	-	-
		REVISIONS 4		-	-	-
		FIELD CHANGES		-	-	-
SHEET NUMBER		4				
OF 8						
STATE OF MAINE DEPARTMENT OF TRANSPORTATION		SIGNATURE				
		P.E. NUMBER				
		DATE				
STP-1942600 & STP 1942610		WIN 19426.00 & 019426.10				
		BRIDGE PLANS				

Maine Department of Transportation Soil/Bore Exploration Log				Project: Scarborough Eastern Trail Project Location: Scarborough, Maine				Boring No.: BB-SPC-201A	
US: 111115				WIN:		019426.10			
Driller:		Northern Tech Boring		Elevation (ft.):		Auger: 10/001			
Operator:		Mike Nadeau		Datum:		Sampler:		SPT Split-Barrel	
Logged By:		Serena Pope		Rig Type:		07inch D-50 Turbo		Hammer Wt./Fall: 140 lb/30in.	
Date Started/Finished:		06-15-2018 / 06-18-2018		Drilling Method:		3" Tri cone B.T., Rotary Wash		Core Barrel:	
Boring Location:		East of Trunks		Casing 10/001:		4" Steel Casing		Water Level Ft: 6'	
D = Split Spoon Sample ND = Unconsolidated Split-Barrel Sample S = Split-Barrel Tube Sample A = Rock Core Sample V = Inst. Vane Shear Test St = Split Stem Auger				S <sub>u</sub> = Inst. Vane Shear Strength (psf) T <sub>u</sub> = Pocket Vane Shear Strength (psf) C <sub>u</sub> = Unconfined Compressive Strength (psf) S <sub>100</sub> = Lab test Shear Strength (psf) W <sub>P</sub> = weight of water, hammer W <sub>S</sub> = weight of rods				Corrections: WC = water content, percent L = Liquid Limit PL = Plasticity Limit PI = Plasticity Index C = Grain Size Analysis C = Compaction Test	
Sample Information									
Depth (ft.)	Sample No.	Pen./Blow, ft/in.	Sample Depth (ft.)	Blow 1/8" in. Sample Depth (ft/in)	Pen./Blow, ft/in	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/Asht and	Unstiff Class
60	S-2	24/14	60.0 - 62.0	5 / 5 / 7 / 8	12	81	Becomes medium dense, medium to fine sand, little silt, slightly darker.		
						70			
						65			
						69			
65	S-3	24/8	65.0 - 67.0	4 / 5 / 7 / 9	12	70	SAND WITH SILT (SP-SM) medium dense, wet, coarse to fine sand, few silt, gray-brown.	1510F MC=21.6% G	
						60			
						72			
						80			
70	S-4	24/24	70.0 - 72.0	3 / 2 / 3 / 5	5	88	SAND WITH SILT AND CLAY (SP-SM) loose/soft, wet, coarse to fine sand, varying amounts of clay/silt, gray.	MC=13.3%	
						58			
						71			
						89			
75	S-5	24/3	75.0 - 77.0	16 / 16 / 35 / 25	51	97		MC=7.6%	
						67			
						73			
						70			
80	S-6	24/18	80.0 - 82.0	26 / 26 / 34 / 21	60	91	Probable still angular aggregate.	MC=7.1%	
						75			
						89			
						93			
						97			
						86			
						75			
85	S-7	24/15	85.0 - 87.0	17 / 18 / 25 / 38	43	93	Chatter in auger at 83'.	MC=7.1%	
						86			
						75			
						118			
1. RWGA Project No. 0600-102 2. Drive and wash to 95 feet without sampling. Refer to log BB-SPC-201 for subsurface materials from 0 to 95 feet below ground surface. 3. Hammer Serial No. 317. 4. SPT N-values uncorrected.									
Interpretation: These represent uncorrected blow counts between split barrel transitions may be greater. * Some test results have been noted as fines and color analysis. Groundwater fluctuations may occur due to conditions after those present at the time measurements were made.									
Boring No.: BB-SPC-201A									

Maine Department of Transportation										Project: Scarborough Eastern Trail Project		Boring No.: BB-SPC-201A	
Soil/Bore Exploration Log										Location: Scarborough, Maine		WIN: 019426.10	
US UNITS													
Driller:		Northern Test Boring			Elevation (ft.):			Auger ID(OD):					
Operator:		Mike Nadeau			Datum:			Sampler:			SPT 019430m		
Logged By:		Serena Pope			RIG Types:			0'lean 0-50 Turbo			Hammer Wt./Falls: 140 lb/30in.		
Date Start/Finish:		06-15-2018 / 06-18-2018			Drilling Method:			3" Tri cone B.T.S. Rotary Wash			Core Barrel:		
Boring Location:		East of Tracks			Casing ID(OD):			4" Steel Casing			Water Level(ft): 6'		
DEFINITIONS:										NOTATIONS:			
S = Split Spoon Sample W = Photoassisted Split Spoon Sample U = In Situ Wall Tube Sample H = Hand Core Sample V = In Situ Vane Shear Test SA = Split Stem Auger										S <sub>u</sub> = In Situ Field Vane Shear Strength (psf) S <sub>h</sub> = Photoassisted In Situ Shear Strength (psf) S <sub>g</sub> = In Situ Geotechnical Shear Strength (psf) S <sub>u</sub> = Undrained Compressive Strength (psf) S <sub>u</sub> (lab) = Lab Vane Shear Strength (psf) W <sub>u</sub> = weight of solids - volume W <sub>u</sub> = weight of pore		S <sub>u</sub> = water content, percent LL = Liquid Limit P <sub>L</sub> = Plasticity Limit PI = Plasticity Index C = Grain Size Analysis C = Compaction Test	
Sample Information										Visual Description and Remarks		Laboratory Testing Results/ASHTO and Unified Class	
Depth (ft.)	Sample No.	Pen./Rev. (in)	Sample Depth (ft.)	Blows 1/6 in. (100 lb)	Penetration (100 lb)	Value	Coring	Elevation (ft.)	Graphic Log				
90	S-8	23/16	90.0 - 91.9	23 / 19 / 21 / 50/5*	100+					Switch to 3" casing at 90'. Chatter in auger at 91'.		MC=11.8%	
95	S-9	24/15	95.0 - 97.0	40 / 50 / 50/3*	100+							MC=8.1%	
100	S-10	24/17	100.0 - 102.0	39 / 45 / 50/5*	95+							MC=7.5%	
105	S-11	24/21	105.0 - 107.0	32 / 37 / 45 / 50/5*	82							MC=8.4%	
110	S-12	24/8	110.0 - 112.0	21 / 50/5*								MC=9.8%	
115	S-13	24/19	115.0 - 117.0	33 / 46 / 50/5*	86+							MC=9.0%	
120	Bottom of Borehole												
1. RWDG Project No. 0600-102 2. Drive and wash to 55 feet without sampling. Refer to log BB-SPC-201 for subsurface materials from 0 to 55 feet below ground surface. 3. Hammer SPT log No. 377. 4. SPT N-Values uncorrected.													
Investigation Notes represent observations made for each well type. Investigation may be broken. * Error bars: readings have been made at 15 in. and 30 in. increments. Greater fluctuations may occur due to conditions other than those present at the time measurements were made.													
										Page 4 of 5		Boring No.: BB-SPC-201A	

Maine Department of Transportation Salt/Bulk Exploration Log				Project Scarborough Eastern Trail Project Location: Scarborough, Maine				Boring No.: BB-SPC-201A WIN: 019426.10																																																																																																																																																																																																																																																																																																																																																																																													
US UNITS				Elevation (ft.)		Date: 10/03/20																																																																																																																																																																																																																																																																																																																																																																																															
Driller: Northern Test Boring		Operator: Mike Notestein		Datum		Sampler: SP1 Split-Barrel																																																																																																																																																																																																																																																																																																																																																																																															
Logged By: Serena Pope		Rig Types		Bleed/Ch 0-50 Turbo		Homer: Wt./Falls 140 lb/30ft.																																																																																																																																																																																																																																																																																																																																																																																															
Date Start/Finish: 06-15-2018 / 06-18-2018		Drilling Method: 3" Tri. cone BTR, Rotary Wash		Core Barrel:		Water Level(ft): 6'																																																																																																																																																																																																																																																																																																																																																																																															
Boring Location: East of Tracks		Casing ID/OD: 4" Steel Casing		SPLITTAGE:		SPLITTAGE:																																																																																																																																																																																																																																																																																																																																																																																															
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CSX RAILWAY  
REVIEW PLANS

Maine Department of Transportation										Project: Scarborough Eastern Trail Project		Boring No.: BB-SPC-202	
Salt/Ignite Exploration Log										Location: Scarborough, Maine		WIN: 019426.10	
US UNITS													
Driller:		R.W. GITTLESPITE & ASSOCIATES, Inc.			Elevation (ft.):		N/A		Auger: 10/001		4.25" ID / 7.5" OD		
Operator:		M. Nadeau			Datum:				Sampler:		SPI Split-Barrel		
Logged By:		D. Walker			Rig Type:		Ditchbox D50		Hammer Wt./Fall:		140lbs, 30"		
Date Start/Finish:		10/04/2016 / 10/06/2016			Drilling Method:		HSA, 3" roller btt, drive + wash		Core Barrel:		N02		
Boring Location:		See Exploration Location Plan			Casing 10/001:		3" and 4" ID		Water Level:		7"		
Notes:					SPI Notes:				SPI Notes:				
0 = Split Stem Sample					u = In situ Field raw shear strength (psf)				u <sub>c</sub> = water content, percent				
1 = Groundwater Split Stem Sample (split)					t <sub>g</sub> = Plasticity Index (percent)				L = Liquid Limit				
u = In situ (u <sub>1</sub> ) face sample					u <sub>c</sub> = Uncured Compacted Strength (psf)				P = Plasticity Index				
w = Wet Core Sample					u <sub>1</sub> = Lab raw shear strength (psf)				PL = Plasticity Limit				
v = In situ raw shear test					w <sub>1</sub> = weight at 140lb, number				G = Grain Size Analysis				
SK = Split Stem Auger					w <sub>2</sub> = weight at 40lb				C = Compression Test				
Sample Information													
Boring (ft.)	Sample No.	Date	Pen./Rec. (ft.)	Sample Depth (ft.)	Class (ft.)	Class (ft.)	Class (ft.)	In-situ	Class	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ASSTO and Unified Class
120	S-20	11/7	120.0 - 120.9					92/11				STILL MULTI-LAYER, WEIR, VERY DENSE - STILL WITH LITTLE FINE TO MEDIUM GRAVEL, trace fine sand.	
125												Increased drilling resistance, possible weathered rock.	126.0
	R-1		128.0 - 128.5		RD025%							Top of Bedrock.	
	R-2		133.0 - 133.5		RD045%							Gray to brown, slightly to fine grained PHILLITE. Rock is very soft to hard, slightly to highly weathered, thinly bedded, moderate to extremely fractured with low to vertical jointing. Cleavage planes are slightly rough to rough with slight to very wide joint widths exposures and slight to moderately weathered joints. Some clay infilling in fractures. Characteristics similar to rock types of the Scarborough formation.	127.0
130												R-1 Recover=51.6% R-1 Recover=75.1% R-1 Recover=71.3%	
	R-3		133.0 - 136.0		RD025%								
135												Bottom of Exploration at 136.0 feet below ground surface.	136.0
140													
145													
150													

Notes:

1. RMGA Project No. 0600-102.

2. In-situ vane shear tests conducted using WinHEOT provided Geonor 65x130mm rectangular vane.

3. Number: Serial No. 283.

4. SPT N-Values are not reported.

Investigation Times represent approximate boundaries between soft, typical, and hard times may be greater.

Page 5 of 5

\* Some test results have been made at times and under conditions stored. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Boring No.: BB-SPC-202

CSX RAILWAY  
REVIEW PLANS







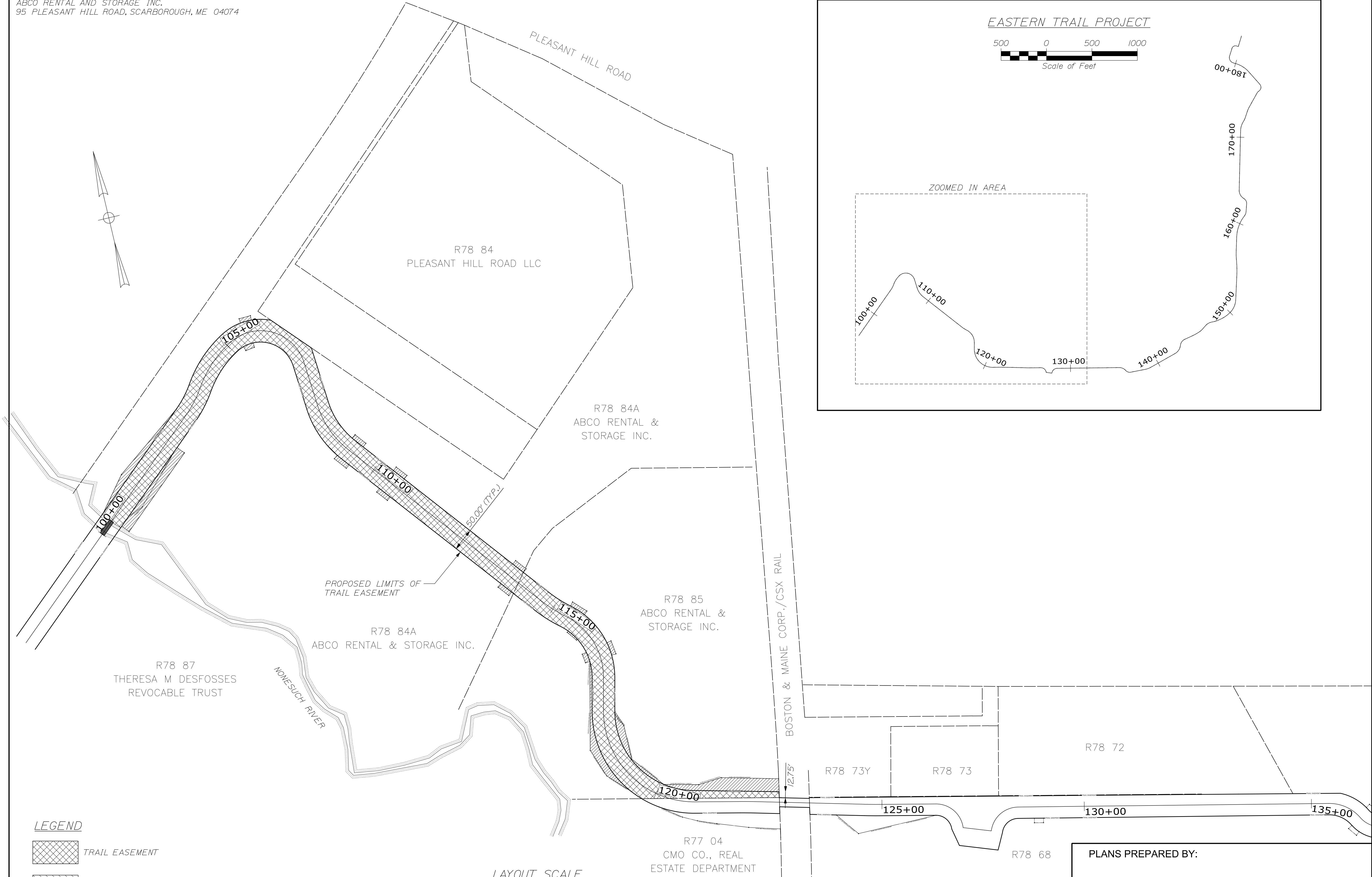
TRAIL EASEMENT AGREEMENT PLAN REGARDING:  
ABCO RENTAL AND STORAGE INC.  
95 PLEASANT HILL ROAD, SCARBOROUGH, ME 04074

Date: 3/15/2024

Username:

Division:

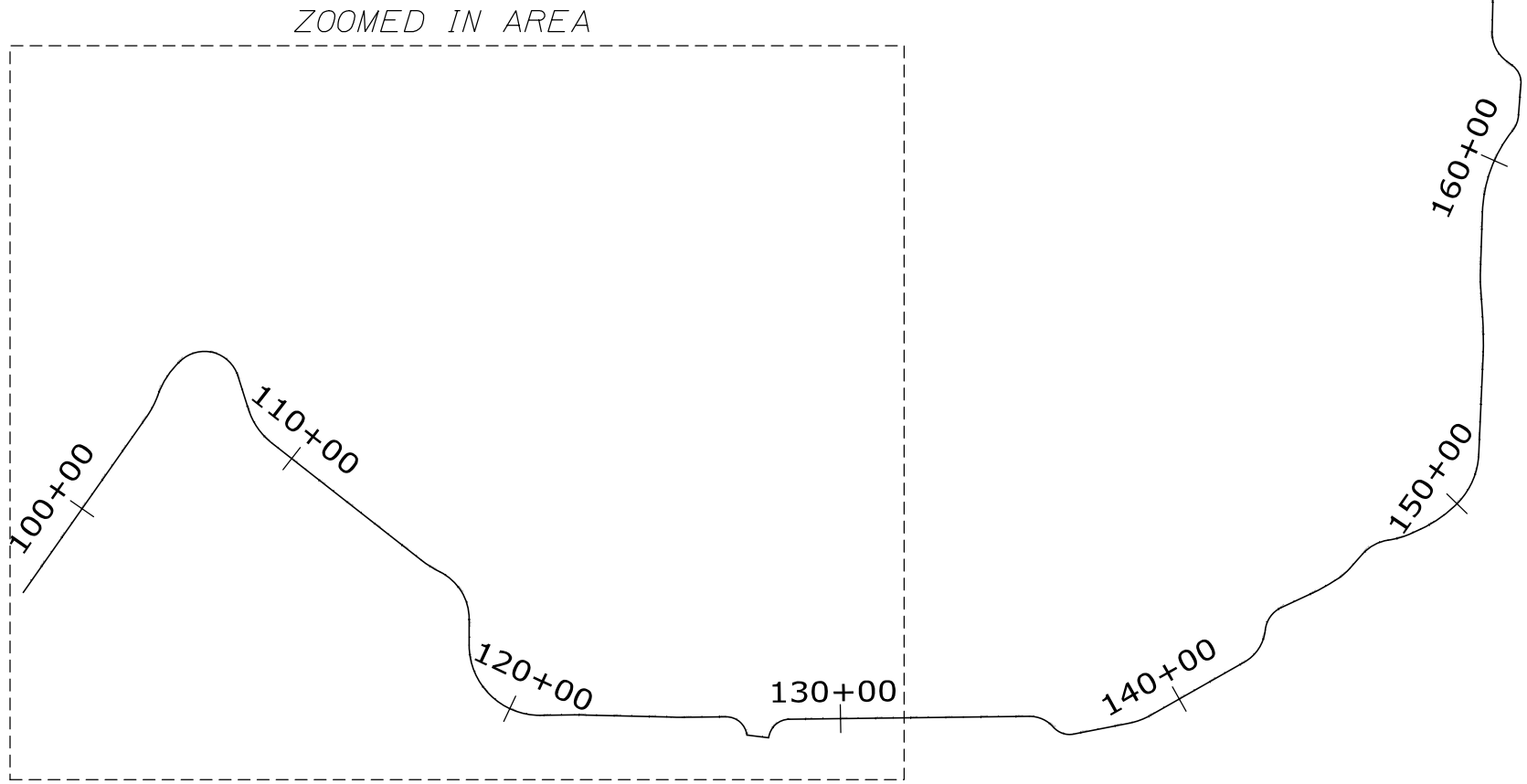
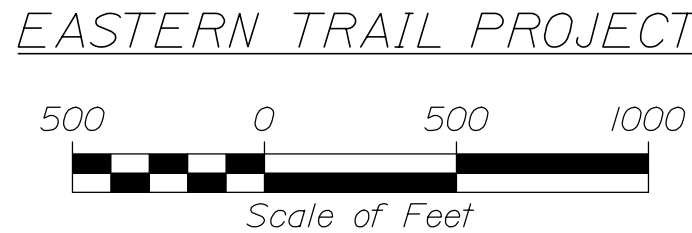
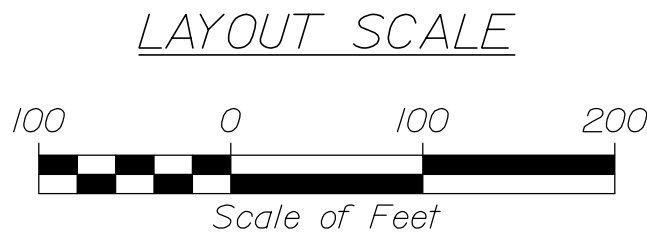
Filename: Sornborn\_Graphic.dgn



LEGEND

 TRAIL EASEMENT

 SLOPE, MAINTENANCE, AND DRAINAGE EASEMENT



Record Owner: ABCO Rental & Storage, Inc.  
Record Owner Address: 95 Pleasant Hill Road  
Scarborough, ME 04074

PLANS PREPARED BY:

**HNTB**  
HNTB CORPORATION

The HNTB Companies  
Engineers Architects Planners  
82 Running Hill Road, Suite 201  
South Portland, Maine 04106  
(207) 774-5155

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
AC-STP-1942(600)X & CMAQ-1942(610)		WIN	
19426.00 & 019426.10		HIGHWAY PLANS	
EXHIBIT PLAN FOR A		SIGNATURE	
TRAIL EASEMENT AGREEMENT BETWEEN		P.E. NUMBER	
ABCO RENTAL & STORAGE, INC.,		DATE	
THE TOWN OF SCARBOROUGH, AND			
THE EASTERN TRAIL MANAGEMENT DISTRICT			
SHEET NUMBER			
1			
OF 1			

Filename: 013\_TrailDetails II.dgn



Date:1/11/2019

Username:

Division:

Filename: 020\_TrailPlan06.dgn

ITEM 607.22 CEDAR RAIL FENCE LF  
STA. 171+50 LT. TO 177+00 LT. 544  
STA. 173+50 RT. TO 177+00 RT. 358

POLE OFFSET  
+6.3' FROM  
EDGE OF TRAIL

CURVE DATA #29  
PI = 171+28.23  
D = 28°38'52.4"  
Δ = 31°57'45.1" Rt.  
R = 200.00'  
L = 111.57'  
T = 57.28'  
E = 8.04'

CURVE DATA #30  
PI = 172+02.25  
D = 38°11'49.9"  
Δ = 14°58'56.9" Lt.  
R = 150.00'  
L = 39.22'  
T = 19.72'  
E = 1.29'

CURVE DATA #31  
PI = 173+25.39  
D = 19°05'54.9"  
Δ = 10°52'30.3" Rt.  
R = 300.00'  
L = 56.94'  
T = 28.56'  
E = 1.36'

CURVE DATA #32  
PI = 175+42.90  
D = 95°29'34.7"  
Δ = 27°55'59.1" Rt.  
R = 60.00'  
L = 29.25'  
T = 14.92'  
E = 1.83'

CURVE DATA #33  
PI = 176+15.50  
D = 114°35'29.6"  
Δ = 98°44'19.3" Lt.  
R = 50.00'  
L = 86.17'  
T = 58.27'  
E = 26.78'

CURVE DATA #34  
PI = 179+13.03  
D = 19°05'54.9"  
Δ = 31°47'52.9" Lt.  
R = 300.00'  
L = 166.49'  
T = 85.45'  
E = 11.93'

CURVE DATA #35  
PI = 180+87.74  
D = 95°29'34.7"  
Δ = 90°53'09.0" Rt.  
R = 60.00'  
L = 95.18'  
T = 60.93'  
E = 25.52'

CURVE DATA #36  
PI = 182+49.11  
D = 146°54'44.1"  
Δ = 88°33'23.9" Rt.  
R = 39.00'  
L = 60.28'  
T = 38.03'  
E = 15.47'

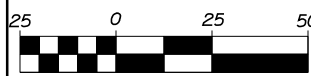
ITEM 609.11 VERTICAL CURB TYPE 1 LF  
STA. 181+17 LT. TO 182+11 LT. 96  
STA. 182+71 LT. TO 182+79 LT. 8

ITEM 609.12 VERTICAL CURB TYPE 1 - CIRCULAR LF  
STA. 182+11 LT. TO 182+71 LT. 70

ITEM 609.238 TERMINAL CURB TYPE 1 - 8 FOOT EA  
STA. 181+17 LT. 1  
STA. 182+79 LT. 1

GARY L. MAIETTA WAY ROADWAY  
CROSSING AT GRADE. SEE WAINWRIGHT  
COMPLEX CROSSING PLAN (SHEET 53) FOR  
MORE DETAIL

DRAFT PLANS  
JANUARY 11, 2019



STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
STP-1942600 & STP-1942610  
WIN  
19426.00 & 019426.10 HIGHWAY PLANS

PROJ. MANAGER	BILL REICH	BY	DATE
DESIGN-DETAILED	C. Helmick	P. Bishop	12/18
CHECKED-REVIEWED	L. Driscoll	J. O'Neil	12/18
DESIGN-DETAILED			
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

TOWN OF SCARBOROUGH  
EASTERN TRAIL CONNECTOR  
SCARBOROUGH TO SOUTH PORTLAND, MAINE  
TRAIL PLAN 6

SHEET NUMBER  
20  
OF 65

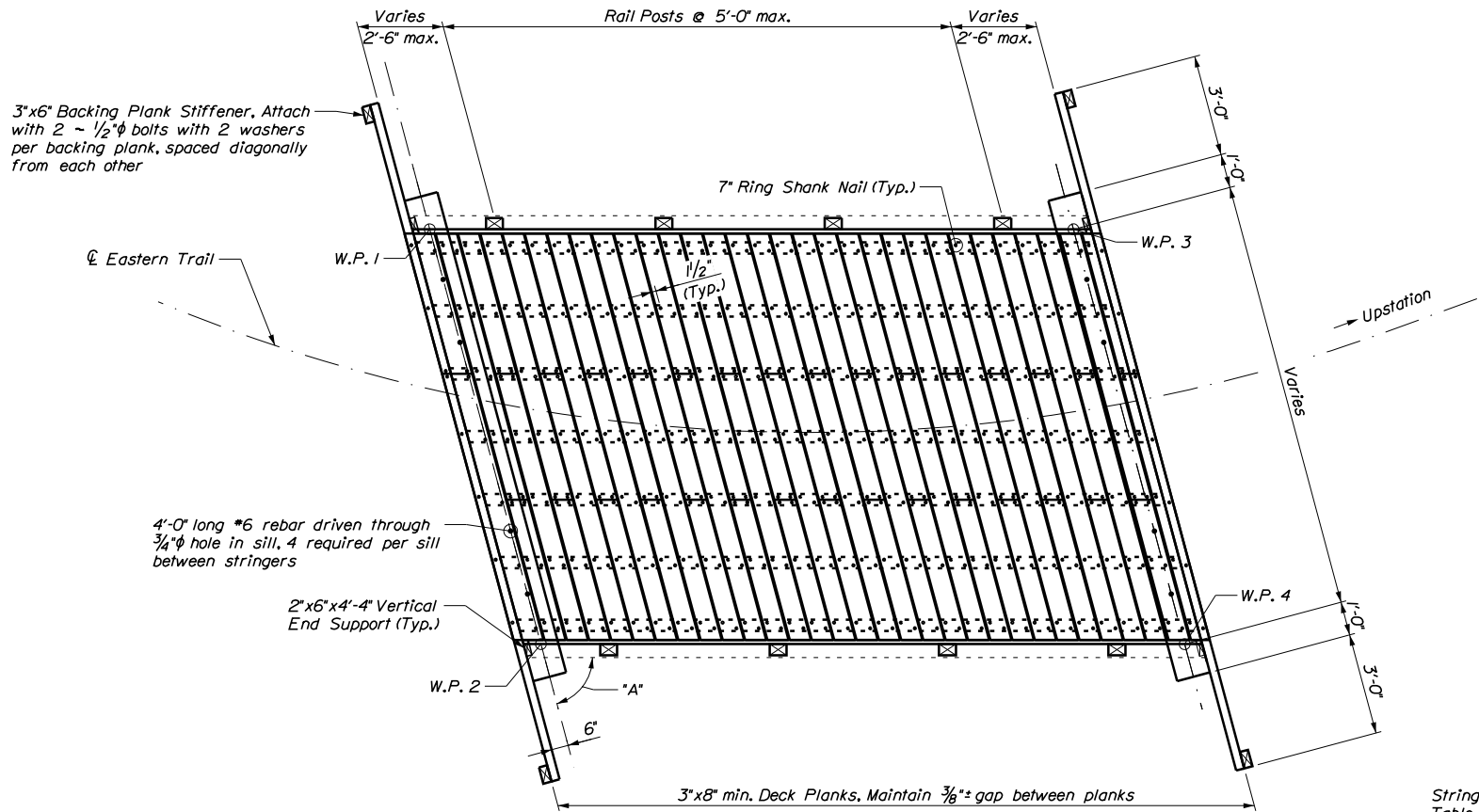


Date:1/11/2019

Username:

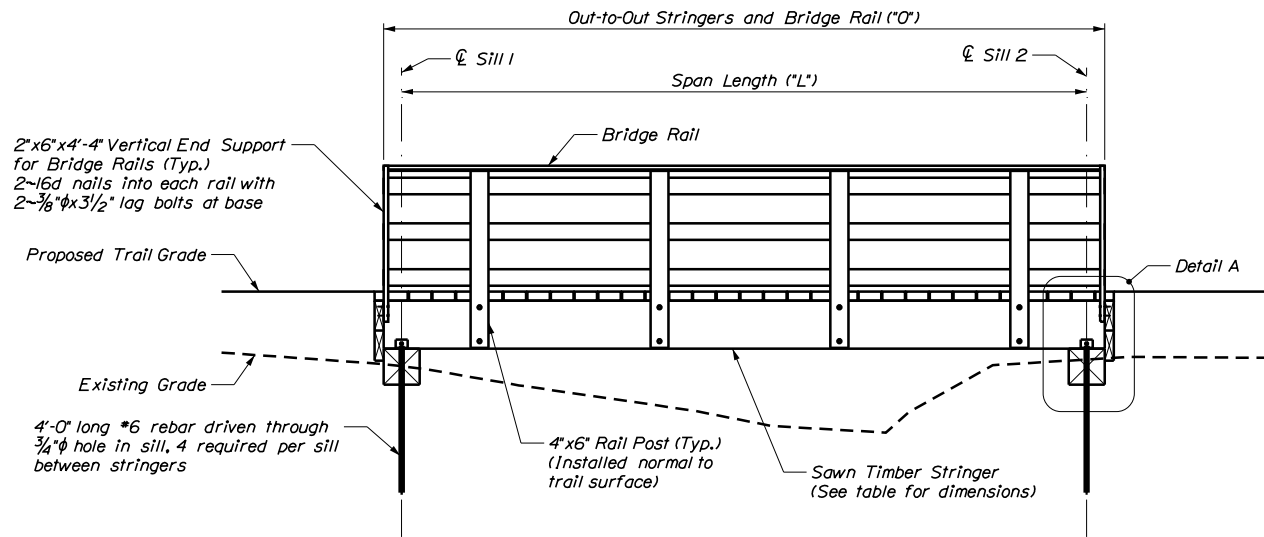
Division:

Filename: 00X\_Timber Bridge.dgn



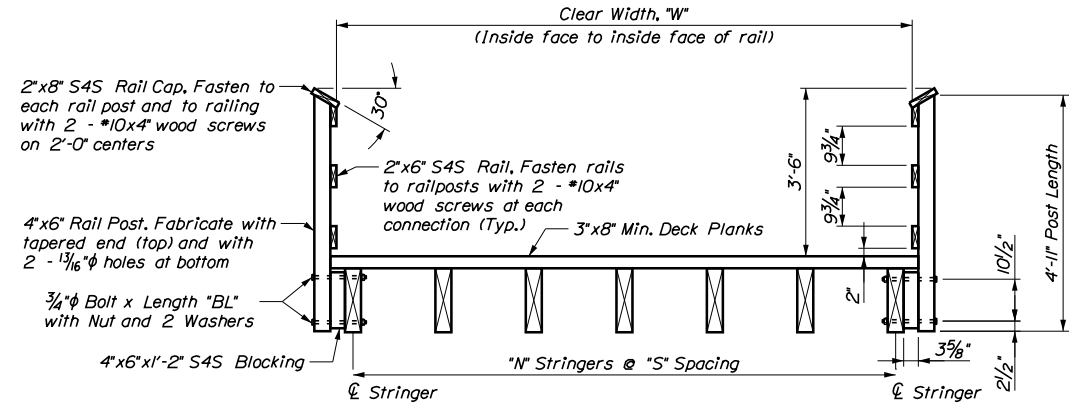
PLAN

(Trail bridge at station 176+25 shown, others similar)

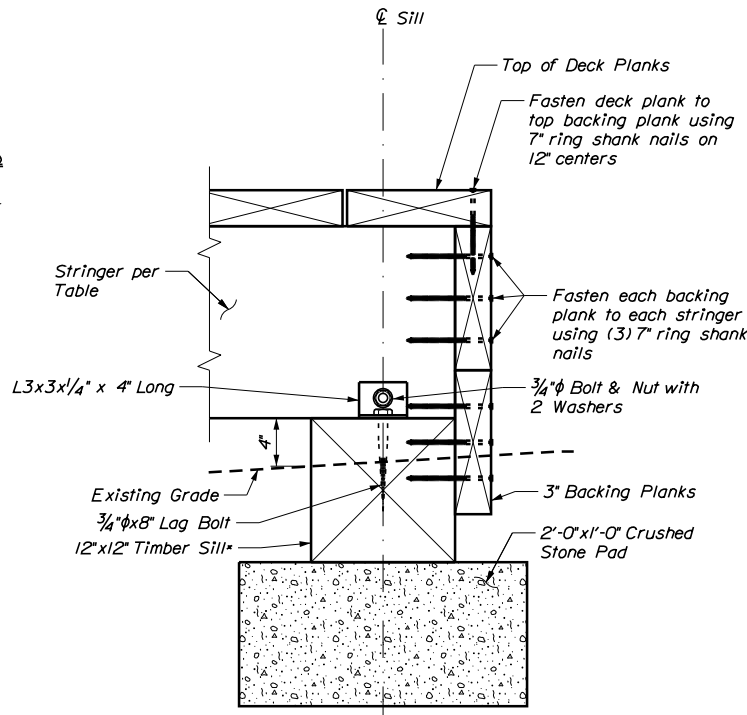


ELEVATION

(Skew not shown)



TYPICAL SECTION



DETAIL A  
TIMBER SILL CONNECTION DETAIL

(Rebar drift pin not shown for clarity)  
\*Timber sill can be either 12"x12" solid sawn or built-up 2"x12", 3"x12", 4"x12", and 6"x12" treated members.

NOTES:

1. Fasten deck planks to stringers with two rows of 3/16"x7" ring shank nails per plank at each stringer. Alternate centers.
2. Splice rails at posts. Rails shall be continuous for two post spaces. Do not locate more than one rail splice at any one bridge rail post.
3. Prebore lag bolt holes using two diameters, one for the shank and one for the threads. The lead hole for the shank is to be 1/16" larger than the shank diameter and is to be bored to the depth of penetration of the shank. The lead hole for the threaded portion is to be 70% of the bolt diameter as shown on the Plans and is to be bored at least to the length of the threads. Do not drive lag bolts with a hammer.

DRAFT PLANS  
JANUARY 11, 2019

Bridge	WPI (Sta. & Offset)	WP2 (Sta. & Offset)	WP3 (Sta. & Offset)	WP4 (Sta. & Offset)	L (Span Length)	O (Out-to-Out)	W (Clear Width)	A (Skew Angle)	N (* of Stringers)	S (Stringer Spacing)	Stringer Size	BL (Bolt Length)
Sta. 162+90.00	Sta. 162+69.57 6.06' Left	Sta. 162+80.89 5.83' Right	Sta. 163+01.15 8.04' Left	Sta. 163+07.16 7.17' Right	28'-0"	29'-1 3/4"	14'-0"	60°	8	1'-10 3/8"	6"x16"	15"
Sta. 174+25.00	Sta. 174+19.44 5.13' Left	Sta. 174+19.44 7.13' Right	Sta. 174+33.44 5.13' Left	Sta. 174+33.44 7.13' Right	14'-0"	15'-0"	12'-0"	90°	7	1'-10 5/8"	4"x12"	13"
Sta. 175+60.00	Sta. 175+48.67 4.95' Left	Sta. 175+44.63 7.10' Right	Sta. 175+73.65 4.75' Left	Sta. 175+68.59 6.85' Right	24'-0"	25'-0 1/2"	12'-0"	105°	7	1'-10 5/8"	6"x14"	15"
Sta. 176+25.00	Sta. 176+13.34 4.58' Left	Sta. 176+18.82 6.81' Right	Sta. 176+34.57 5.32' Left	Sta. 176+35.54 7.32' Right	19'-0"	20'-0 1/2"	12'-0"	75°	7	1'-10 5/8"	4"x16"	13"

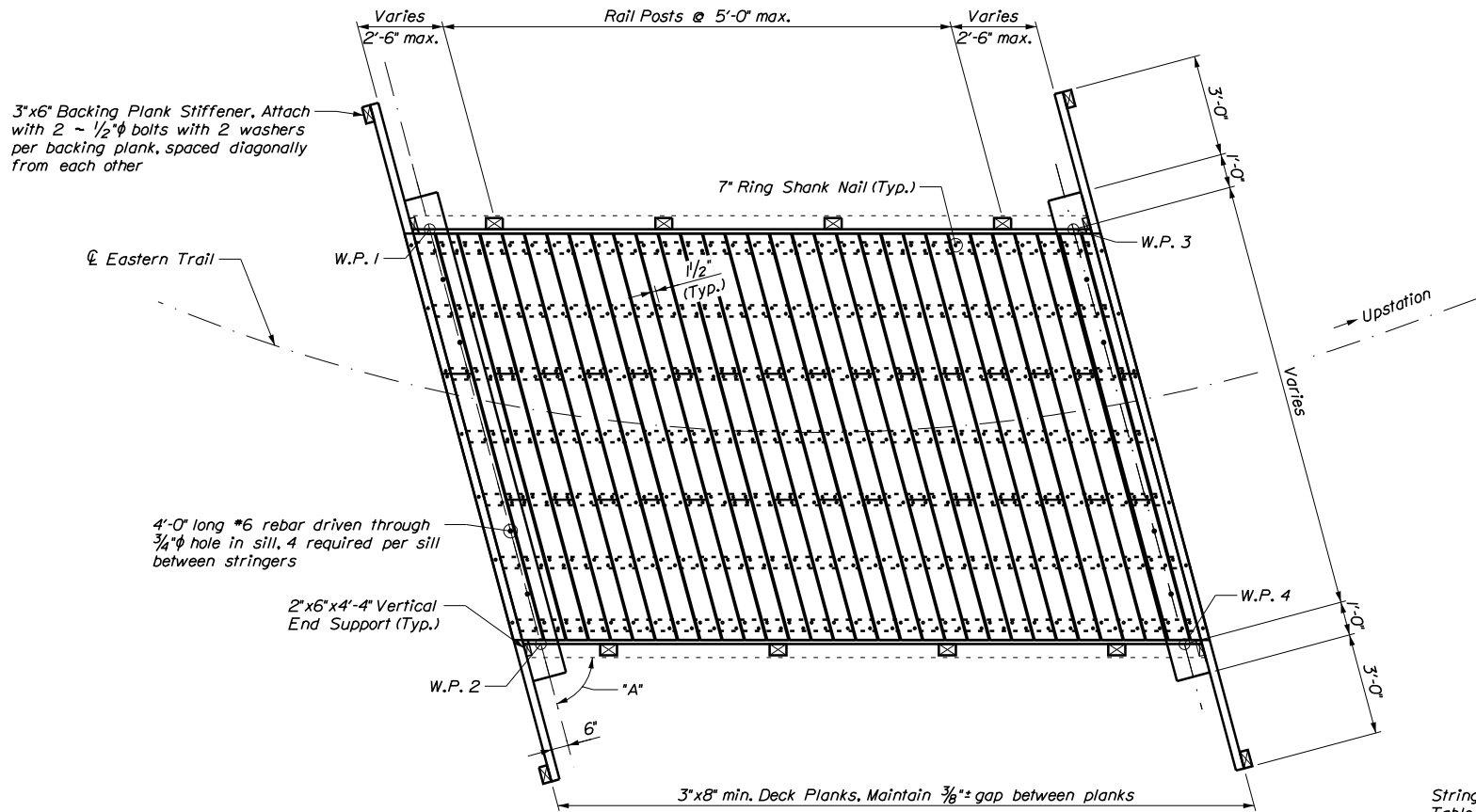
HNTB

Date:1/11/2019

Username:

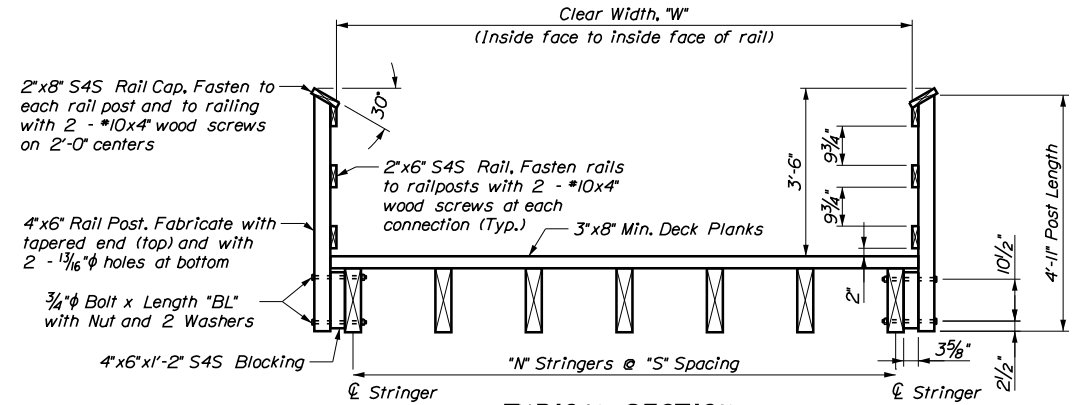
Division:

Filename: 00X\_Timber Bridge.dgn

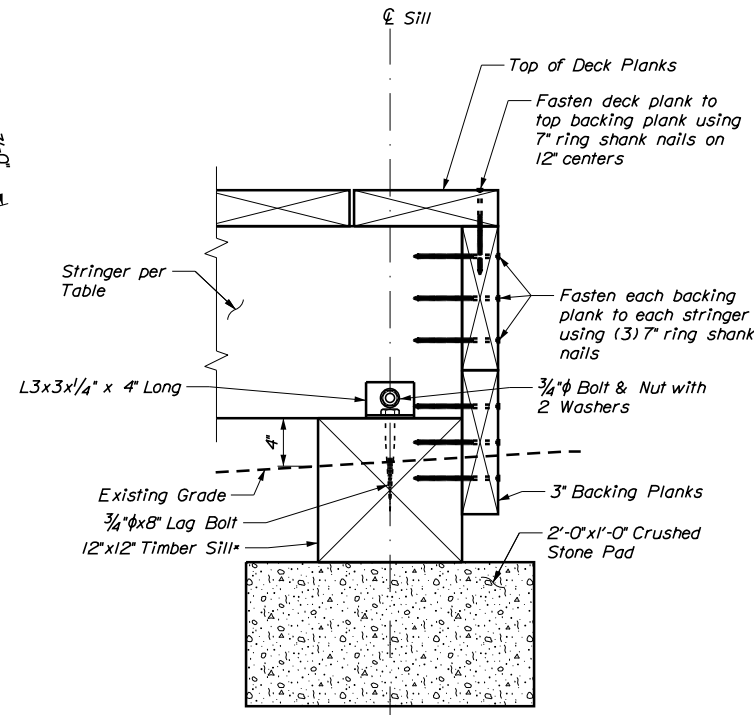


PLAN

(Trail bridge at station 176+25 shown, others similar)



TYPICAL SECTION

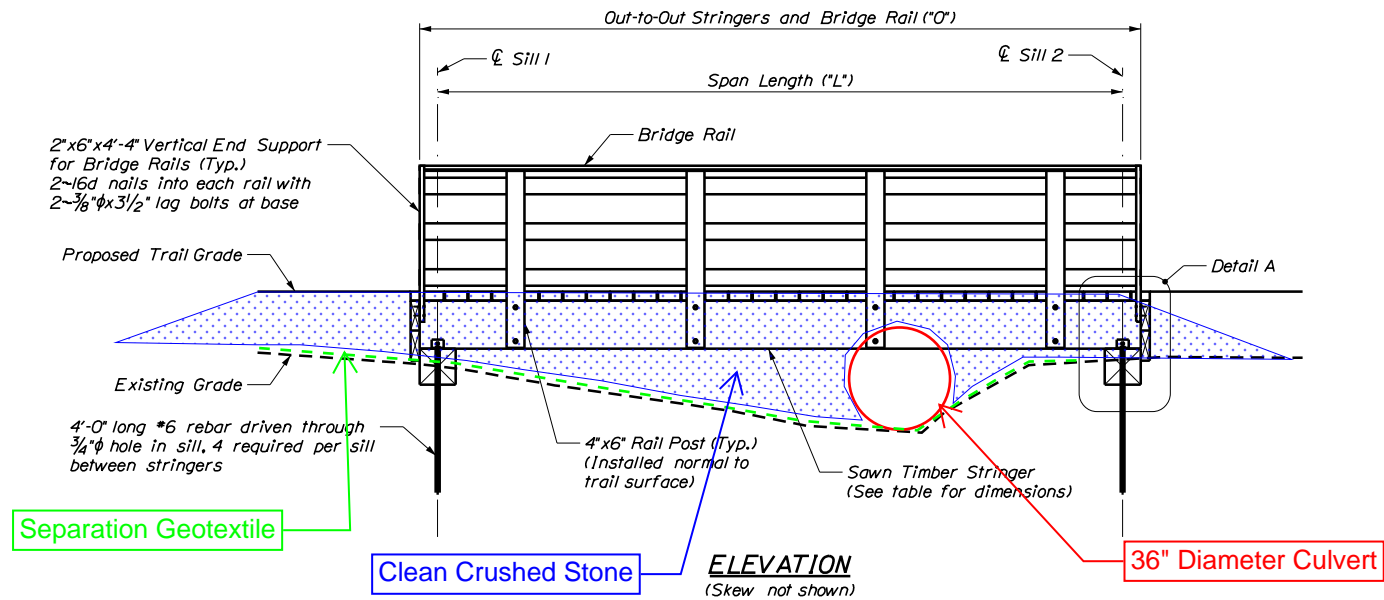


DETAIL A  
TIMBER SILL CONNECTION DETAIL

(Rebar drift pin not shown for clarity)  
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NOTES:

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Bridge	WPI (Sta. & Offset)	WP2 (Sta. & Offset)	WP3 (Sta. & Offset)	WP4 (Sta. & Offset)	L (Span Length)	O (Out-to-Out)	W (Clear Width)	A (Skew Angle)	N (* of Stringers)	S (Stringer Spacing)	Stringer Size	BL (Bolt Length)
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Sta. 174+25.00	Sta. 174+19.44 5.13' Left	Sta. 174+19.44 7.13' Right	Sta. 174+33.44 5.13' Left	Sta. 174+33.44 7.13' Right	14'-0"	15'-0"	12'-0"	90°	7	1'-10 5/8"	4"x12"	13"
Sta. 175+60.00	Sta. 175+48.67 4.95' Left	Sta. 175+44.63 7.10' Right	Sta. 175+73.65 4.75' Left	Sta. 175+68.59 6.85' Right	24'-0"	25'-0 1/2"	12'-0"	105°	7	1'-10 5/8"	6"x14"	15"
Sta. 176+25.00	Sta. 176+13.34 4.58' Left	Sta. 176+18.82 6.81' Right	Sta. 176+34.57 5.32' Left	Sta. 176+35.54 7.32' Right	19'-0"	20'-0 1/2"	12'-0"	75°	7	1'-10 5/8"	4"x16"	13"

DRAFT PLANS  
JANUARY 11, 2019

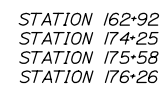
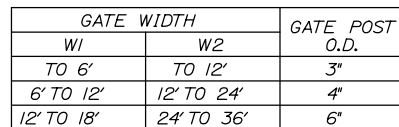
HNTB

PROJ. MANAGER	BILL RECH	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
DESIGN-DETAILED	C. Helmick	P. Bishop	12/18			
CHECKED-REVIEWED	L. Driscoll	J. O'Neil	12/18			
DESIGN-DETAILED						
REVISIONS 1						
REVISIONS 2						
REVISIONS 3						
REVISIONS 4						
FIELD CHANGES						

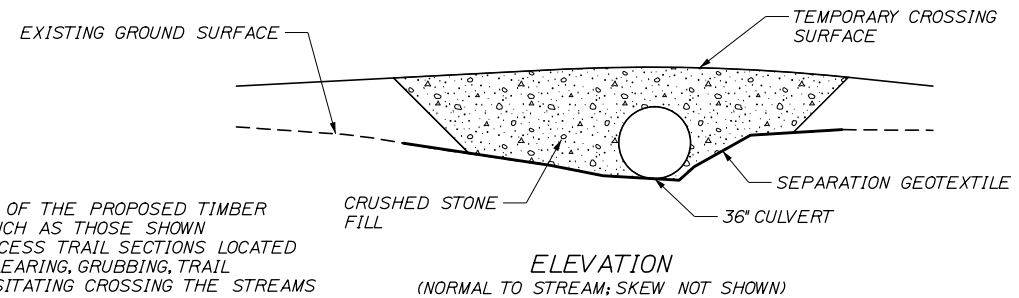
SHEET NUMBER

X

OF 65



3. PAYMENT FOR INSTALLATION AND REMOVAL OF TEMPORARY STREAM CROSSINGS WILL NOT BE MADE SEPARATELY AND WILL BE CONSIDERED INCIDENTAL TO RELATED CONTRACT ITEMS, INCLUDING TEMPORARY CULVERTS, CRUSHED STONE FILL, SEPARATION GEOTEXTILE, AND OTHER APPROVED MATERIALS AS WELL AS ALL LABOR AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.





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**Date**

10/22/18

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**To**

Stacie Grove, New earth Ecological

**Project  
Correspondence**

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**From**

Josh Olund, P.E., HNTB

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**Subject**

Eastern Trail, Scarborough to South Portland, ME

WIN's 019426.00 & 019426.10

Floodplain Impacts – Qualitative Assessment

**Introduction:**

This project proposes to construct a 1.6-mile section of the Eastern Trail extending between the Nonesuch River in Scarborough and the Wainwright recreational complex in South Portland to create a continuous trail between downtown Saco and Bug Light in South Portland. As shown on the attached plan sheet, a short section of the proposed trail, located approximately between STA 107+00 and 115+00, is situated along the perimeter of a Nonesuch River flood zone. Due to the minor floodplain impact, low trail profile, and low-budget project, hydraulic analyses were not performed. Alternatively, a qualitative approach to assessing floodplain impacts, specific to the noted station range, was incorporated and is discussed herein.

**Background:**

A review of available, effective FEMA Flood Insurance Rate Maps (FIRM's), dated June 19, 1985, found this crossing and section of trail to be located within a "Zone A" area, an area where flood elevations have not been formally established. A further review found a letter of map revision for a location along Route 1, approximately one-half mile upstream. This letter of map revision established a 100-year flood elevation of 12.1 feet (NAVD 88 datum). Approximately one-half mile downstream, the FIRM identifies a "Zone A2" area with a base flood elevation of EL 9 (NGVD 29 datum), or EL 9.74 when corrected to NGVD 88 datum.

Preliminary FEMA FIRM's, dated April 14, 2017, are also available for this project site and indicate this crossing and section of trail are within "Zone AE". Reported base flood elevations are EL 9 and EL 12 immediately upstream and downstream of the existing abutments and railroad bed, respectively, suggesting floodwaters are backwater controlled from tidal influence.

The Effective and Preliminary FIRM data are not in complete agreement, and the base flood elevation at this portion of the project site is ascertained to be between EL 9.74 and EL 12. To



provide a level of conservatism in the discussion and numeric values provided herein, the base flood elevation is taken as EL 12.0.

The proposed trail begins on the southwest side of the Nonesuch River, atop an existing railroad bed. From this point, the trail crosses the river with a proposed, prefabricated truss to be placed on existing abutments – no in-water work is planned for the construction of the bridge and the low-chord of the bridge is approximately 9-ft (EL. 21) above the FEMA reported base flood elevation. After crossing the river, the trail continues to the northeast along the existing railroad corridor until reaching an adjacent property line. At this point, the trail turns southwest, enters the flood zone, and runs along the periphery of the flood zone for approximately 800-ft. Through this section, the trail generally parallels the river flow, is approximately 2 to 3-ft above existing grade, and slightly above the base flood elevation.

Note the FEMA FRIM's suggest floodwaters cannot encroach upon the existing railroad corridor on either side of the proposed bridge, insinuating the existing topography is at a higher elevation than the flood elevations. For discussion and consistency with the apparent assumptions used in the development of the FIRM's, fill material placed along the existing railroad corridor, northeast of the bridge, is not considered a floodplain impact since it's presence appears to have already been considered in the development of the FIRM's and associated flood elevations.

#### **Discussion:**

Although the trail runs long the periphery of the flood zone, the proposed fill material will not behave as a levee by further constraining floodwaters. Five, 36-inch diameter equalizer pipes are planned beneath the trail surface within this section to connect wetland regions. These pipes will allow passage of water during storm events thereby maintaining wetlands and not changing the current floodplain limits. Additionally, relocating the trail further to the north, away from the flood zone delineation line, quickly increases impacts to field-delineated wetlands – the proposed alignment balances wetland and flood zone impacts.

The project proposes the placement of approximately 2,300-cy of fill at the edge of the flood zone resulting from an approximately 3-ft deep, 20-ft average width embankment. In comparison, the existing waterway volume in this same 800-ft section of trail and river is approximately 240,000-cy and the plan area of the flood zone is approximately 1,100,000-sf. The proposed fill material represents less than 1% of the storage volume available within the immediate reach of the river.

Conservatively assuming the flood zone plan view limits do not change with the proposed fill, that water elevations change linearly through added fill, and the benefits of the equalizer pipes are neglected, the base flood elevation could change by an estimated  $5/8$ ", which is negligible and outside general assumption and analysis tolerance. Additionally, since the flood elevation is seemingly backwater controlled from tidal fluctuations, impacts from the proposed fill would be balanced through a much longer reach of the river, beyond the "closed" 800-ft section of river and associated values provided above, resulting in a non-measurable change in base flood elevations.

**Conclusion:**

This proposed section of the Eastern Trail will include an 800-ft long section of trail to be placed at the edge of a FEMA-delineated flood zone. To minimize project costs, a qualitative assessment of impacts was incorporated in-lieu of a full hydrologic and hydraulic analysis. The proposed trail location was determined by balancing impacts to wetlands and the flood zone. Although fill material is placed within the flood zone, its impact to the base flood elevation is not measurable and floodwaters will be able to pass under the trail via equalizer pipes to promote continued function of the wetlands and not constrain floodwater spread.

**Attachments:**

Project Plan

Effective FEMA FIRM

Preliminary FEMA FIRM

## **ATTACHMENT 7 – CONSTRUCTION PLAN AND SCHEDULE**

Final designs were completed in December 2018 and updated in 2023. The transfer of Pan Am to CSX and subsequent resolution of access and easement permissions delayed the project. With the issuing of a quit claim deed by CSX, construction in some locations is expected to begin in fall of 2024, and be completed in the spring of 2026. All in-stream work will take place within the recommended timing windows. Tree removals in mature forested areas near the Nonesuch River will not be performed from May-July to avoid peak nesting periods for bats and many migratory birds. Major construction activities and Project schedule are identified in Table 2 below.

**Table 2. Eastern Trail Connector Project - Scarborough and South Portland, Maine Construction Schedule**

[illegible]

## **ATTACHMENT 8 – STORM WATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL PLAN**

The Town of Scarborough agrees to comply with the Stormwater Management and Erosion Control Standards outlined in Maine Construction General Permit (MCGP), and to meet the basic and general standards of Maine's Stormwater Management Rules.

To accomplish this, the attached Erosion and Sediment Control Plan sheets and Section 656 of MaineDOT's erosion and sediment control standards will be provided to contractors and implemented before any ground-disturbance to prevent unreasonable erosion of soil or sediment beyond the site or into a protected natural resource, such as a river, stream, brook, lake, pond, or wetland. The plan sheets identify the temporary physical, structural, and managerial practices that will be used to address stormwater, prevent soil erosion, and prevent or reduce the potential for sediment movement and discharge into protected natural resources and follows the recommendations and guidelines of MDEP's 2016, *Maine Erosion and Sediment Control Best Management Practices (BMPs): Manual for Designers and Engineers*. Measures will be maintained per Section 656 specifications and will remain in place and functional until the site is permanently stabilized.

Additionally, should any deviations from the attached plans be necessary, the selected contractor(s) will be required to submit an ESCP prior to construction for approval by the Town of Scarborough and their representatives. The plan will provide specifications for the installation and implementation of soil erosion and sedimentation control measures per MDEP's BMP's and the attached ESCP's, and will follow the practices outlined in MDEP's 2014, *Maine Erosion and Sediment Control Practices: Field Guide for Contractors*, while allowing flexibility to apply the most appropriate measures based on site-specific conditions, the construction sequence, timing, and weather.

The Town of Scarborough, or a delegated representative, will ensure that the procedures contained in the final approved ESCP are followed by regularly inspecting all work and requiring corrective action when necessary. The Town of Scarborough, or delegated representative, will ensure permanently installed stormwater and erosion-sediment control measures remain fully functional and will perform maintenance as needed per the attached inspection, housekeeping, and maintenance agreements from the Town of Scarborough and City of South Portland.



## SECTION 656 - TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL

656.1 Responsibility of the Contractor-Prepare and Follow Plan The Contractor shall provide continuous and effective temporary soil erosion and water pollution control for the Project that is appropriate to the construction means, methods and sequencing allowed by the Contract and selected by the Contractor. To do so, the Contractor shall prepare and submit a Soil Erosion and Water Pollution Control Plan (SEWPCP) and properly implement its approved SEWPCP. The Contractor shall have its SEWPCP approved, perform a preconstruction field review, and install and certify initial controls before commencing any Work, which could disturb soils or impact water quality.

If the Contractor properly implements its approved SEWPCP, then (1) any Work required in excess of that required by the SEWPCP will be Extra Work, (2) any Delay resulting from any such excess Work will be analyzed in accordance with Section 109.5 - Adjustments for Delay, and (3) the Contractor will not be responsible for damages relating to insufficient soil erosion and water pollution control including the cost of all environmental enforcement actions, penalties, or monetary settlements assessed any environmental regulatory entity and all costs incurred by or through the Department.

If the Contractor fails to prepare, submit, or seek approval of a SEWPCP or fails to properly implement its approved SEWPCP, then (1) the Department may suspend all Work, (2) the Department may withhold all Progress Payments or any portion thereof until the Contractor remedies all deficiencies; (3) the Department may remedy deficiencies with Departmental or contracted forces and deduct the cost thereof from payments otherwise due the Contractor; (4) any delay resulting from such failure or non-compliance will be a Non-excusable Delay; and (5) the Contractor will be responsible for all damages arising from or related to such failure or noncompliance including the cost of all environmental enforcement actions, penalties, or monetary settlements assessed by any environmental regulatory entity and all costs incurred by or through the Department including legal and consulting fees.

656.2 Submittal and Approval of the SEWPCP Within 21 calendar days of Contract Execution, the Contractor must submit two copies of its SEWPCP to the Resident.

Within 14 days of receipt, the Department will determine if the SEWPCP is in accordance with the Contract requirements and (1) notify the Contractor that the SEWPCP is approved or (2) return it for any needed revisions. If returned for revision, the Contractor must resubmit two copies of its revised SEWPCP as provided above within 7 days and the Department will have 7 days from receipt of the revised plan to notify the Contractor whether its SEWPCP is approved or again requires revision. Additional iterations will occur in a like manner until the Department approves the Contractor's SEWPCP. The Contractor must have its SEWPCP approved and implemented before commencing any Work, which could disturb soils or impact water quality.

## SEWPCP REQUIREMENTS

656.3.1 Qualifications of Preparer The preparer of the SEWPCP must be knowledgeable and experienced in erosion and pollution control and must (1) be a “DEP Certified Contractor” as designated by the Maine Department of Environmental Protection (MDEP), or (2) be licensed in Maine as a Professional Engineer, Landscape Architect, or Soil Scientist.

656.3.2 Standards The SEWPCP must be in accordance with all applicable laws, rules, regulations, permit requirements and conditions, this specification, all other contractual provisions, and the latest version of Department’s “Best Management Practices for Erosion & Sedimentation Control” (the “BMP Manual”). In the event of conflicting provisions, the SEWPCP must utilize the more restrictive requirements.

656.3.3 General SEWPCP Elements In addition to other requirements provided for or referenced in this specification, the SEWPCP must include the following elements.

- a. The name and qualifications of the person preparing the SEWPCP.
- b. The name of the on-site person, the “Environmental Coordinator”, responsible for implementation of the SEWPCP, who must be the Prime Contractor's Superintendent or other supervisory employee with the authority to immediately remedy any deficient controls, with their phone number and emergency number (personal cellular phone or pager).
- c. The schedule and sequence of all activities that involve soil disturbance including work on sites outside the right-of-way such as borrow pit operations, haul roads, staging areas, equipment storage sites, mixing plants, and Waste Areas including expansion of existing sites.
- d. Incorporation of permanent erosion and sedimentation control features into the project at the earliest practicable time.
- e. Identification of steep slopes and highly erodible soils, with the method and frequency of soil stabilization. Temporary slope stabilization is required on a daily basis. Permanent slope stabilization measures shall be applied within one week of the last soil disturbance.
- f. Emergency procedures for storms, including availability of Materials and procedures and time frames for corrective action if controls fail.
- g. If water is flowing within the drainage system, the water shall be diverted to a stable area or conduit and work shall be conducted in the dry. The Contractor’s plan shall address when and where the diversions will be necessary
- h. Type and location of all temporary erosion and sedimentation control measures.

Temporary winter stabilization must be used between November 1<sup>st</sup> and April 1<sup>st</sup>, or outside of said time period if the ground is frozen or snow covered. Temporary winter stabilization involves, at a minimum, covering all disturbed soils and seeded ground that is not “Acceptable Work” with an approved method other than using unanchored hay or straw mulch. Such other methods may include the use of Erosion Control Mix or other covers that are not susceptible to erosion or wind movement, as described within the “Winter Stabilization” section of the most recent MaineDOT BMP Manual. If temporary winter stabilization practices are used, spring procedures for permanent stabilization shall also be described in the SEWPCP. Use of these methods for overwinter temporary erosion control will be incidental to the contract and be paid for as part of Pay Item 656.75

i. Mulching type and frequency of application for disturbed soil areas. Newly disturbed earth shall be mulched by the end of each workday. Mulch shall be maintained on a daily basis. All disturbed ditches/slopes shall be stabilized by the end of each workday. Stabilization shall be maintained on a daily basis. Erosion control blanket shall be installed in the bottoms of all ditches except where a stone lining is planned or otherwise stated in the contract document. Seed shall be applied prior to the placement of the blanket.

j. Location and frequency of application of temporary seeding. Permanent seeding shall be performed in accordance with the most current 618 specification, unless otherwise stated in the contract document.

k. Description of all dust control procedures for roadways, haul roads, work areas, and all other contractor activities.

l. Location and method of temporary erosion and sediment control for existing and proposed catch basins and all other drainage inlet and outlet areas. Culvert inlet and outlet protection shall be installed within 48 hours of culvert installation, or prior to a storm event, whichever is sooner.

m. Describe all in-stream work, with timing and plans for temporary stream diversions and cofferdams. Water flow must be maintained at all times unless otherwise stated in the contract document.

n. Describe the design, location, and plans for sedimentation basins used for dewatering cofferdams. If a cofferdam sedimentation basin is used, it shall be located in an upland area where the water can settle and sink into the ground or be released slowly to the resource in a manner that will not cause erosion. The location of such a cofferdam sedimentation basin shall be addressed in the SEWPCP.

o. Inspection and maintenance schedules for all erosion and water pollution control measures - temporary and permanent - including the method, frequency and disposal location for sediment removal.

p. Demolition debris (including debris from wearing surface removal, saw cut slurry, dust, concrete debris, etc.) shall be contained and shall not be allowed to discharge to any resource. All demolition debris shall be disposed of in accordance with Standard Specifications, Section 202.03, Removing Existing Superstructure, Structural Concrete, Railings, Curbs, Sidewalks and Bridges. Containment and disposal of demolition debris shall be addressed in the Contractor's SEWPCP

q. Procedures for removal of temporary erosion and pollution controls.

656.3.4 Water Pollution Control Requirements In addition to other requirements provided for or referenced in this specification, the SEWPCP must include all of the following requirements applicable to water pollution control.

a. The Contractor must comply with the applicable federal, state, and local laws, and regulations relating to prevention and abatement of water pollution.

b. Except as allowed by an approved permit or otherwise authorized by the Department in writing, pollutants and construction debris including excavated material, aggregate, residue from cleaning, sandblasting, or painting, cement mixtures, chemicals, fuels, lubricants, bitumens, raw sewage, wood chips, and other debris shall not be discharged into waterbodies, wetlands, or natural or man-made channels leading thereto and such materials shall not be located alongside waterbodies, wetlands, or such channels such that it will be washed away by high water or runoff.

c. Construction operations in waterbodies or wetlands shall be restricted to the construction limits shown on the plans and to those areas that must be entered for the construction of temporary or permanent structures, except as allowed by approved permit or otherwise authorized by the Department in writing.

d. Mechanized equipment shall not be operated in waterbodies or wetlands, except as allowed by approved permit or otherwise authorized by the Department in writing.

e. Upon completion of the work, waterbodies or wetlands shall be promptly cleared of all falsework, piling, debris or other obstructions caused by the construction operations, except as otherwise authorized by the Department in writing.

f. Spill Prevention If the Work includes the handling, use, or storage of petroleum products or hazardous Matter/Substances including the onsite fueling of Equipment, the SEWPCP must include a Spill Prevention Control and Countermeasure Plan (SPCCP). At a minimum, the SPCCP must include:

1. The name and emergency response numbers (telephone number, cellular phone and pager numbers, if applicable) of the Contractor's representative responsible for spill prevention and response;
2. General description and location of (1) handling, transfer, storage, and

containment facilities of such products or hazardous Matter/Substances ("activities and facilities") and (2) potential receptors of such products or hazardous Matter/Substances including oceans, lakes, ponds, rivers, streams, wetlands, and sand and gravel aquifers ("sensitive resources") including the distances between said activities and facilities and said sensitive resources;

3. Description of preventative measures to be used to minimize the possibility of a spill including Equipment and/or Materials to be used to prevent discharges including containment and diversionary structures, inspections and personnel training;

4. A contingency response plan to be implemented if spill should occur including a list of emergency phone/pager numbers including the Contractor's representative, MDEP

Spill Response, the National Response Center (if spill enters the water), the Resident, and local police and fire authorities, a list of emergency response equipment and locations and a description of the capabilities of the equipment, a description of the general response and clean up protocols by product or Matter/Substances and an overview of the verbal and written notification procedures for federal, state and local officials. For a related provision, see 105.2.2 - "Project Specific Emergency Planning".

For a related provision, see Section 105.8.3 - "Wetland and Waterbody Impacts".

656.3.5 Material Requirements Unless otherwise approved by the Department, the Contractor must use temporary erosion control Materials contained on the Department's Preapproved List of Erosion Control Materials if such a list is established, the Department's latest BMP Manual, or Section 717 - Roadside Improvement Materials.

656.3.6 Construction Requirements In addition to other requirements provided for or referenced in this specification, the SEWPCP must include all of the following requirements applicable during construction.

- a. The Contractor shall install and maintain all temporary erosion control Materials in accordance with the manufacturer's recommendations, or the Department's latest BMP's or Standard Specifications where applicable.
- b. The Contractor shall perform in-stream work during low flow conditions, except as allowed by a specific Permit requirement. During in-stream work, the Contractor shall maintain water flow at all times except in ponded water or where specifically authorized. The Contractor, to the maximum extent practicable, shall place pipes in dry conditions.
- c. The Contractor, to the maximum extent practicable, shall install temporary and permanent erosion control measures prior to conducting clearing and grubbing operations. Clearing shall be minimized as shown on the design plans (if provided). The Contractor shall not conduct clearing operations within any protected vegetative buffer area indicated in the plans, notes, or special provisions. The Contractor shall limit excavation, borrow and embankment operations commensurate with its capability and progress in keeping the



finish grading, mulching, seeding, and other such temporary and permanent erosion control measures current in accordance with its schedule. Should seasonal limitations make such coordination impractical, temporary erosion control measures shall be provided immediately.

d. The Contractor shall not work in a wetland, except as allowed by a specific permit provision. All equipment which must work in a wetland shall travel and work on platforms or mats that protect vegetation which the Department has designated to remain. The Contractor shall not store or stockpile materials in a wetland. The Contractor shall contain and immediately remove from the wetland or waterbody any debris generated by the Work.

e. The Contractor shall not place uncured concrete directly into a waterbody. The Contractor shall not wash tools, forms, or other items in or adjacent to a waterbody or wetland. Prior to release to a natural resource, any impounded water that has been in contact with concrete placed during construction must have a pH between 6.0 and 8.5, must be within one pH unit of the background pH level of the resource and shall have a turbidity no greater than the receiving resource. This requirement is applicable to concrete that is placed or spilled (including leakage from forms) as well as indirect contact via tools or equipment. Water not meeting release criteria shall be addressed in the SEWPCP. Discharging impounded water to the stream must take place in a manner that does not disturb the stream bottom or cause erosion. The Contractor shall be responsible for monitoring pH with a calibrated meter accurate to 0.1 units. A record of pH measurements shall be kept in the Environmental Coordinator's log.

f. The Contractor shall contain all demolition debris (including debris from wearing surface removal, saw cut slurry, dust, etc.) and shall not allow it to discharge to any resource. All demolition debris shall be disposed of in accordance with Section 202.03 – Removing Existing Superstructure, Structural Concrete, Railings, Curbs, Sidewalks and Bridges. The Contractor shall dispose of debris in accordance with the Maine Solid Waste Law, Title 38 M.R.S.A., Section 1301 et. seq. Containment and disposal of demolition debris shall be addressed in the Contractor's SEWPCP.

g. The Contractor shall air dry all treated lumber for at least 21 days before use. All treated timber surfaces shall be exposed during air-drying.

h. The Contractor shall place all permanent seeding in accordance with Section 618 - Seeding unless the Contract states otherwise. The Contractor shall state what additional measures they will employ for soil stabilization between November 1<sup>st</sup> and April 1<sup>st</sup>.

i. The Contractor shall not remove rocks from below the normal high water line of any wetland, great pond, river, stream, or brook, except to the extent necessary for completion of the Work and as allowed by environmental permits. The Contractor shall not work below the high water line of a great pond, river, stream, or brook during periods of elevated water, except as necessary to protect work in progress or for emergency flood control and as

allowed by environmental permits.

j. During periods of approved suspension, the Contractor shall inspect and maintain temporary and permanent erosion controls in accordance with its approved SEWPCP.

k. All sites of disturbed soil outside the right-of-way such as haul roads, staging areas, Equipment storage sites, mixing plants, and waste disposal sites including expansion of existing sites shall be graded smooth, loamed, seeded, and mulched upon completion of the work. For a related provision, see Section 105.8.6 - Pit Requirements.

## IMPLEMENTATION OF SEWPCP

656.4.3 Follow Plan Until Acceptance of the Work, the Contractor must continuously provide soil erosion and water pollution controls in compliance with its approved SEWPCP as amended, if necessary, and in compliance with Section 656.4.5 - Additional Measures/Amendment of SEWPCP.

656.4.4 Inspection and Record Keeping The Environmental Coordinator must inspect and monitor all controls for the duration of the project and keep a written log. This log must include daily on-site precipitation and air temperature, as well as the performance, failure, and any corrective action for all controls in place. The log must be updated at least weekly and after all significant storm runoff and flood events. The Environmental Coordinator must make this log available to the Department upon request. The Contractor will retain the log for three years after the completion of the project.

656.4.5 Additional Measures/Amendment of SEWPCP If there exists observable evidence of erosion or sedimentation despite the installation of all controls in compliance with the Contractor's approved SEWPCP, then the Contractor must undertake such additional measures as are necessary to stop such erosion and prevent further erosion or sedimentation. Observable evidence of erosion or sedimentation includes visible sheet, rill, or gully erosion, discoloration of water by suspended particles, areas of sediment accumulation, slumping of banks, deposition of soil, and visible dust. Such additional measures must be undertaken within 24 hours and completed within 48 hours from the time such evidence is observed, unless otherwise authorized by the Department. Within 7 days of that time, the Contractor must submit an amendment to its SEWPCP setting forth the apparent cause of the erosion or sedimentation and the additional measures undertaken and that will continue to be undertaken. If the Contractor complies with the requirements of this Section, all additional measures and the amendment of the SEWPCP will be Extra Work and any Delay resulting from the additional measures will be analyzed in accordance with Section 109.5 - Adjustments for Delay.

656.4.6 Duration of Contractor's Responsibility The Contractor shall provide temporary soil erosion and water pollution controls in compliance with its SEWPCP and maintain all permanent control features until Acceptance of the Work. Once final surface treatments are established, the Contractor is responsible for removal of all temporary sedimentation control practices such as silt fence. Notwithstanding the preceding sentence, all work needed to remedy

damage to properly installed and maintained permanent control features caused by a weather related Uncontrollable Event shall be Extra Work.

## PAYMENT

656.5.1 If Pay Item 656.75 Provided If the Schedule of Items contains Pay Item 656.75 for Temporary Soil Erosion and Water Pollution Control, payment will be made on a Lump Sum basis, payment of which will constitute full and complete compensation for all labor, equipment, materials, inspection, professional services, and incidentals necessary to prepare, submit, obtain approval of, and properly implement the Contractor's SEWPCP. The Lump Sum will be payable in installments as follows: 10% of the Lump Sum once the final SEWPCP is approved and the initial soil erosion and water pollution controls are in place and certified by the Contractor, with the 90% balance to be paid as the Work progresses at a rate proportional to the percentage completion of the Contract.

Failure by the Contractor to follow Standard Specification or Special Provision - Section 656 and/or the Contractor's own Soil Erosion and Water Pollution Control Plan (SEWPCP) will result in a violation letter and a reduction in payment as shown in the schedule below. The Department's Resident or any other representative of The Department reserves the right to suspend the work at any time and request a meeting to discuss violations and remedies. The Department shall not be held responsible for any delay in the work due to any suspension under this item.

ORIGINAL CONTRACT AMOUNT		Amount of Penalty Damages per Violation		
From	Up to and	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup> & Subsequent
More Than	Including			
\$0	\$1,000,000	\$250	\$500	\$1,250
\$1,000,000	\$2,000,000	\$500	\$1,000	\$2,500
\$2,000,000	\$4,000,000	\$1,000	\$2,000	\$5,000
\$4,000,000	and more	\$2,000	\$4,000	\$10,000

Cofferdams and related temporary soil erosion and water pollution controls are incidental to the Pay Item 656.75, unless a specific pay item for cofferdams is included in the Schedule of Items. If a specific pay item for cofferdams is included, then related temporary soil erosion and water pollution controls, including inspection and maintenance, are incidental to the pay item for cofferdams.

656.5.2 If No Pay Item If Pay Item 656.75 is not provided in the Schedule of Items, then the cost related thereto shall be Incidental to the Contract.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
656.75 Temporary Soil Erosion and Water Pollution Control	Lump Sum

SECTION 657 - REHABILITATION OF PITS  
Reserved

SECTION 658 - ACRYLIC LATEX COLOR FINISH

658.01 Description This work shall consist of applying a color finish to asphaltic or Portland cement concrete surfaces designated on the plans for median strips, islands, and certain crosswalks, color-coated with an acrylic latex finish system.

658.02 Materials The color finish shall be a green acrylic latex emulsion type, containing only inert mineral pigment colorants, fade-resistant for exterior use. The color coating shall contain insoluble mineral fillers suitable for uniform application, tack free, and shall show no deterioration due to temperature, salts, moisture, and ultraviolet rays of sun for a period of at least one year.

Only materials on the Qualified Products List for acrylic latex color finish shall be used.

658.03 Surface Preparation The bituminous or Portland cement concrete shall be carefully laid, free of depressions and ridges and at the pitch or grade shown on the plans to provide flow of water from the surface. The pavement shall be free of all loose dirt, dust particles, grease, oil,

Date:9/28/2018

Username:

Division:

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EROSION CONROL NOTES:

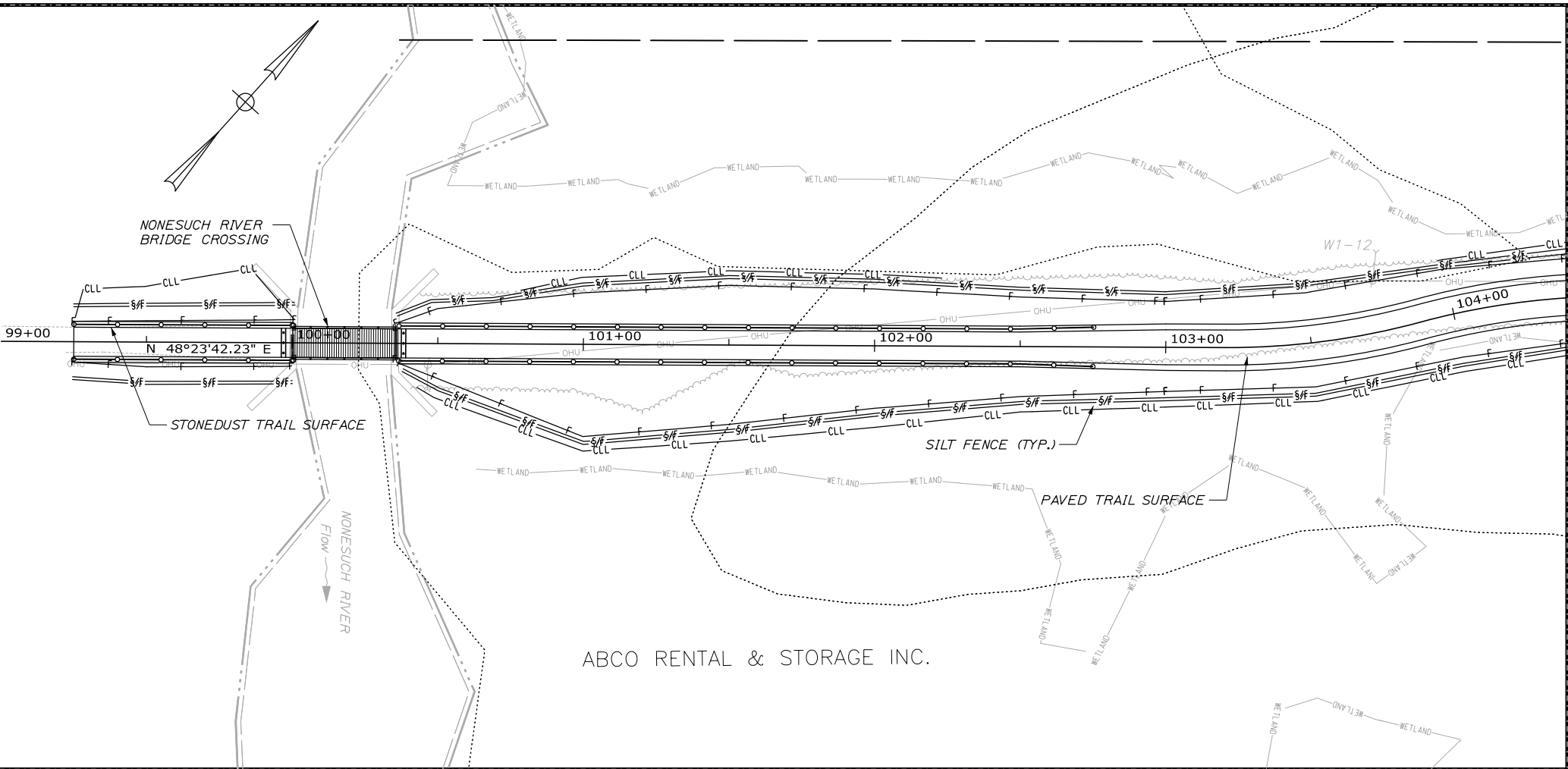
1. WHENEVER PRACTICABLE, NO DISTURBANCE ACTIVITIES SHOULD TAKE PLACE WITHIN 50 FEET OF ANY NATURAL RESOURCE. IF DISTUBANCE ACTIVITIES TAKE PLACE BETWEEN 30 AND 50 FEET OF ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED. IF DISTURBANCE ACTIVITIES TAKE PLACE LESS THAN 30 FEET FROM ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE NATURAL RESOURCE, PERIMETER EROSION MUST BE DOUBLED AND DISTURBED AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 7 DAYS.

2. PRIOR TO CONSTRUCTION, PROPERLY INSTALL SEDIMENT BARRIERS AT THE DOWNGRAIENT EDGE OF ANY AREA TO BE DISTURBED AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE DISTURBED AREA. SEDIMENT BARRIERS SHOULD BE INSTALLED DOWNGRAIENT OF SOIL OR SEDIMENT STOCKPILES AND STORMWATER PREVENTED FROM RUNNING ONTO THE STOCKPILE. MAINTAIN THE SEDIMENT BARRIERS BY REMOVING ACCUMULATED SEDIMENT, OR REMOVING AND REPLACING THE BARRIER, UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. WHERE A DISCHARGE TO A STORM DRAIN INLET OCCURS, IF THE STORM DRAIN CARRIES WATER DIRECTLY TO A SURFACE WATER AND YOU HAVE AUTHORITY TO ACCESS THE STORM DRAIN INLET, YOU MUST INSTALL AND MAINTAIN PROTECTION MEASURES THAT REMOVE SEDIMENT FROM THE DISCHARGE.

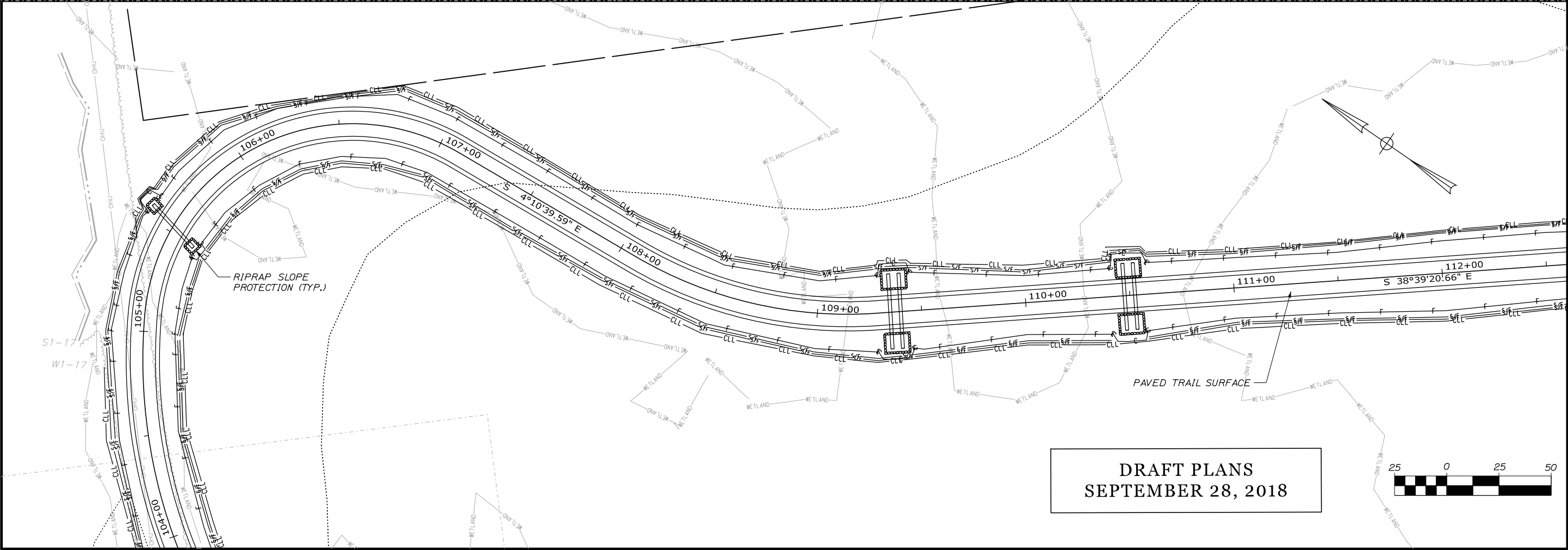
3. PRIOR TO CONSTRUCTION, PROPERLY INSTALL A STABILIZED CONSTRUCTION ENTRANCE (SCE) AT ALL POINTS OF EGRESS FROM THE SITE. THE SCE IS A STABILIZED PAD OF AGGREGATE, UNDERLAIN BY GEOTEXTILE FABRIC, USED TO PREVENT TRAFFIC FROM TRACKING MATERIAL AWAY FROM THE SITE ONTO PUBLIC RIGHT OF WAYS. MAINTAIN THE SCE UNTIL ALL DISTURBED AREAS ARE STABILIZED.

4. WITHIN 7 DAYS OF THE CESSATION OF CONSTRUCTION ACTIVITIES IN AN AREA THAT WILL NOT BE WORKED ON FOR MORE THAN 7 DAYS, STABILIZE ANY EXPOSED SOIL WITH MULCH, OR OTHER NON ERODIBLE COVER. STABILIZE AREAS WITHIN 75 FEET OF A WETLAND OR WATERBODY WITHIN 48 HOURS OF THE INITIAL DISTURBANCE OF THE SOIL OR PRIOR TO ANY STORM EVENT, WHICHEVER COMES FIRST.

5. ALL WORK SHALL CONFORM TO MAINEDOT STANDARD DETAILS, SPECIFICATION 656, AND THE MAINEDOT BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENTATION CONTROL MANUAL.



ABCO RENTAL & STORAGE INC.



DRAFT PLANS  
SEPTEMBER 28, 2018

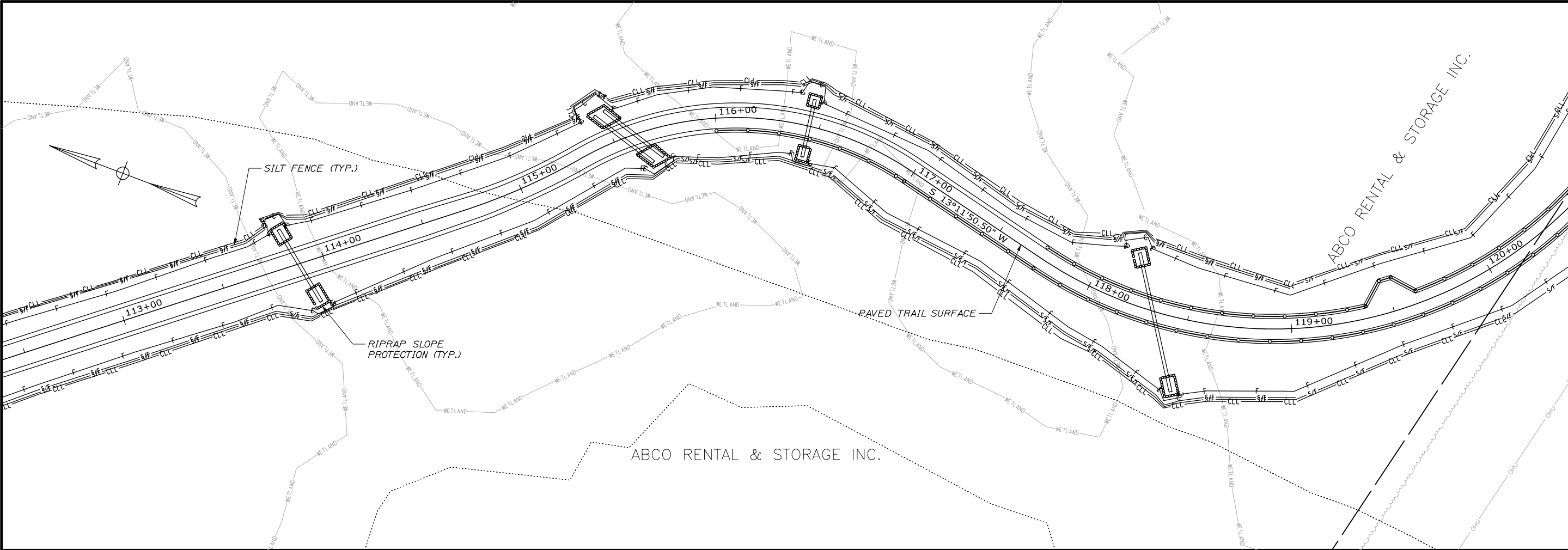
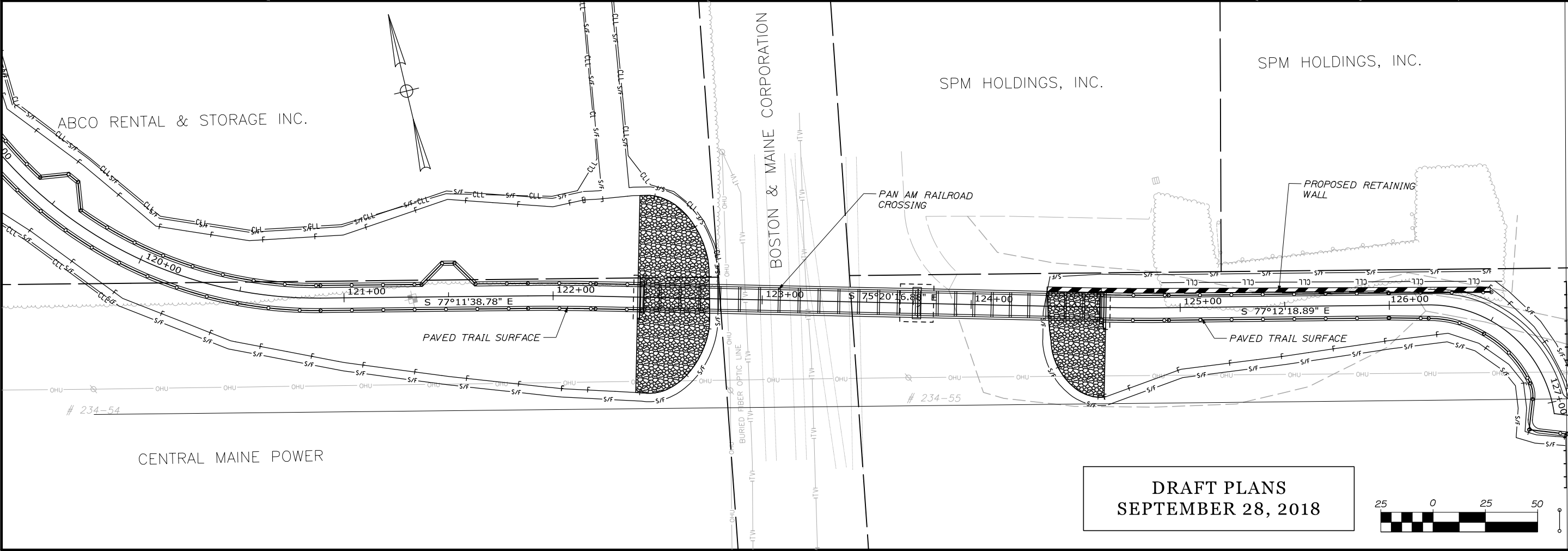


STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		STP-1942600 & STP-1942610		WIN		19426.00 & 019426.10		HIGHWAY PLANS	
TOWN OF SCARBOROUGH		EASTERN TRAIL CONNECTOR		SCARBOROUGH TO SOUTH PORTLAND, MAINE		EROSION CONTROL		PLAN 1		SHEET NUMBER	
PROJ. MANAGER		T. COTE		BY		DATE		SIGNATURE		P.E. NUMBER	
DESIGN-DETAILED		C. HEIMICK		J. OLUND		09/18		DATE		DATE	
CHECKED-REVIEWED		L. DRISCOLL		J. OLUND		-		SIGNATURE		P.E. NUMBER	
DESIGN-DETAILED		J. OLUND		-		-		DATE		DATE	
REVISIONS 1		-		-		-		DATE		DATE	
REVISIONS 2		-		-		-		DATE		DATE	
REVISIONS 3		-		-		-		DATE		DATE	
REVISIONS 4		-		-		-		DATE		DATE	
FIELD CHANGES		-		-		-		DATE		DATE	

1

OF 43





TOWN OF SCARBOROUGH  
EASTERN TRAIL CONNECTOR  
SCARBOROUGH TO SOUTH PORTLAND, MAINE  
EROSION CONTROL  
PLAN 2

SHEET NUMBER

2  
OF 7

PROJ. MANAGER	T. COTE	BY	DATE
DESIGN-DETAILED	C. HEIMICK	J. OLUND	09/18
CHECKED-REVIEWED	L. DRISCOLL	J. OLUND	-
DESIGNS-DETAILED	J. OLUND	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

SIGNATURE	P.E. NUMBER	DATE
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-	-	-
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STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
STP-1942600 & STP-1942610  
WIN  
19426.00 & 019426.10 HIGHWAY PLANS

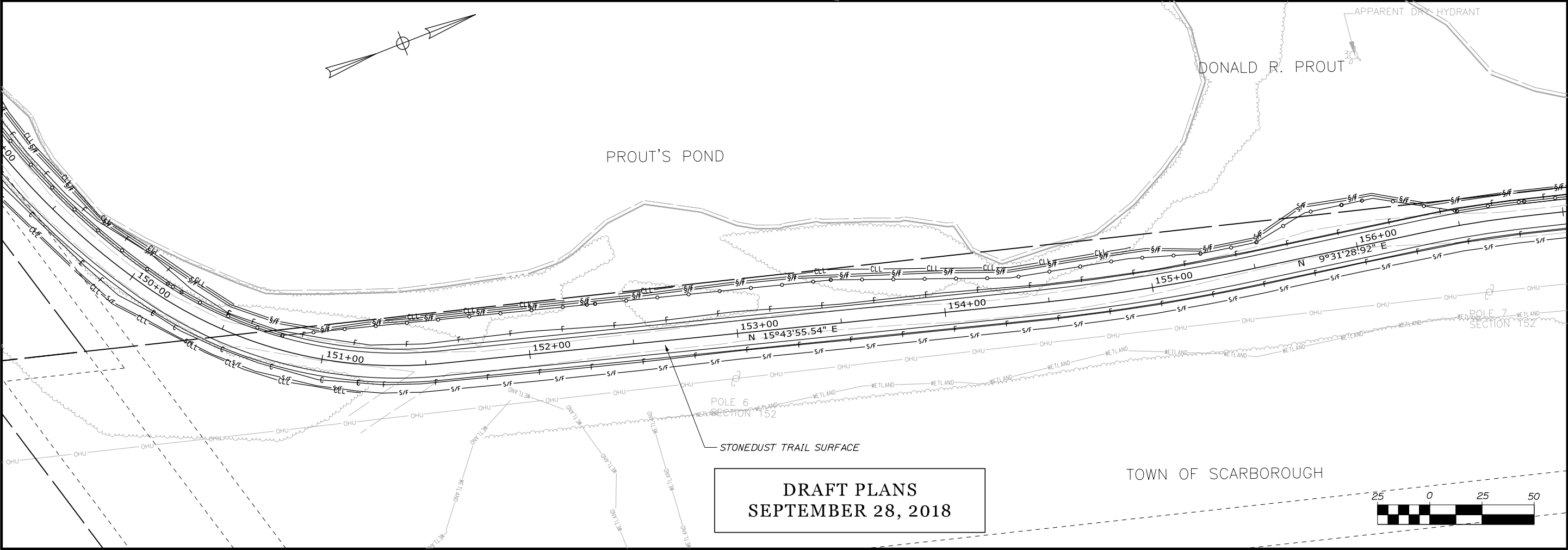
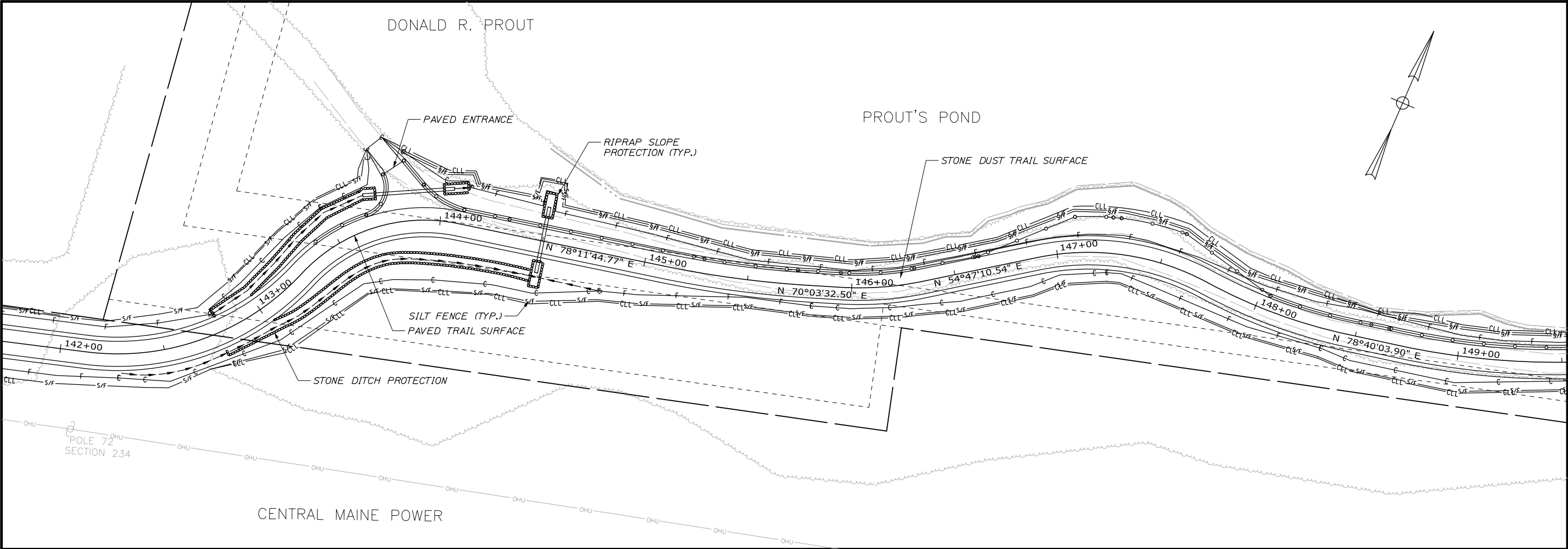


Date:9/28/2018

Username:

Division:

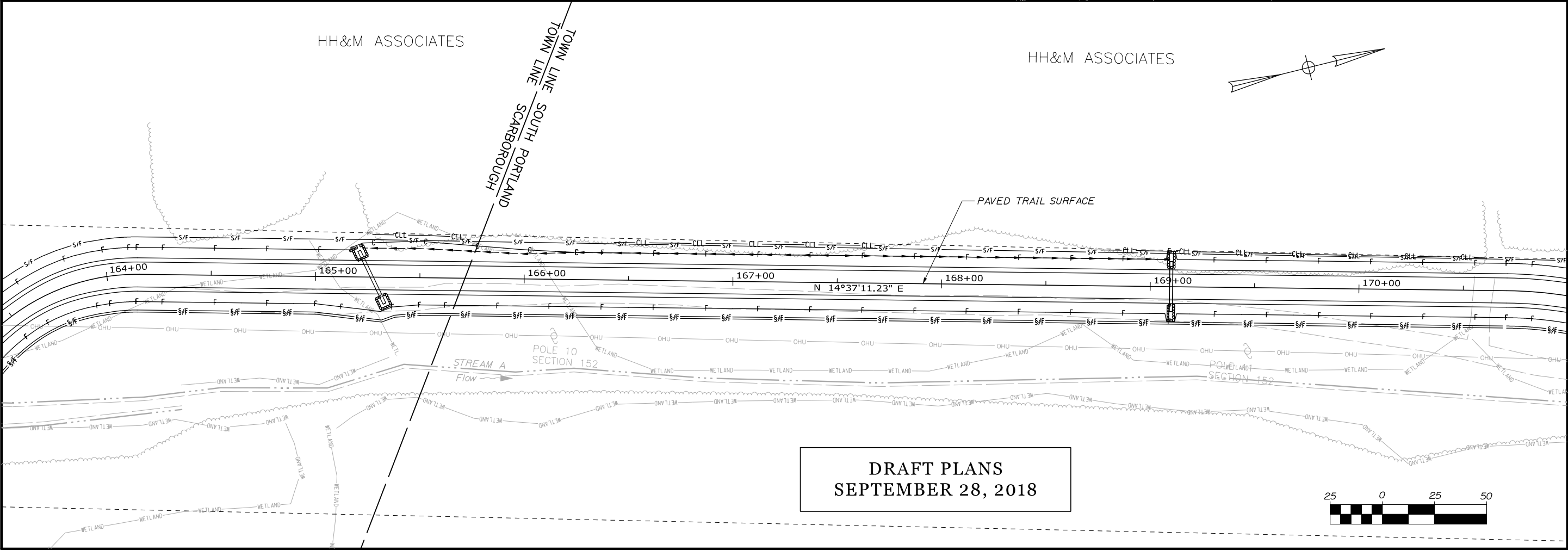
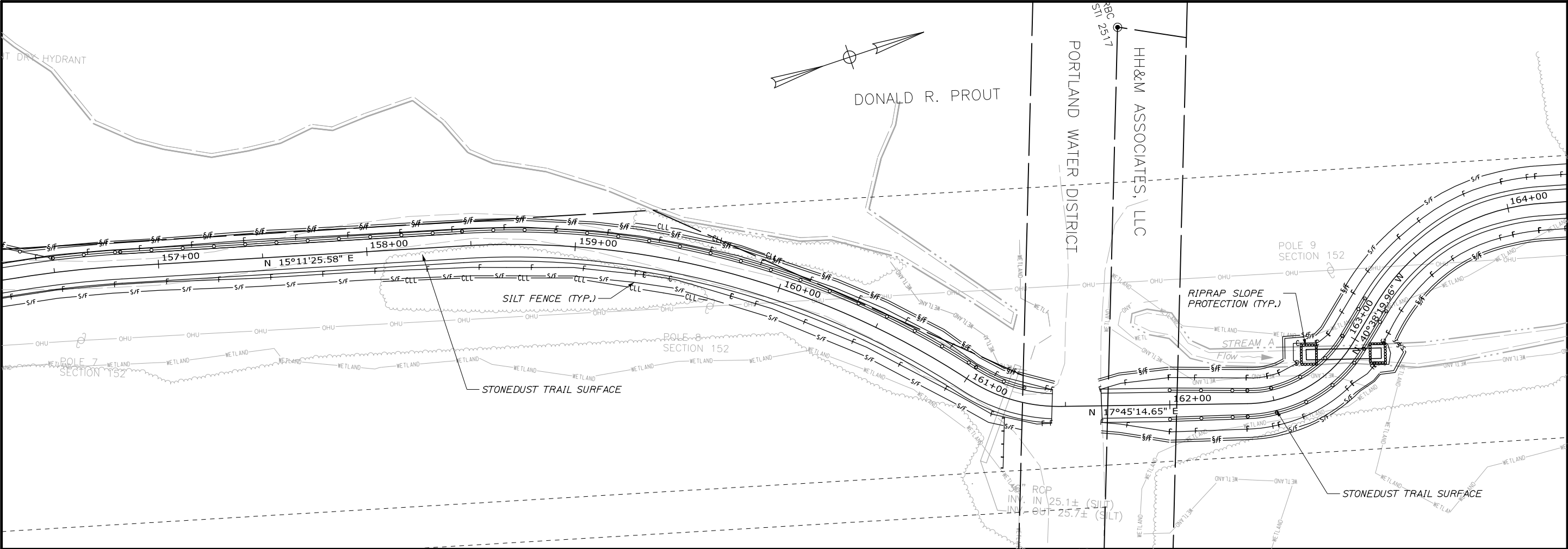
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DRAFT PLANS  
SEPTEMBER 28, 2018



STATE OF MAINE DEPARTMENT OF TRANSPORTATION		STP-1942600 & STP-1942610		WIN 19426.00 & 019426.10 HIGHWAY PLANS	
TOWN OF SCARBOROUGH EASTERN TRAIL CONNECTOR SCARBOROUGH TO SOUTH PORTLAND, MAINE		EROSION CONTROL PLAN 4		SHEET NUMBER 4 OF 7	
PROJ. MANAGER	T. COTE	BY	DATE	SIGNATURE	P.E. NUMBER
DESIGN-DETAILED	C. HERRICK	J. OLUND	09/18		
CHECKED-REVIEWED	L. DRISCOLL				
DESIGNS-DETAILED	J. OLUND				
REVISIONS 1					
REVISIONS 2					
REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					

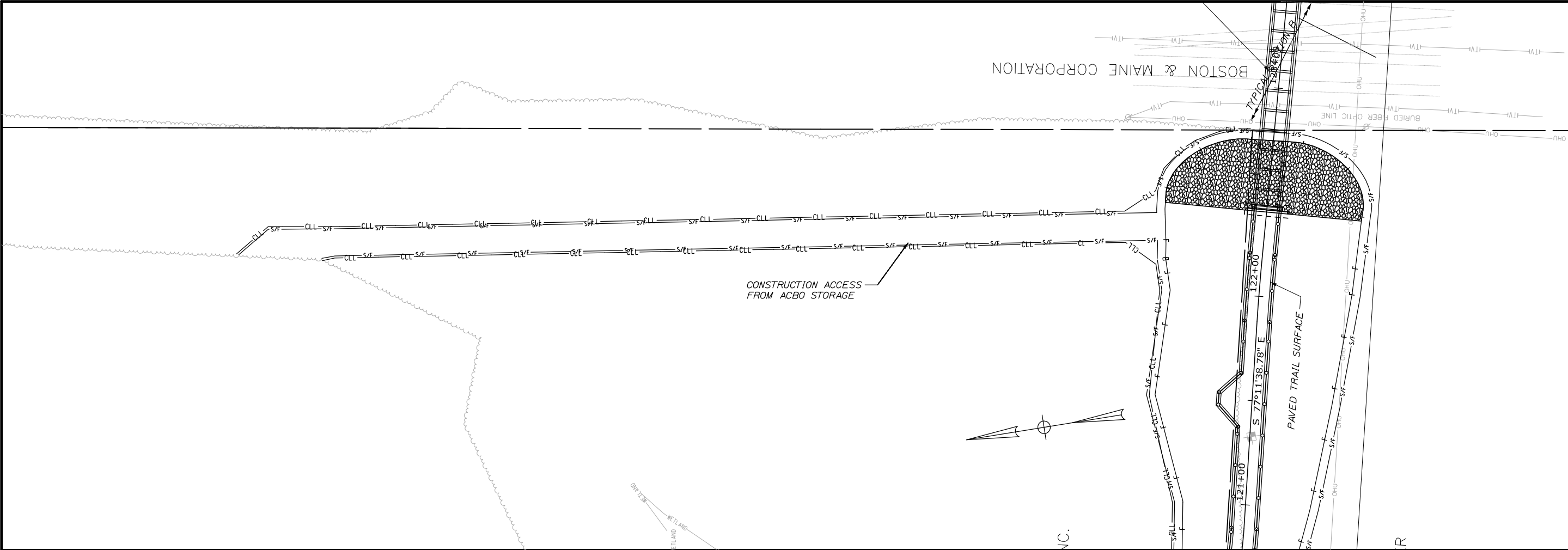


STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		STP-1942600 & STP-1942610		WIN		19426.00 & 019426.10		HIGHWAY PLANS	
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PROJ. MANAGER		DESIGN-DETAILED		CHECKED-REVIEWED		DESIGNS-DETAILED		REVISIONS 1		REVISIONS 2	
T. COTE		C. Helmick		L. DRISCOLL		J. OLUND		-		-	
BY		J. OLUND		-		-		-		-	
DATE		09/18		-		-		-		-	
SIGNATURE		P.E. NUMBER		DATE		-		-		-	



<div style="text-align: center;"> <p><b>SHEET NUMBER</b></p> <p><b>6</b></p> <p>OF 7</p> </div>	TOWN OF SCARBOROUGH EASTERN TRAIL CONNECTOR SCARBOROUGH TO SOUTH PORTLAND, MAINE				PROJ. MANAGER	T. COTE	BY	DATE
					DESIGN-DETAILED	C. Herlick		09\18
					CHECKED-REVIEWED	L. DRISCOLL	J. OLUND	
					DESIGN2-DETAILED2	J. OLUND	-	
					DESIGN3-DETAILED3	-	-	
					REVISED			
EROSION CONTROL PLAN 6				REVISED				
				REVISED				
				REVISED				
				REVISED				
				FIELD CHANGES				
STATE OF MAINE DEPARTMENT OF TRANSPORTATION  <b>STP-1942600 &amp; STP-1942610</b>  <b>WIN</b> <b>19426.00 &amp; 019426.10 HIGHWAY PLANS</b>								





TOWN OF SCARBOROUGH  
EASTERN TRAIL CONNECTOR  
SCARBOROUGH TO SOUTH PORTLAND, MAINE  
EROSION CONTROL  
PLAN 7

PROJ. MANAGER	T. COTE	BY	DATE
DESIGN-DETAILED	C. Heimerl	J. OLUND	09/18
CHECKED-REVIEWED	L. DRISCOLL	J. OLUND	-
DESIGN-DETAILED	J. OLUND	-	-
REVISIONS 1	-	-	-
REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

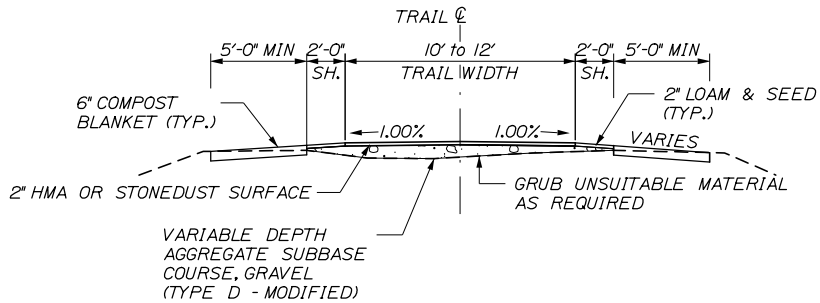
STATE OF MAINE DEPARTMENT OF TRANSPORTATION
STP-1942600 & STP-1942610
WIN 19426.00 & 019426.10 HIGHWAY PLANS

Date:8/22/2018

Username:

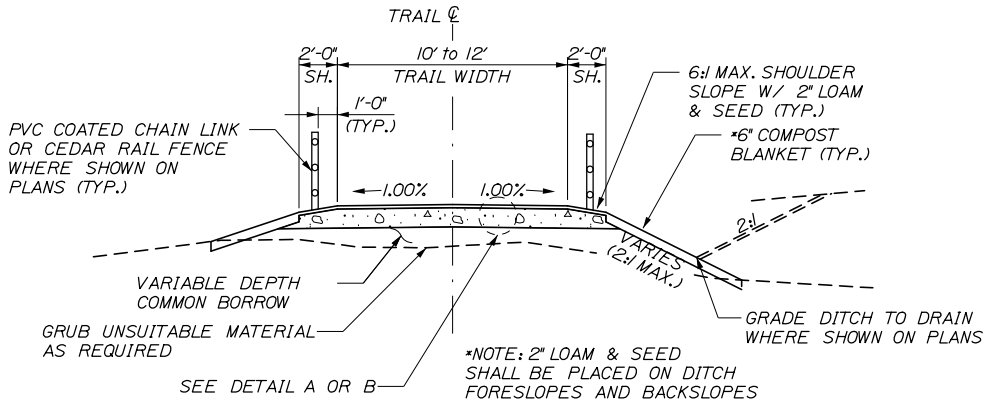
Division:

Filename: 001\_Typical Sections.dgn



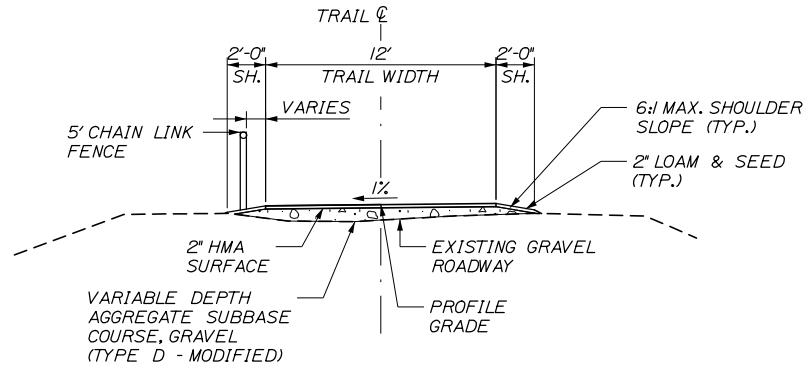
TYPICAL SECTION A

N.T.S.  
STA. 99+25 TO STA. 100+00  
STA. 100+36 TO STA. 101+00  
STA. 128+50 TO STA. 137+60  
STA. 138+35 TO STA. 142+50  
STA. 162+00 TO STA. 173+00  
STA. 178+50 TO STA. 181+00



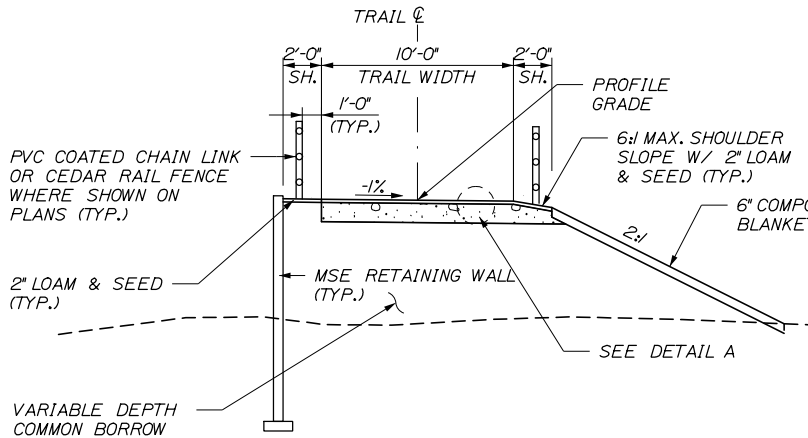
TYPICAL SECTION B

N.T.S.  
STA. 103+00 TO STA. 116+50  
STA. 142+50 TO STA. 145+00  
STA. 173+00 TO STA. 178+50



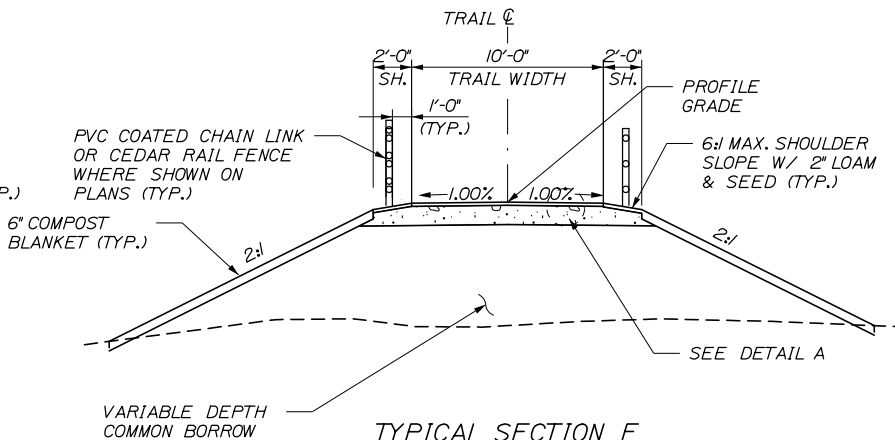
TYPICAL SECTION C - PROUT'S POND

N.T.S.  
STA. 145+00 TO STA. 161+20



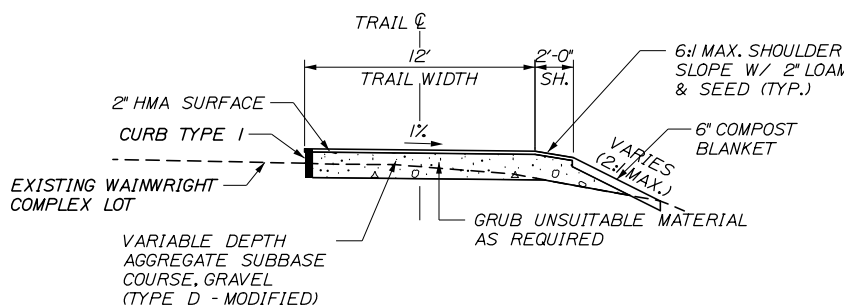
TYPICAL SECTION D  
EMBANKMENT SECTION  
W/ RETAINING WALL

N.T.S.  
STA. 124+62 TO STA. 126+50



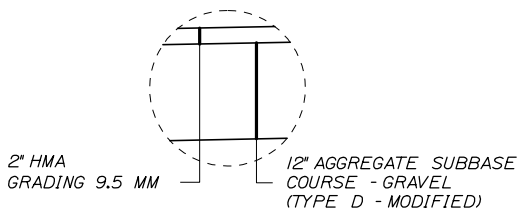
TYPICAL SECTION E  
EMBANKMENT SECTION

N.T.S.  
STA. 101+00 TO 103+00  
STA. 116+50 TO 122+42

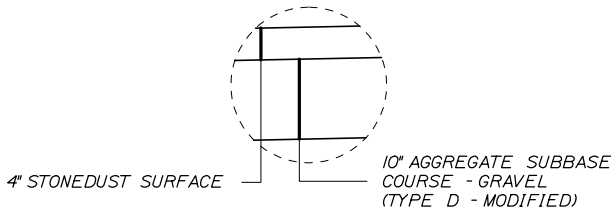


TYPICAL SECTION F  
WAINWRIGHT FACILITY

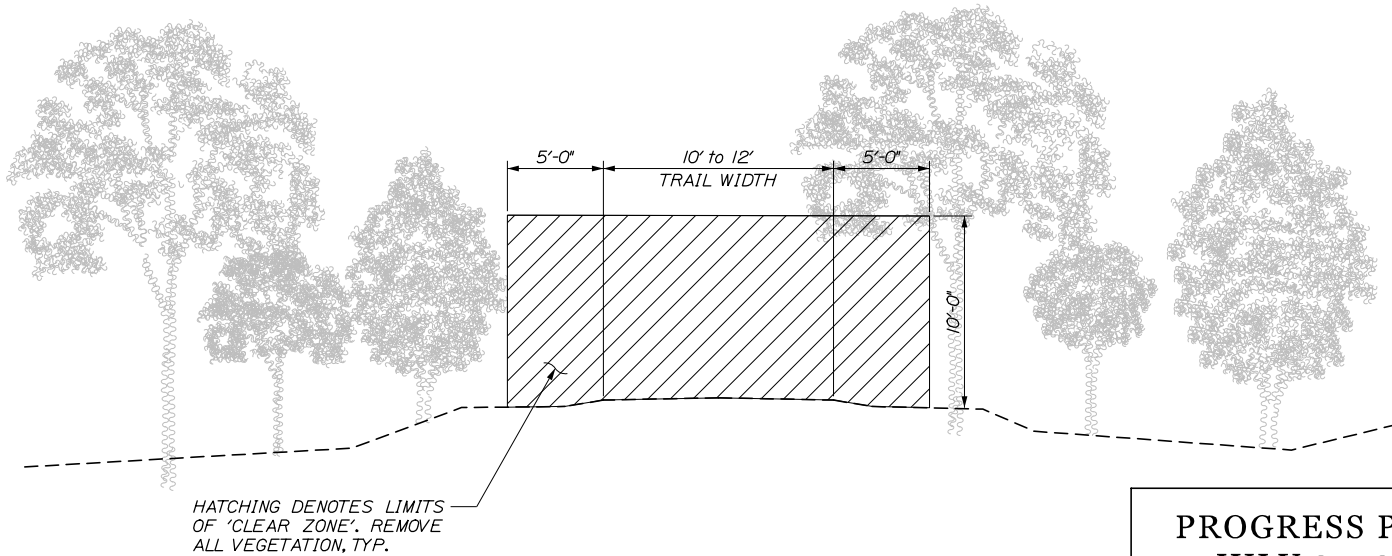
N.T.S.  
STA. 181+00 TO STA. 182+75



DETAIL A



DETAIL B



TYPICAL CLEARING LIMITS DETAIL

N.T.S.

NOTES:  
1. CONTRACTOR IS RESPONSIBLE FOR LIMBING-UP OVERHANGING VEGETATION TO THE HEIGHT INDICATED ON THE DETAIL. PAYMENT SHALL BE UNDER ITEM #201.12 SELECTIVE CLEARING AND THINNING.

PROGRESS PRINT  
JULY 27, 2018

PROJ. MANAGER	CHECKED-REVIEWED	DESIGN-DETAILED	REVISIONS 1	REVISIONS 2	REVISIONS 3	REVISIONS 4	FIELD CHANGES
C. Helmick	-	-	-	-	-	-	-
DATE	08/18	-	-	-	-	-	-
BY	-	-	-	-	-	-	-
SIGNATURE	-	-	-	-	-	-	-
P.E. NUMBER	-	-	-	-	-	-	-
DATE	-	-	-	-	-	-	-

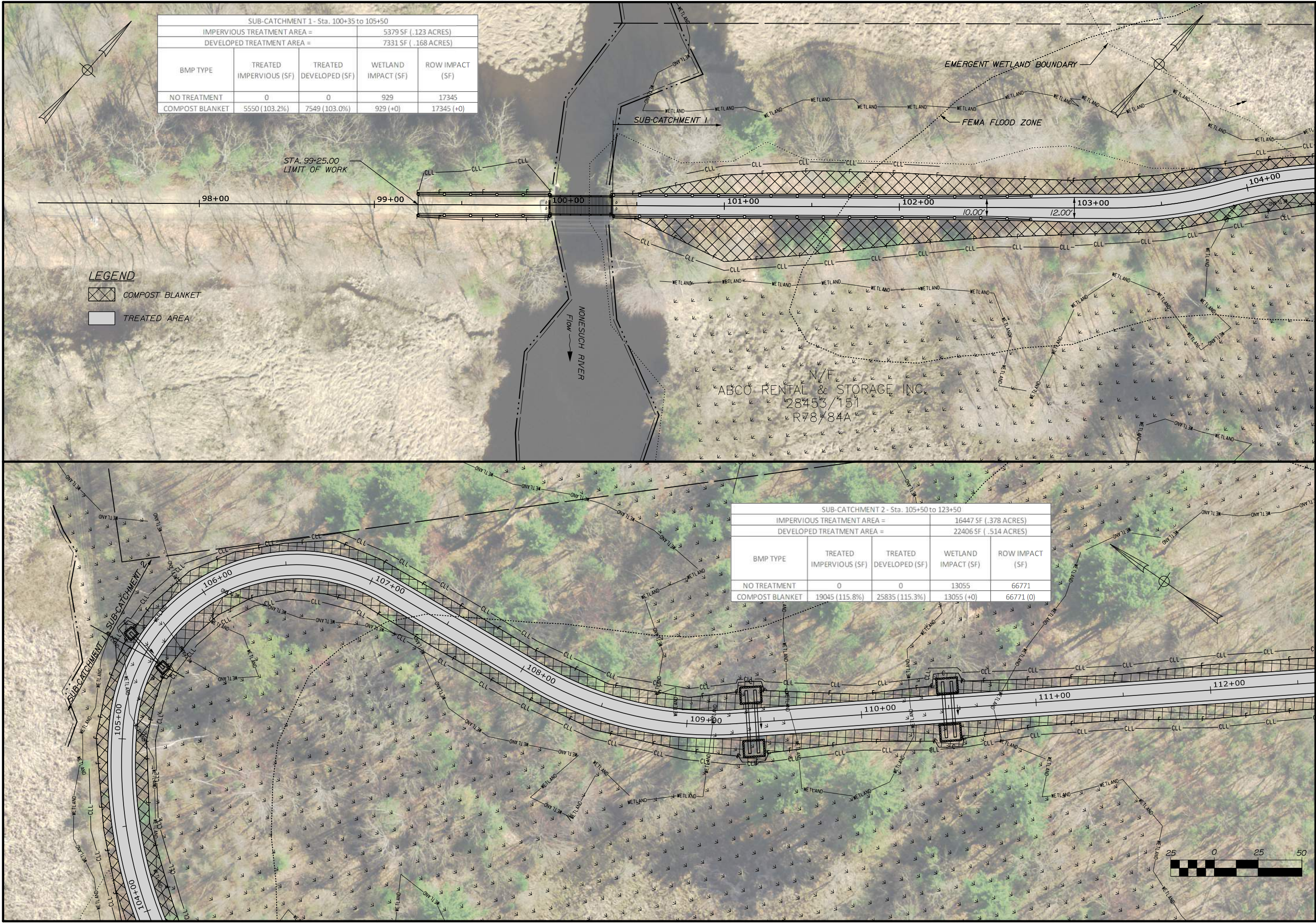


Date:8/22/2018

Username:

Division:

Filename: 002\_TrailPlan01.dgn



STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
STP-1938600

WIN  
19386.00  
HIGHWAY PLANS

PROJ. MANAGER  
DESIGN-DETAILED  
CHECKED-REVIEWED  
DESIGNS-DETAILED  
REVISIONS 1  
REVISIONS 2  
REVISIONS 3  
REVISIONS 4  
FIELD CHANGES

BY  
C.Helmick  
-  
-  
-  
-  
-  
-  
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-

DATE  
08/18  
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TOWN OF SCARBOROUGH  
EASTERN TRAIL CONNECTOR  
SCARBOROUGH TO SOUTH PORTLAND, MAINE  
TRAIL PLAN 1

SHEET NUMBER  
2  
OF 42

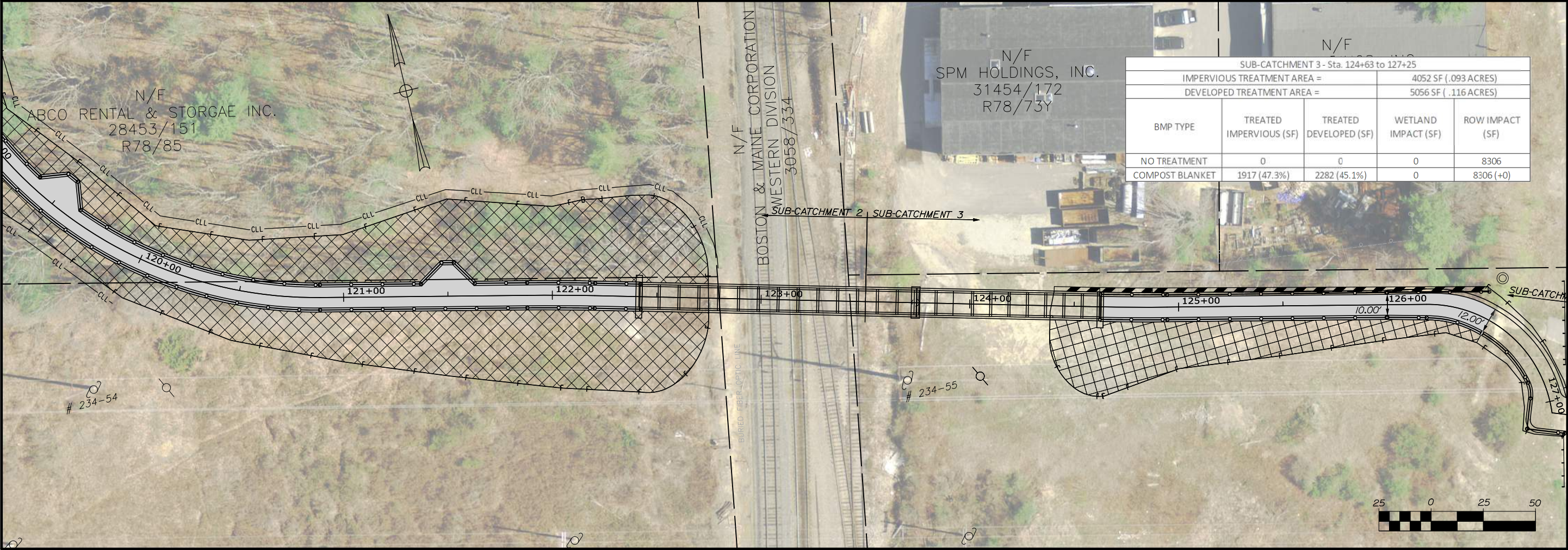
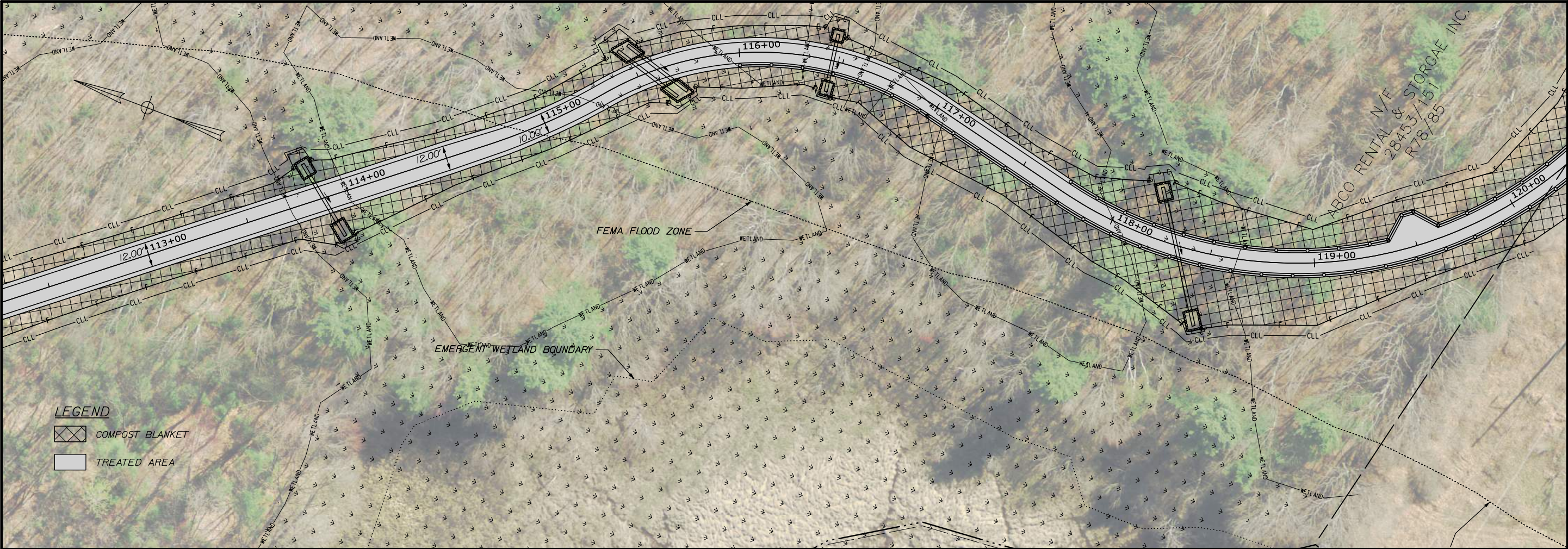


Date:8/22/2018

Username:

Division:

Filename: 003\_TrailPlan02.dgn



SUB-CATCHMENT 3 - Sta. 124+63 to 127+25				
IMPERVIOUS TREATMENT AREA =		4052 SF (.093 ACRES)		
DEVELOPED TREATMENT AREA =		5056 SF (.116 ACRES)		
BMP TYPE	TREATED IMPERVIOUS (SF)	TREATED DEVELOPED (SF)	WETLAND IMPACT (SF)	ROW IMPACT (SF)
NO TREATMENT	0	0	0	8306
COMPOST BLANKET	1917 (47.3%)	2282 (45.1%)	0	8306 (+0)

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
STP-1938600  
WIN  
19386.00  
HIGHWAY PLANS

PROJ. MANAGER  
DESIGN-DETAILED  
CHECKED-REVIEWED  
DESIGNS-DETAILED  
REVISIONS 1  
REVISIONS 2  
REVISIONS 3  
REVISIONS 4  
FIELD CHANGES

DATE  
08/18  
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BY  
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SIGNATURE  
P.E. NUMBER  
DATE

TOWN OF SCARBOROUGH  
EASTERN TRAIL CONNECTOR  
SCARBOROUGH TO SOUTH PORTLAND, MAINE  
TRAIL PLAN 2

SHEET NUMBER  
3  
OF 42

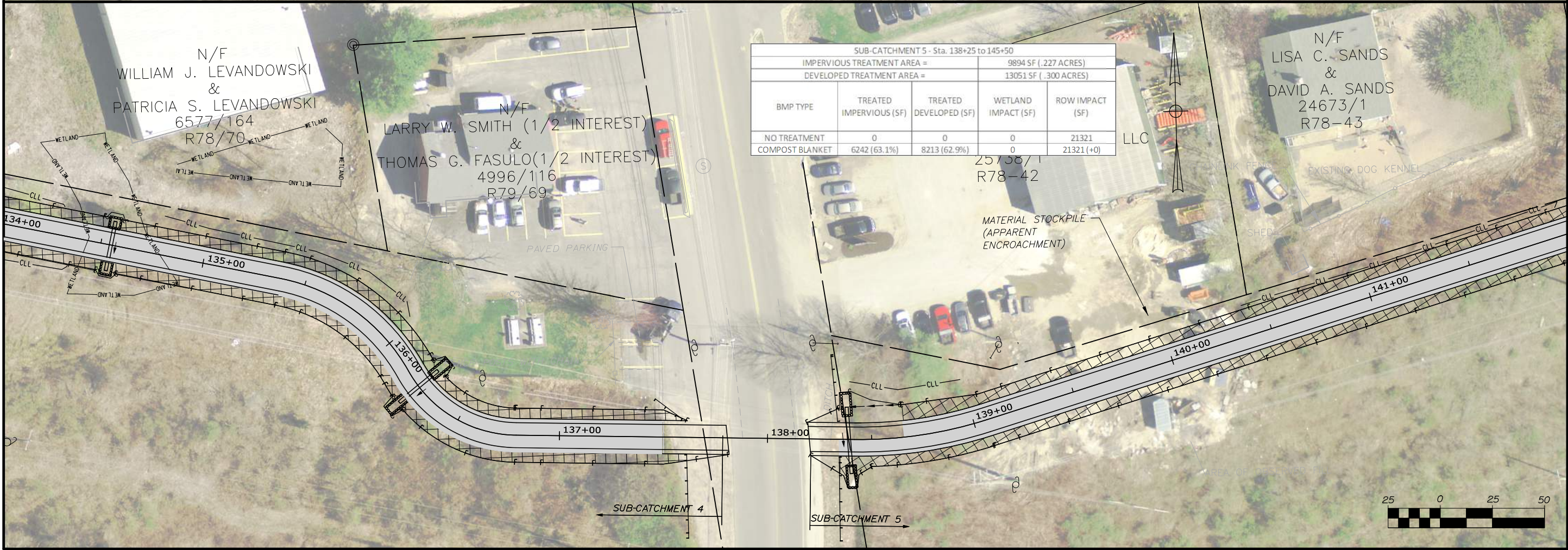


Date:8/22/2018

Username:

Division:

Filename: 004\_TrailPlan03.dgn



STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
STP-1938600  
WIN  
19386.00  
HIGHWAY PLANS

PROJ. MANAGER  
DESIGN-DETAILED  
CHECKED-REVIEWED  
DESIGNS DETAILLED  
REVISIONS 1  
REVISIONS 2  
REVISIONS 3  
REVISIONS 4  
FIELD CHANGES

DATE  
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BY  
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SIGNATURE  
P.E. NUMBER  
DATE

TOWN OF SCARBOROUGH  
EASTERN TRAIL CONNECTOR  
SCARBOROUGH TO SOUTH PORTLAND, MAINE  
TRAIL PLAN 3

SHEET NUMBER  
4  
OF 42









SUB-CATCHMENT 7 - Sta. 161+70 to 174+50				
IMPERVIOUS TREATMENT AREA =		12478 SF (.286 ACRES)		
DEVELOPED TREATMENT AREA =		16874 SF (.387 ACRES)		
BMP TYPE	TREATED IMPERVIOUS (SF)	TREATED DEVELOPED (SF)	WETLAND IMPACT (SF)	ROW IMPACT (SF)
NO TREATMENT	0	0	4625	29331
COMPOST BLANKET	14109 (113.1%)	19004 (112.6%)	4625 (+0)	29331 (+0)

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
STP-1938600

WIN  
19386.00  
HIGHWAY PLANS

PROJ. MANAGER	DESIGN-DETAILED	CHECKED-REVIEWED	DESIGNS DETAILLED	REVISIONS 1	REVISIONS 2	REVISIONS 3	REVISIONS 4	FIELD CHANGES
C. Helmick	-	-	-	-	-	-	-	-

DATE: 08/18  
SIGNATURE:  
P.E. NUMBER:  
DATE:

TOWN OF SCARBOROUGH  
EASTERN TRAIL CONNECTOR  
SCARBOROUGH TO SOUTH PORTLAND, MAINE  
TRAIL PLAN 5

SHEET NUMBER  
6  
OF 42

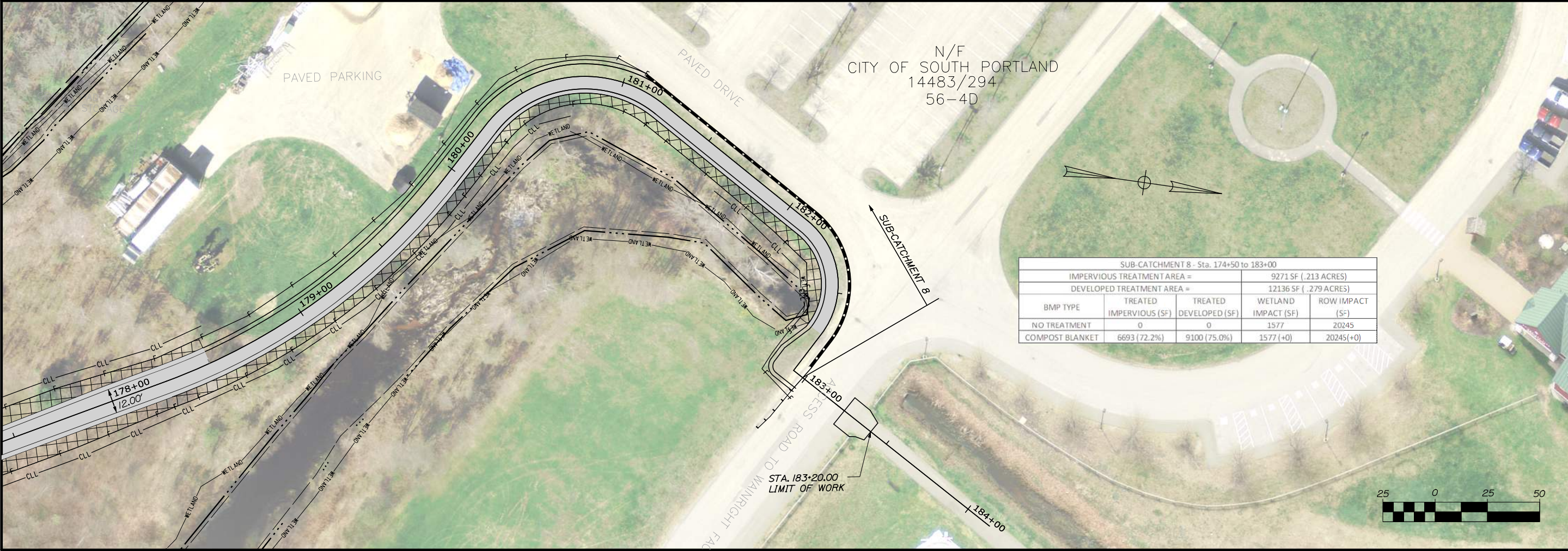
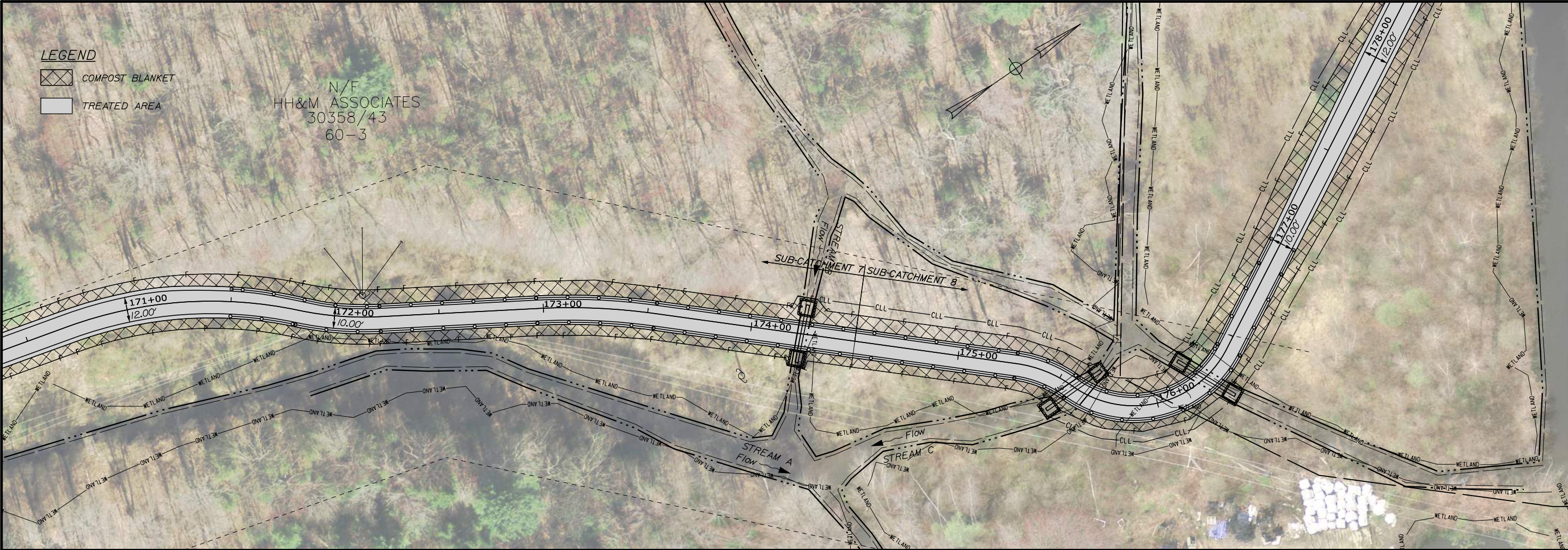


Date:8/22/2018

Username:

Division:

Filename: 007\_TrailPlan06.dgn



SUB-CATCHMENT 8 - Sta. 174+50 to 183+00				
IMPERVIOUS TREATMENT AREA =		9271 SF (.213 ACRES)		
DEVELOPED TREATMENT AREA =		12136 SF (.279 ACRES)		
BMP TYPE	TREATED IMPERVIOUS (SF)	TREATED DEVELOPED (SF)	WETLAND IMPACT (SF)	ROW IMPACT (SF)
NO TREATMENT	0	0	1577	20245
COMPOST BLANKET	6693 (72.2%)	9100 (75.0%)	1577 (+0)	20245(+0)

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
STP-1938600  
WIN  
19386.00  
HIGHWAY PLANS

TOWN OF SCARBOROUGH  
EASTERN TRAIL CONNECTOR  
SCARBOROUGH TO SOUTH PORTLAND, MAINE  
TRAIL PLAN 6

SHEET NUMBER  
7  
OF 42

PROJ. MANAGER	BY	DATE	SIGNATURE
C. Heimek		08/18	
CHECKED-REVIEWED			
DESIGNS-REVIEWED			
DESIGNS-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
P.E. NUMBER		DATE	



## Stormwater Management Memo

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**Date**

September 20, 2023

---

**To:** File

---

**Project****Correspondence**

---

**From**

HNTB on behalf of the Town of Scarborough

---

**Subject**

Eastern Trail Scarborough to South Portland

Stormwater Management Recommendation

### Introduction:

This document provides a brief justification for the use of an alternative BMP for stormwater management of a new section of off-road trail in the town of Scarborough and City of South Portland. The use of erosion control mix as a low impact development BMP seems appropriate in meeting the needs of this off-road, narrow, low-impact linear project that prohibits motorized vehicles, limits concentrated flows, and precludes winter maintenance.

### Background:

The proposed Eastern Trail Project is a 1.6-mile, multi-use trail, connecting two existing sections of the Eastern Trail through Scarborough and South Portland. This section of the trail supports a broader initiative to construct a 65+ mile, non-motorized transportation corridor between Kittery and South Portland. This Project and section of trail closes an important gap within this trail system.

The proposed trail alignment was selected from a host of alternatives during the preliminary design phase since it was found to result in the least impact to environmental resources and private landowners and was also the most cost effective. The trail typically consists of a 10 to 12-foot wide paved or stone dust surface with 2-foot shoulders on each side that will be loamed and seeded.

### Stormwater Impacts:

For the purposes of quantifying surfaces requiring stormwater management, both paved and stone dust trail surfaces are considered impervious area and the trail surface plus shoulders are considered developed area since the shoulders will likely be mowed more than twice per year. Quantifying these areas, the proposed trail consists of 2.20 acres of impervious area and 2.93 acres of developed area. According to Chapter 500, this project is required to meet the Basic Standards and the General Standards.

In accordance with the Chapter 500 guidelines, there are several areas within the project that will not require treatment and can be deducted from the values. An approximate 1,500-foot section of the proposed trail follows an existing access corridor along Prout's pond. This section of trail will not substantially change the existing conditions and therefore reuse of this access corridor meets the definition of maintenance. The proposed trail does not alter the existing line, grade, hydraulic capacity, or the original purpose of the existing condition. In addition to this maintenance region, several sections of the trail crossing wetlands can be deducted from the total area requiring treatment if the design allows for passage of flow from one side of the wetland to the other per Section 5e in the Chapter 500 guidelines. Deducting maintenance and wetland sections of the trail results in a total of 1.60 acres of new impervious area and a total of 2.12 acres of new developed area on this Project. Lastly, since the trail is considered a linear project, no less than 75% of impervious or 50 percent of developed area require treatment. The total area that would require treatment is 1.20 acres of the impervious area.

#### **BMP Alternatives Investigated:**

Traditional BMPs identified within Volume III of the Maine Stormwater Management Design Manual were preliminarily assessed for appropriateness along the project. This preliminary assessment identified two BMP's that generally met project needs: vegetative buffers, and utilizing pervious pavement with appropriate base, subbase, and underdrain materials to provide treatment via filtration.

The use of vegetated buffers alone only allows 0.81 acres of impervious area, or 43.3% of the impervious area, to be treated using this method. Vegetated buffers also result in an additional 10,219 square feet of wetland impacts, 109,448 square feet of additional right of way impacts, and approximately \$17,600 of additional project construction costs (compared to a no treatment option). Due to this increase in wetland and right of way impacts and falling short of the required 75% of impervious area being treated, it is not considered a reasonable option to satisfy Chapter 500.

Pervious pavement was also investigated as an alternative for stormwater treatment. The trail would be built using 2" of permeable pavement, 12" crushed stone base for storage and trail structure, 6" sand filter layer, and underdrain to collect and discharge the stormwater. This would require the trail profile to be raised up to 2' in some locations to accommodate the trail structure and outlet the underdrain, adding additional right of way and wetland impacts. A pervious pavement design results in 1.21 acres or 75.4% of impervious area treated. It adds approximately 3,393 square feet of wetland impacts, 14,453 square feet of right of way impacts, and added approximately \$268,000 of project construction costs (compared to a no treatment

option). Due to these impacts and cost and maintenance implications, this option is an undesirable alternative.

**Proposed Stormwater Solution:**

Volume III, Chapter 10 of the Maine Stormwater Management Design Manual promotes the use of low impact development (LID) practices for managing stormwater, where appropriate. Due to the nature of this project (i.e.: an off-road, narrow, low-impact linear project prohibiting motorized vehicles, limiting concentrated flows, and precluding winter maintenance), an atypical BMP seems appropriate.

To that end, a compost blanket applied to the side slopes of the project was investigated. This method of stormwater treatment was successfully used on the Trafton Road Interchange project, a 2016 MaineDOT project in Waterville and has been successfully used in multiple locations across the country. However, long-term concerns about phosphorous leaching and continual replacement were identified as potential shortfalls of this treatment method. With input from MaineDOT, and acceptance from Jeff Dennis from Maine DEP, this section of the Eastern Trail will be constructed with its side slopes covered with erosion control mix to treat stormwater runoff.

This method of stormwater treatment is applicable to this project because: the trail will be limited to non-motorized traffic with no proposed winter maintenance, the erosion control mix will protect the slopes from erosion and will provide enough void spaces for stormwater retention and slow runoff, and the trail surface will be crowned, allowing only 5'-6' of stormwater runoff via sheet flow.

The erosion control blanket will be utilized on the side slopes in place of loam at a depth of 4". The length of side slopes will be a minimum of 5' to provide a roughly 1:1 ratio of impervious area draining to the side slopes. For the entire project, this would result in treatment of 1.97 acres of impervious area or 91.8% of the total (new and existing) impervious area being treated.

**Conclusion:**

By utilizing erosion control mix on the side slopes of the project, stormwater runoff produced from the project's impervious and developed areas are treated adequately. The proposed stormwater BMP treats 91.8% of the total impervious area on the project, which far exceeds the 75% of new impervious area treatment threshold for a linear project. Taking these into consideration, the Eastern Trail project should be granted a stormwater permit.





TOWN OF  
**SCARBOROUGH, MAINE**



Town of Scarborough

Maintenance Plan for the Eastern Trail, WIN ft 19425.00 &  
19426.10

The Eastern Trail is a significant asset within the Town of Scarborough. It is the intent of the Town to dedicate the necessary resources to properly maintain this important and valued recreational and transportation amenity. This represents the Town of Scarborough's Maintenance Plan for the portion of the Eastern Trail within its municipal boundaries.

Funding

The Town of Scarborough annually appropriates funding for the maintenance of roads, sidewalks, parks and other publicly traveled and utilized ways and facilities. Funds for maintenance of the Eastern Trail within Scarborough will be appropriated within the budget established by the Department of Public Works and Community Services.

Maintenance

This maintenance plan will involve annual maintenance work every spring and throughout the year as needed to ensure the trail is ready for each season, to include:

- Ongoing removal of all obstructions (trees, branches, etc.,) throughout the year.
- Evaluation of and response to erosion issues every spring to ensure the trail is ready for each season.
- In late fall and early spring of each year, the Town will inspect all culverts to ensure proper operation.
- On an as-needed basis, the Town will tend to necessary brush-cutting along the entire Trail within its borders.
- Continuous monitoring of the Trail over the years will occur to ensure that the trail is kept in good condition.

Monitoring

The Town anticipates that trail monitoring will occur by the Eastern Trail Management District and/or the Eastern Trail Alliance, and by regular and periodic users of the Trail. When reports are received as to maintenance needs, the Town will respond in a prompt and thorough manner to ensure a high level of maintenance and readiness of the Eastern Trail.

Douglas Howard  
Public Works Director

10-11-23

Date

Todd Souza  
Community Services Director

10/4/23

Date

cc: Tom Hall, Town Manager



# CITY OF SOUTH PORTLAND

January 8, 2024

## **Maintenance Plan for the Eastern Trail** **WIN # 19426.00 & 19426.10**

The Eastern Trail (also known as the Greenbelt) is a significant public asset within the City of South Portland. Therefore, it is the intent of the City to dedicate the necessary resources to properly maintain this important and valued recreational and transportation amenity. This document outlines the City's Maintenance Plan for the portion of the Eastern Trail within its municipal boundaries.

### **Funding**

The City of South Portland annually appropriates funding to maintain its roads, sidewalks, trails, parks, and other publicly traveled and utilized ways and facilities. Funds for the maintenance of the portion of the Eastern Trail within the City of South Portland resides primarily in the departmental budget of Parks, Recreation & Waterfront (PRW), however support is also by the Department of Public Works (PW) and various other offices and staff within the City.

### **Maintenance**

This plan involves annual maintenance that occurs every spring as well as work throughout the year as-needed, to ensure the trail is kept in a good and safe condition. Work includes:

- Annual inspection of the entire trail to assess maintenance needs (PRW)
- Brush-cutting and landscaping along the trail as-needed (PRW)
- Remove obstructions (trees, branches, etc.) along the trail as-needed (PRW)
- Evaluate erosion issues every spring and fall and respond as-needed (PRW with support from Engineering Office)
- Repair trail surface as-needed, including paved sections (PRW with support from PW)

### **Monitoring**

In addition to City departments, trail monitoring will be accomplished by the Eastern Trail Management District and/or the Eastern Trail Alliance, and by the users of the Trail. When reports are received related to maintenance needs, the City will respond in a prompt and thorough manner to ensure the trail is safe and functional.

Melissa Hutchins  
Director, Public Works

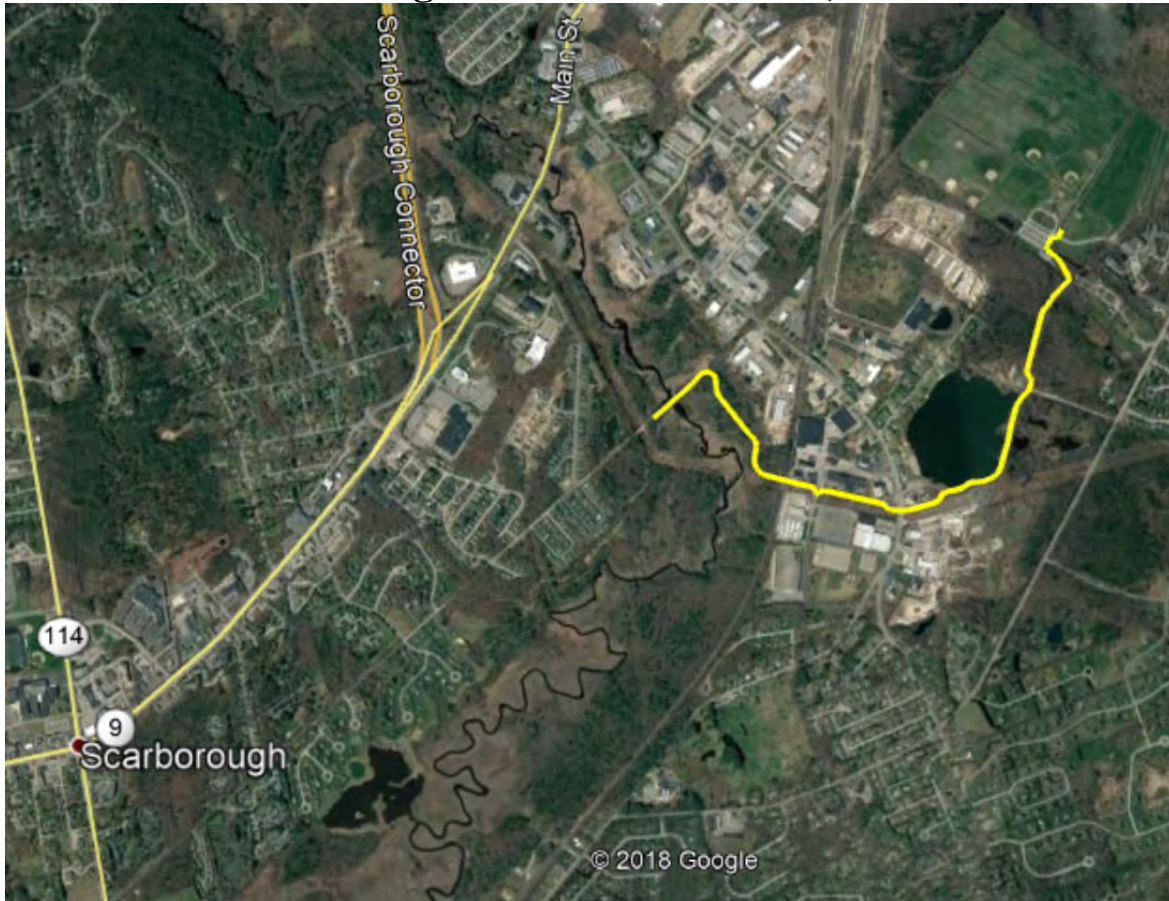
Karl Coughlin  
Director, Parks, Recreation & Waterfront

## **ATTACHMENT 9 – SITE CONDITIONS REPORT**



# **Wetland and Waterbody Resource Delineation Report**

## **Eastern Trail Connector Project Scarborough and South Portland, Maine**



**August 29, 2018**

Prepared by: NewEarth Ecological Consulting  
169 Watson Mill Road  
Saco, ME 04072



For: HNTB Corporation  
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Portland, Maine 04092

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## 1.0 INTRODUCTION

The Towns of Scarborough and South Portland, Maine are proposing the Scarborough to South Portland Eastern Trail Connector Project (Project), which will involve construction of an off-road multipurpose, transportation and recreation trail which will provide a connection on the Eastern Trail between the recently completed Eastern Trail segment on the west bank of the Nonesuch River in Scarborough, and South Portland's southern terminus of the Eastern Trail/South Portland Greenbelt at the Wainwright Recreation Complex in South Portland, Maine (Appendix A, Figure 1). The Project, located within the towns of Scarborough and South Portland, in Cumberland County, Maine, is being completed as a Locally Administered Project with funding from the towns of Scarborough and South Portland, and The Maine Department of Transportation (MaineDOT).

NewEarth Ecological Consulting, LLC (NewEarth) was contracted by Project Engineer, HNTB Corporation (HNTB) to perform a field delineation and functional assessment of wetlands and waterbodies on the Project site. Surveys were performed within the Project alignment and up to approximately 25 to 50-feet from the proposed trail edges (Appendix A, Figure 1). The purpose of the investigation was to determine the presence and extent of wetlands, waterbodies and ephemeral pools within the Project area that meet the criteria for federal or state regulation under Section 404 of the Clean Water Act (CWA) and/or Maine's Natural Resource Protection Act (NRPA) 38 M.R.S.A §480-A to 480-Z, and to conduct a wetland functional assessment of identified wetlands. In some areas, wetland complexes and waterbodies were previously delineated and mapped (NewEarth 2013b, 2016; Normandeau 2010). This survey effort builds upon this existing data and was needed due to a realignment of the proposed route and length of time passed (greater than 5-years) since delineations were last performed. Results will be used to facilitate environmental permitting and construction planning and design efforts.

## 2.0 METHODS

### 2.1 BACKGROUND INFORMATION

Prior to conducting fieldwork a desktop review of existing site information was conducted to aid in the identification of potential protected resources in the Project area, including:

- Google Earth™ high resolution satellite imagery (Google Earth 2018);
- Maine Department of Agriculture, Conservation and Forestry (MDACF) online floodplain maps (MDACF 2018);
- Maine Department of Environmental Protection (MDEP) regulations and digital data (MDEP 1988, 2014, 2016a, 2016b, 2017);
- Maine Natural Areas Program (MNHP), Beginning with Habitat program (BwH 2018);
- United States Department of Agriculture (USDA)/Natural Resources Conservation Service (NRCS), online soil survey database for Cumberland County, Maine (USDA/NRCS 2013a, 2013b, 2014);
- U.S. Geological Survey (USGS) Topographic Quadrangle Map for Portland West, Maine, (USGS 2017); and,
- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps (USFWS 2018).

## **2.2 ON-SITE FIELD DETERMINATION**

### **2.2.1 Wetland Delineation**

Wetlands were delineated pursuant to the currently accepted federal methodology provided in the US Army Corps of Engineers (USACE) Wetlands Delineation Manual (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0* (USACE 2012). This method involved collection and review of background information, followed by an on-site survey and delineation.

A certified professional wetland scientist (PWS) from NewEarth performed systematic field surveys and reassessment of previously delineated areas within the Project site between June 3<sup>rd</sup> and June 5<sup>th</sup>, 2018 (Appendix A, Figure 1). The wetland delineation was initiated with a walkover inspection of the area to identify topographic, drainage, and vegetation features that would indicate potential wetland and/or waterbody features. Sampling locations were then identified within potential wetland areas and investigated using the Routine On-Site Determination Method and Regional Supplement (Environmental Laboratory 1987; USACE 2012). At each sampling location, Wetland Determination Data Forms were completed to evaluate and document vegetation, soils, hydrology, and general site characteristics (completed forms are provided in Appendix B).

Where needed (i.e., not previously mapped or required updating), boundaries of all evaluated areas that exhibited the required parameters for potential designation as a jurisdictional wetland feature (i.e., hydrophytic vegetation, hydric soils, and hydrology) were demarcated with pink vinyl flagging. Each was assigned a wetland cover type classification based on the USFWS classification system for wetlands and deepwater habitats of the United States (Cowardin et al. 1979), and representative photographs of the feature were collected. Wetlands were also evaluated to determine if the features met criteria for designation as MDEP Wetlands of Special Significance (WOSS) or Significant Wildlife Habitat (SWH) under Maine's NRPA (MDEP 1988).

### **2.2.2 Waterbody Identification**

Prior to field surveys, USGS topographic quadrangle maps were reviewed to identify waterbodies and topography conducive to transfer of hydrologic flow near the site. This was followed by a site visit, conducted concurrent to the wetland delineation effort, to identify topographic, drainage, and vegetation features that would indicate potential waterbody features. Any waterbodies encountered on the site were demarcated with blue vinyl flagging and evaluated to characterize each feature. Photographs were collected, and all data was recorded on a Waterbody Assessment Form (completed forms are provided in Appendix B).

Waterbodies include both permanent deepwater features such as lakes and ponds as well as linear features such as tidal and non-tidal creeks, rivers and streams. Each channelized linear waterbody was evaluated to determine if it met the definition of a stream per Maine Statute §480-B, Article 5-A of the NRPA and the Clean Water Act; which means, the feature must be a

natural defined channel between defined banks, be created by the action of surface water, and must have two or more of the following characteristics:

- A. Feature is depicted as a solid or broken blue line on the most recent edition of the USGS 7.5-minute series topographic map or, if that is not available, a 15-minute series topographic map.
- B. Feature contains or is known to contain flowing water continuously for a period of at least 6 months of the year in most years.
- C. The channel bed is primarily composed of mineral material such as sand and gravel, parent material or bedrock that has been deposited or scoured by water.
- D. The channel contains aquatic animals such as fish, aquatic insects or mollusks in the water or, if no surface water is present, within the stream bed.
- E. The channel contains aquatic vegetation and is essentially devoid of upland vegetation.

Each linear waterbody that met two or more of the above criteria was also classified as one of the following based on its origin and hydrologic regime as follows:

**Ephemeral Stream** – is a feature that carries only stormwater in direct response to precipitation with water flowing only during and shortly after large precipitation events. An ephemeral stream has a somewhat-defined channel, the aquatic bed is always above the water table, and stormwater runoff is the primary source of water.

**Intermittent Stream** – has a well-defined channel that contains water for only part of the year, typically during winter and spring when the aquatic bed is below the water table. The flow may be heavily supplemented by stormwater runoff.

**Perennial Stream** – has a well-defined channel that contains water year round during a year of normal rainfall with the aquatic bed located below the water table for most of the year. Groundwater is the primary source of water for a perennial stream, but it also carries stormwater runoff.

### 2.2.3 Drainages and Stormwater Management Wetlands

Drainages and stormwater management wetlands are features created by stormwater surface flow or constructed and often maintained for draining stormwater. The primary distinction between drainages and stormwater management wetlands, is that although both are stormwater features, stormwater wetlands also meet the three parameter criteria for definition as a wetland. These features may meet some of the above definitions of a wetland, river, stream, or brook, but were created for, or caused solely by, stormwater management activities and are therefore not regulated under NRPA and generally are not regulated under USACE Section 404. Many drainages and stormwater management wetlands provide hydrologic connection to, and/or, between protected wetland resources. Each agency reserves the right to determine if permits are necessary for maintaining non-tidal drainages and stormwater features.



## 2.3 WETLAND FUNCTIONAL ASSESSMENT

A wetland functional assessment was performed concurrent to the wetland delineation effort and in accordance with the *Wetlands Functions and Values: A Descriptive Approach* described in *The Highway Methodology Workbook Supplement* (USACE 2015). This descriptive approach to wetland evaluation uses a series of questions relating to the qualitative characteristics of a wetland to determine if a wetland effectively provides up to 13 key functions (8 each) and values (5 each) as described below. Evaluators identify if a function or value is present and if present, determine if the characteristic serves as a principal component of the wetland ecosystem or special value to society. Completed functions and values data forms and a description of the Consideration and Qualifier codes used in this assessment are included in Appendix B.

**Functions** - are properties within the wetland ecosystem that are present in the absence of humans and occur without regard to subjective human values. Functions are a result of the interactions between the living and nonliving components of a specific wetland. They are processes necessary for the self-maintenance of the wetland, including nutrient cycling and primary production. The wetland functions assessed included:

- 1) Groundwater Recharge/Discharge – The potential for a wetland to serve as a groundwater recharge and/or discharge area.
- 2) Flood-flow Alteration – The effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events.
- 3) Fish - The effectiveness of the wetland to provide fish habitat.
- 4) Sediment/Toxicant/Pathogen Retention – The ability of the wetland to reduce or prevent degradation of water quality by trapping sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.
- 5) Nutrient Removal/Retention/Transformation – The effectiveness of the wetland to prevent adverse effects of excess nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers, or estuaries.
- 6) Production Export (Nutrients) – The effectiveness of the wetland to produce food or usable products for humans or other living organisms.
- 7) Sediment/Shoreline Stabilization – The effectiveness of a wetland to stabilize streambanks and shorelines against erosion.
- 8) Wildlife Habitat – The effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge.

**Values** - are perceived benefits (to humans) that derive from one or more wetland functions and/or the physical characteristics. The value of a wetland function is based on societal judgment of the worth, quality, or importance of the function. The primary wetland values assessed included:

- 1) Recreational (consumptive & non-consumptive) – The effectiveness of the wetland and associated watercourses to provide recreational opportunities.
- 2) Educational/Scientific Value – The effectiveness of the wetland as a site for an “outdoor classroom”, or as a location for scientific study or research.
- 3) Uniqueness/Heritage – The effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location.
- 4) Visual Quality/Aesthetics – The overall visual and aesthetic quality of the wetland.
- 5) Rare, Threatened and Endangered Species – The effectiveness of the wetland to support threatened or endangered species.

## **2.4 VERNAL POOL SURVEY**

Vernal pool surveys were not a component of this delineation since surveys for vernal pools (VPs) were previously conducted in the Project area per approved survey protocols (MAWS 2014; MDEP 2016a) 2012 and 2015 (NewEarth 2013a, 2015). However, the site was generally assessed for evidence of potential amphibian breeding areas.

## **2.5 OTHER PROTECTED WETLAND AND AQUATIC RESOURCES**

Shorebird nesting, feeding and staging areas and high to moderate value inland and tidal waterfowl and wading bird habitats, as well as significant vernal pools, are also considered SWH and are regulated under Maine’s NRPA (MDEP 1988). The MDEP regulates activities in, on, over and adjacent to (adjacent typically meaning within 250 feet of) designated SWH which are often wetlands or are associated with wetlands. Locations of Maine’s designated SWH areas are maintained by MDEP and available online (MDEP 2014, 2016b, 2017).

Maine’s NRPA (MDEP 1988) also provides additional protections and mitigation/compensation requirements for wetlands which are defined as WOSS. These wetlands contain features that have special ecological value, and the preservation of the wetlands ensures the protection of the features and must meet at least one of the following criteria:

- A. Are within 250 feet of a coastal wetland;
- B. Contain one of the critically imperiled (S1) or imperiled (S2) wetland communities as identified by the Maine Department of Conservation Natural Areas Program;
- C. Are within 250 feet of a great pond;
- D. Contain or are a stream;
- E. Contain at least 20,000 square feet (sq ft) of aquatic or emergent vegetation or open water;
- F. Contain significant wildlife habitat, including significant vernal pools;
- G. Contain peatland; and/or,

H. Are within a floodplain.

## **2.6 GPS AND GIS MAPPING**

Wetland boundaries and waterbody features were demarcated using pink (wetland) or blue (water bodies) flagging by wetland scientists in the field. Submeter-accurate global positioning system (GPS) data was collected at each flag, using a Trimble®GeoExplorer 7000 series GPS, or equivalent. Reference points were also collected at fixed features such as utility and transportation poles and markers to facilitate geo-referencing with other survey data. A geo-referenced wetland and waterbody verification file suitable for overlay onto survey area maps and aerial photographs were created using ArcGIS Version 9.3.1 geographic information system (GIS) mapping software.

## **3.0 SUMMARY OF BACKGROUND INFORMATION**

### **3.1 SITE DESCRIPTION**

The Project site is located within the Presumpscot-Royal River watershed (USGS Identification Number 01060001) and situated generally from The Nonesuch River to the Wainwright Sports Complex (Appendix A, Figure 1). Topography along the proposed trail is close to mean sea level and relatively flat and remains within the 5-foot to 15-foot above mean sea level elevation gradients throughout the site.

From its existing endpoint on the southwest side of the Nonesuch River in Scarborough, the proposed trail extends to the northeast on an abandoned railroad bed, then southeast through intact mixed mature forest to Chamberlain Road (Appendix A, Figure 1). The next segment extends generally eastward along the north edge of an existing utility line corridor to a location just east of Pleasant Hill Road. Through this area, the corridor is regularly maintained in a sapling tree/shrub height community due to utility line safety requirements. Much of the area along the corridor is surrounded by commercial development. The trail then shifts toward the north where it ties into an existing sand/gravel trail that abuts the perimeter of Prout's Pond and follows this existing path to a dirt/gravel road into an active wood waste processing facility. From here, the proposed trail continues generally to the north along the east side of a relatively stagnant stream then crosses to the west side of the stream and follows the edge of another utility line corridor. The area surrounding the trail from Prout's Pond to the sports complex is intact mature mixed forest. The proposed trail then departs the corridor and heads generally northwest where it eventually crosses through the Wainwright Sports Complex and ties into the endpoint of the existing Eastern Trail segment at Gary L Maietta Way in South Portland. The portion within the sports complex is comprised primarily of maintained athletic fields and parking lots.

A system of roadside stormwater drainages and culverts exist along most of the paved roadways in the Project site and are periodically maintained and mowed. Depending on the time since last mowed/maintained, some stormwater management features can be dominated by dense wetland vegetation.



### 3.2 SOILS

Nine soil mapping units occur within the Project area (USDA 2013b, 2014). Of these, four are classified as hydric soils; which can be indicative of the presence of wetland communities (Appendix A, Figure 2). Hydric soils are mostly concentrated along the floodplain of the Nonesuch River at the eastern most end of the trail and also in the vicinity of the Wainwright Sports Complex located in the northern most portion of the Project. Soils in most of the Project site, particularly from Prout's Pond to the Wainwright Sports Complex, have experienced significant past alteration and filling.

### 3.3 NWI MAPPED WETLANDS

According to USFWS NWI data (USFWS 2018), three wetland complexes occur within 75 feet of the Project area, and numerous additional wetlands occur beyond 75 feet of the site (Appendix A, Figure 3). Much of the NWI data has not been field verified, however, presence of NWI wetlands is often a good indicator that jurisdictional wetlands occur in the area. Two of the wetlands are classified as palustrine (freshwater) forested, broad-leaved deciduous (PFO1) wetlands and the third is classified as palustrine (freshwater) scrub-shrub, broad-leaved deciduous (PSS2) under the Cowardin classification system (Cowardin et. al., 1979).

### 3.4 USGS MAPPED WATERBODIES

Three waterbodies are identified on the latest USGS 7.5-minute topographic quadrangle maps (USGS 2017) near the proposed trail alignment (Appendix A, Figure 1). The mapped waterbodies include the tidal Nonesuch River, and two unnamed tributaries to Spurwink Creek; both identified as perennial streams (i.e., solid lines on the USGS topographic map). Historically, several additional streams were documented in the vicinity of the Wainwright Sports Complex (USGS 1910, 1945), but most appear to have been highly altered or eliminated through site alterations that took place in the early 1950's.

### 3.5 OTHER PROTECTED WETLAND AND AQUATIC RESOURCES

According to available natural resource databases and maps (BwH 2018; MDEP 2014, 2016b, 2017), no regulated WOSS or SWH, including vernal pools, are known to occur within or immediately adjacent to the Project site (Appendix A, Figure 3).

## 4.0 FIELD SURVEY RESULTS

Delineated resources were classified into their appropriate regulatory category as described above, and included the following: six wetlands, four streams and six stormwater drainages/wetlands (Appendix A, Figure 3). No potential vernal pool breeding areas were encountered on site during previous surveys or this field investigation (NewEarth 2013a, 2015). Of note, regulatory and natural resource agencies such as the USACE, MDEP, MDIFW, USFWS may at their discretion interpret results and the regulatory status of identified features differently than described herein. Agencies should be contacted early in the permitting process to discuss features and obtain direct regulatory guidance.

## 4.1 WETLANDS

Six wetland complexes were delineated during this survey which would likely be subject to regulation under Maine's NRPA and the USACE Clean Water Act and are summarized in Table 1 (Appendix A, Figures 4 through 9). Based on the predominant classification within the likely impact area of the proposed Project, four wetlands are classified primarily as palustrine (non-tidal) scrub-shrub (PSS) and two are primarily palustrine forest (PFO); as defined by Classification of Wetlands and Deepwater Habitats (Cowardin, et. al., 1979). Wetland data forms are provided in Appendix B.

Most of the wetland complexes of the Project area were likely originally part of extensive wetland complexes located in the general area prior to manipulation and development which has split many of the original communities in the region into numerous smaller areas bisected by roadways, utility lines and commercial properties. Most of the remaining wetland communities delineated during this survey are in some way hydrologically-connected to one another via culverts and stormwater management drainages.

**Table 1. Delineated Wetlands in the Eastern Trail Connector Project Area.**

Wetland ID	USFWS Cowardin Classification <sup>1</sup>	WOSS <sup>2,3</sup>	Description
W1	PFO	1, 2, 3, 4	Floodplain forested wetland associated with the stream S-1 (Nonesuch River). Wetland is mostly PFO along the proposed trail route, but parts of wetland to the northwest of the trail/railroad bed and along the floodplain of S-1 are dominated by PSS, as well as PEM wetland >20,000 sq. ft.
W2 and W3	PSS	none	Small wetland pockets associated with stormwater drainage ditch D-1 and storm drains from adjacent commercial properties. Abut commercial development and is located at the edge of, and extending across, a utility line right-of way. Small pockets of PEM can be found within the larger complex.
W4	PSS	1	Associated with a utility line corridor and the Maine Turnpike Authority Prout's Pond wetland mitigation site. Wetland is mostly PSS along the proposed trail route due to utility line maintenance, but PFO, as well as PEM and open water 20,000 sq. ft., are found throughout the larger complex.
W5	PFO	2	Forested wetland to east of Stream S-2 and along roadside drainage ditch D-3. Has highly modified areas with fill material and debris throughout. Stream channel and ditch likely dredged in past and fill deposited adjacent to shoreline.
W6	PSS	1, 2	Shrub wetland aligning banks of Streams S-2, S-3 and S-4 and drainage ditches D-4, D-5 and D-6. Some areas highly modified; fill material and debris throughout. Stream channels and ditches likely dredged in past and fill deposited adjacent to shoreline. Wetland is mostly PSS along the proposed trail route, but small areas of both PFO and PEM wetland types can be found in the community.

<sup>1</sup> Cowardin et. al., (1979) classifications: PFO = palustrine forest; PSS = palustrine scrub-shrub.

<sup>2</sup> Wetland of Special Significance (WOSS).

<sup>3</sup> WOSS Criteria Met: 1 = Contains at least 20,000 square feet of aquatic or emergent vegetation or open water; 2 = Contains or is a stream; 3 = Are within a floodplain; 4 = are within 250 feet of tidal or subtidal lands (i.e., coastal).

#### 4.1.1 Palustrine Forest (PFO)

Within the proposed Project footprint, wetlands W1 and W5, are comprised primarily of a Palustrine Forest Wetland (PFO) community, which is characterized by the presence of a tree canopy layer greater than 20 feet tall and with greater than 30% cover (Appendix A, Figures 4 through 9; Appendix C, Photographs). The micro-topography of these PFO wetlands is comprised of pits and mounds (also referred to as hummocks and pools) that result in varied hydrologic conditions and a diverse suite of plant species within the complex; this typically includes many upland plants that reside on the elevated mounds. The shrub layer is relatively sparse (less than 25% cover) but can reach 80% cover in canopy openings and along forest edges. Ground cover in the PFO complexes can range from 25 percent cover to greater than 90 percent; particularly in low-lying ephemeral areas that dry out early in the growing season and in openings of the forest canopy.

Dominant trees in the canopy include red maple (*Acer rubrum*), balsam fir (*Abies balsamea*), green ash (*Fraxinus pennsylvanica*). Due to the hummocky topography the wetlands are also comprised of some species more typical of uplands on elevated mounds, including white pine (*Pinus strobus*), quaking aspen (*Populus tremuloides*), white oak (*Quercus alba*), and northern red oak (*Quercus rubra*). Where present, the most common species in the shrub stratum include sapling tree species and shrubs such as speckled alder (*Alnus incana*), common winterberry (*Ilex verticillata*), highbush blueberry (*Vaccinium corymbosum*), with steplebush (*Spiraea tomentosa*), broad-leaf meadowsweet (*Spiraea latifolia*), arrow-wood (*Viburnum recognitum*), more common in open areas along edges.

The herbaceous stratum of these PFO wetlands is fairly diverse, with some areas having little to no herbaceous cover, while other locations are densely vegetated. Where herb cover is present, ferns typically dominate and include sensitive fern (*Onoclea sensibilis*), cinnamon fern (*Osmunda cinnamomea*), and royal fern (*Osmunda regalis*). Other species found in the herb layer include by jewelweed (*Impatiens capensis*), bristly dewberry (*Rubus hispidus*), and a diversity of asters (*Symphyotrichum* spp.), goldenrods (*Solidago* spp.) that were not identifiable to genus/species due to lack of inflorescence. The only vine noted within the PFO wetlands was poison ivy (*Toxicodendron radicans*). The invasive species common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*), and Morrow's honeysuckle (*Lonicera Morrowii*) were observed along the edges of PFO wetlands.

The adjacent upland areas are comprised of a mix of upland (UPL) and facultative (FAC) plants including in the overstory; white pine, red maple, balsam fir, hemlock, quaking aspen, and northern red oak. The shrub and herbaceous layers consisted of witch hazel (*Hamamelis virginiana*), sarsaparilla (*Aralia nudicaulis*), blue bead lily (*Clintonia borealis*), poison ivy, maystar (*Trientalis borealis*), false lily-of-the-valley (*Maianthemum canadense*), and bracken fern (*Pteridium aquilinum*). The invasive species Japanese barberry (*Berberis thunbergii*), Japanese knotweed (*Reynoutria japonica*), Morrow's honeysuckle (*Lonicera morrowii*), Asian bittersweet (*Celastrus orbiculatus*), glossy buckthorn (*Rhamnus frangula*), and Russian olive (*Elaeagnus angustifolia*) are also commonly found in open upland areas near the wetland edges. In some areas the composition of hydrophytic plant species in upland areas also exceeded 50 percent and met USACE criteria for wetland vegetation; but did not meet the additional required parameters (i.e., soils and hydrology) for designation as wetland.



These wetlands are situated on areas classified as hydric soils by the USDA (USDA 2013a) and include types So, Sp, and Sz (Appendix A, Figure 3). Investigation of the soils revealed the wetlands met at least one indicator of prolonged inundation/saturation, including Loamy Gleyed Matrix (F2) or Depleted Matrix (F3). The adjacent upland soils failed to exhibit hydric soil indicators due to the lack of a muck surface layer and high chroma of the underlying layers.

The most obvious indicators of wetland hydrology observed included high water table (A2), saturation (A3), water marks (B1), and oxidized rhizospheres (C3). No indicators were observed in the surrounding upland.

#### 4.1.2 Palustrine Scrub-shrub (PSS)

Wetlands in this classification include W2, W3, W4 and W6, and are classified as palustrine scrub-shrub (PSS) wetlands which are dominated by woody vegetation (including both trees and shrubs) less than 6 m (20 feet) tall (Appendix A, Figures 4 through 9; Appendix C, Photographs). Within the Project site, all of these wetlands appear to have been modified in the past as evidenced by young sapling trees (W-6) or are continuously maintained in a shrub-herb strata through utility line maintenance activities (W-2, W-3, and W-4). Dominant shrubs include speckled alder (*Alnus incana*), arrow-wood (*Viburnum recognitum*), broad-leaf meadowsweet (*Spirea latifolia*), catberry (*Nemopanthus mucronata*), and winterberry (*Ilex verticillata*). The herbaceous layer in these communities can be diverse, and in some areas may dominate in small low-lying areas. Common herbs include soft rush (*Juncus effusus*), narrow-leaved cattail (*Typha angustifolia*), sensitive fern (*Onoclea sensibilis*), cottongrass bulrush (*Scirpus cyperinus*), and a wide diversity of aster (*Symphyotrichum* spp.), goldenrod (*Solidago* spp.), and sedge (*Carex* spp.) species. Although dominated by shrubs, sapling trees less than 20 feet in height are common in each of these wetlands and include red maple, willow, and gray birch (*Betula populifolia*).

The adjacent upland area contains a mix of facultative (FAC) and facultative upland (FACU) plants including bracken fern, low bush blueberry (*Vaccinium angustifolium*), goldenrod, field horsetail (*Equisetum arvense*), red raspberry (*Rubus idaeus*), serviceberry (*Amelanchier* spp.), blackberry (*Rubus allegheniensis*), rose (*Rosa virginiana*), vetch (*Vicia sativa*), plantain (*Plantago major*), dandelion (*Taraxacum officinale*), yarrow (*Achillea millefolium*), mugwort (*Artemisia vulgaris*), and common juniper (*Juniperus communis*). The invasive species Japanese barberry, Japanese knotweed, Morrow's honeysuckle, Asian bittersweet, Russian olive, and tansy (*Tanacetum vulgare*) also commonly found along the edges of PSS/PEM wetlands, particularly in open upland utility right-of-ways.

Based on the USDA classification and mapping, most of the Project area wetlands occur on hydric soils types (USDA 2013a) that include Sd, So, Sp, Sz and Au (Appendix A, Figure 2). Whereas, others occur on non-hydric soils including DeA, DeB, Gp, WmB, and WmC. But, based on site investigations, each of these wetlands met at least one indicator of prolonged inundation/saturation, including Depleted Matrix (F3) and Sandy Redox (S5). The adjacent upland soils failed to exhibit hydric soil indicators due to the lack of a muck surface layer and high chroma of the underlying layers.

Several indicators of wetland hydrology were observed at the time of survey. The most obvious indicators included high water table (A2), saturation (A3), oxidized rhizospheres (C3), and water-stained leaves (B9).

## 4.2 WATERBODIES

Four waterbodies were identified within 25 feet of the proposed trail alignment that meet the definition of a river, brook or stream per Maine's NRPA, and would be subject to regulation under the USACE's Section 404 of the Clean Water Act (Appendix A, Figures 4 through 9) (Table 2). None of the Project area waterbodies are identified as Navigable Waters of the United States by the USACE (USACE 2006). But, the head of the tidal Nonesuch River is upstream of the Project site, and therefore the river would be subject to USACE Section 10, Rivers and Harbors Act Jurisdiction (USACE 2006).

**Table 2. Summary of Waterbodies in the Eastern Trail Connector Project Area**

ID	Waterbody Name/Type	Channel Hydrologic Classification	Meets NRPA Stream Definition? (Criteria Met) <sup>1</sup>
S-1	Nonesuch River	Tidal	Yes (A, B, C, D and E)
S-2	Unnamed Tributary Prout's Pond to Spurwink Creek	Perennial Stream (modified)	Yes (B, D, E)
S-3	Unnamed Tributary to S-2	Intermittent Stream (modified)	Yes (B, D)
S-4	Unnamed Tributary to Spurwink Creek	Intermittent Stream (modified)	Yes (A, B, D and E)

<sup>1</sup> **NRPA Criteria:** A = feature is depicted on the most recent edition of the USGS 7.5-minute series topographic map; B = feature contains or is known to contain flowing water continuously for a period of at least 6 months of the year in most years; C = channel bed is primarily composed of mineral material deposited or scoured by water; D = channel contains aquatic animals such as fish, aquatic insects or mollusks in the water or stream bed; E = channel contains aquatic vegetation and is devoid of upland vegetation.

### 4.2.1 Waterbody S-1

The tidal Nonesuch River is located at the eastern end of the proposed trail alignments A and B (Appendix A, Figures 4 and 5; Appendix C, Photographs). The waterbody meets all five of the NRPA criteria which define a stream (Table 2), and would therefore be regulated as a MDEP stream, brook or river. The river is a tidally-influenced oligohaline (<0.5 ppt) to fresh water system. Water depth in the channel at the time of the survey ranged from 2.0 to 4.0 feet, depending on tidal flow. Within the project area the river is 25 feet wide, but nearby is up to 70 feet wide. The substrate is composed of sand with a moderate amount of leaf litter. FEMA-designated floodplain areas abut much of the river system (Appendix A, Figures 3).

### 4.2.2 Waterbody S-2

This perennial feature is located along a gravel access area to the northeast of Prout's Pond (Appendix A, Figures 4, 8 and 9; Appendix C, Photographs). The feature is un-naturally linear (i.e., canal-like) and extends from the pond northward to Spurwink Creek. Significant fill material (now vegetated with shrubs, sapling trees and trees > 20 feet in height) align the stream banks, suggesting that much of the channel was excavated in the past. Discussions with the landowner (Donald Prout) indicate that much of the entire area from Prout's Pond to north of the

now Wainwright Sports Complex was excavated in the 1940's to drain wetlands for farming; topographic maps support this claim (USGS 1910, 1945). Although the feature has likely been modified, the waterbody meets three of the five NRPA criteria which define a stream (Table 3), and therefore could be regulated by the USACE and/or MDEP as a stream, brook or river. Water depth in the feature at the time of the survey ranged from 1.0 to 3.0 feet, and the bank-to-bank width is 8.0 to 10.0 feet. The substrate is composed primarily of deep organic material. Aquatic vegetation in the channel is dominated by the invasive species Eurasian water milfoil (*Myriophyllum spicatum*), but also includes cattails, water lilies (*Nymphaeaceae* Spp.), and pickerelweed (*Pontederia cordata*). A review of USGS topographic maps dating back to 1910 does not identify the feature as a stream.

#### 4.2.3 Waterbody S-3

This intermittent stream is located within a large tract of mature forest to the southwest of the Wainwright Sports Complex and is a tributary to Waterbody S-2 which ultimately drains into Spurwink Creek (Appendix A, Figures 4 and 9; Appendix C, Photographs). Spoil material (now vegetated with trees > 40 feet in height), align some areas of the stream banks. This, and topographic maps, indicate that much of the area was modified in the past (USGS 1910, 1945). More recent excavations were also noted adjacent to several drainages in the nearby area (Appendix C, Photographs). Although the feature likely has been modified, the waterbody meets two of the five NRPA criteria which define a stream (Table 2), and therefore could be regulated by the USACE and/or MDEP as a stream, brook or river despite being modified. Water depth in the stream at the time of numerous visits to the site between 2013 and 2018) ranged from 1.0 to 2.0 feet, although, on several visits the water appeared stagnant, and was thick with algae. The bank-to-bank width ranged from 5.0 to 8.0 feet and the substrate is composed primarily of deep organic material and some gravel. A review of USGS topographic maps dating back to 1910 show the approximate location of this stream on the 1910 map, but does not identify the feature as a stream on any topographic maps since (USGS 1910, 1945, 2012, 2017). The feature does appear to be serving the function of a stream resource. As noted, it is believed that much of this area was excavated in the 1940's to drain wetlands and improve conditions for farming.

#### 4.2.4 Waterbody S-4

This perennial tributary to Spurwink Creek is located along the east perimeter of the Wainwright Sports Complex and extends to the southeast crossing Highland Avenue (Appendix A, Figures 4 and 9; Appendix C, Photographs). The edge of proposed trail abuts the much of the stream as it crosses through the Wainwright Sports Complex (Appendix A, Figure 1). A review of USGS topographic maps identify a perennial stream in the approximate location of this feature, and the feature first appears on USGS maps in 1945 when the entire area is believed to have been ditched to promote farming (USGS 1945). The waterbody may not have natural origins, however, as identified in Table 2, the feature meets four of the five NRPA criteria which define a stream, and therefore could be regulated by the USACE and/or MDEP as a stream, brook or river. Water depth in the stream at the time of the survey ranged from 2.0 to 3.0 feet, and the bank-to-bank width ranges from 8.0 to 15.0 feet. The substrate is composed primarily of deep organic material. Aquatic vegetation in the channel is dominated by cattails, water lilies (*Nymphaeaceae* Spp.), and pickerelweed (*Pontederia cordata*) and appear to be increasing in density when compared to 2013 results.



### 4.3 STORMWATER DRAINAGES AND WETLANDS

Six drainages were identified in the Project area (Appendix A, Figures 5 through 9; Appendix C, Photographs). The drainages may possess some characteristics of wetlands (i.e., hydric soils and plants), or stream features, but they generally are not subject to federal or state regulation (i.e., non-jurisdictional features).

The drainages are narrow mostly linear features that originate from culverts and appear to have been created primarily by stormwater flow from the commercial properties located adjacent to the Project site (Appendix C, Photographs). They range from 1 to 3 feet wide and generally have a gravel and leaf litter substrate. Some portions of the features appear to have been excavated to create linear channels whereas channelization is barely discernable in other areas. Stormwater runoff from drainage features eventually flows directly into adjacent wetlands or stream features that meet Maine's NRPA definition of a stream resource. Stagnant standing water, algae, trash, coarse sand and fill material were observed in some portions of all drainages.

One drainage abutting the southwest perimeter of the Wainwright Sports Complex, was identified as a stream during the 2013 assessment based on intermittent flow, depiction on historic topographic maps, and presence of fish and aquatic organisms. However, during the 2018 assessment, portions of the channel bed were dry, whereas other areas had stagnant, trash and algae-filled water, devoid of aquatic animals. Additionally, a realignment of topographic maps indicates the feature was not present on historic topographic maps. Given these conditions, the feature does not meet the NRPA definition of a stream and was categorized as a drainage feature.

### 4.4 WETLAND FUNCTIONAL ASSESSMENT

Of the 13 functions and values evaluated, nine are provided at some level by the wetlands located within the Project area (Table 3). Only three functions, "Floodflow Alteration", "Sediment-Toxicant Retention", and "Wildlife Habitat", are provided at levels significant enough to be identified as primary functions of any of the wetlands. The wetlands offering these primary functions include W-1, W-4 and W-5; mostly since wetlands occur within depressions, abut impervious surfaces and sources of sediment and toxin input, are well-vegetated, have somewhat constricted outflow that allows for water retention and removal of pollutants, and due to their large area (relative to what is available). These wetlands may also provide habitat for state or federally-listed species such as bats and New England Cottontail. Generally, however, these wetlands provide functions and values at low levels when compared to wetlands found outside of such a highly developed setting that is characteristic of the Project site.

Factors relating to overall low functions and values include: Narrow side/width of W2, W3 and W6, intense human activity in an along the wetlands and adjacent upland areas; degraded conditions due to sand/sediment/trash/chemical input from the adjacent roadways and past site disturbances; marginal undisturbed buffer along most of the wetland boundaries; poor water flow/quality with oil sheen and brown-green algal blooms in many low-lying areas; and, proximity to high-use roads. Details are provided on data forms in Appendix B.

**Table 3. Functions and Values Provided by Wetlands in the Eastern Trail Connector Project Area.**

Wetland ID	Groundwater Recharge-Discharge	Floodflow Alteration	Fish and Shellfish Habitat	Sediment-Toxicant Retention	Nutrient Removal-Retention-Transformation	Production Export	Sediment-Shoreline Stabilization	Wildlife Habitat	Recreational	Educational-Scientific Value	Uniqueness-Heritage	Visual	Rare, Threatened and Endangered Species
W1	S	P	S	S	S	S	S	P	-	-	-	-	S
W2	-	-	-	S	S	-	-	S	-	-	-	-	-
W3	-	-	-	S	S	-	-	S	-	-	-	-	-
W4	-	S	-	P	S	-	-	P	-	-	-	-	S
W5	-	S	-	P	S	-	-	P	-	-	-	-	S
W6	-	-	-	-	-	-	S	S	-	-	-	-	-

Key: - function or value not provided at a meaningful level; S = wetland suitable for the given function or value; P = indicated a primary function or value offered by the wetland.

#### 4.5 VERNAL POOLS

No new low-lying water-filled potential vernal pool habitat was observed in the Project site.

#### 4.6 OTHER PROTECTED WETLAND AND AQUATIC RESOURCES

No additional protected wetland or aquatic resources were identified through evaluation of state natural resource databases (BwH 2018; MDEP 2014, 2016b, 2017) or the on-site field assessment (Appendix A, Figure 3). However, four wetlands met at least one of the criteria identified in Section 2.5 for designation as WOSS under Maine's NRPA (Table 1):

##### Wetland W-1

Portions of wetland complex W-1 would qualify as a freshwater wetland of special significance (WOSS) under NRPA for the following reasons:

- 1) Wetland is located within FEMA Flood Protection Zone A.
- 2) Portions of the wetland fall within 25 feet of the Nonesuch River.
- 3) The entire boundary of the wetland complex was not delineated, however, based on a review of aerial imagery portions of the wetland is likely comprised of greater than 20,000 square feet of emergent vegetation.

Portions of the Nonesuch River and adjacent wetlands are also designated Tidal Waterfowl and Wading Bird Habitat – a significant wildlife habitat (SWH) under NRPA (Appendix A, Figures 4 and 5). The trail alignment considered in this assessment falls just outside of this habitat area.

This wetland complex also falls within an MDIFW designated significant wildlife habitat polygon for the state endangered New England Cottontail (Appendix A, Figure 3). An onsite

investigation with staff from MDIFW in September 2012 determined that the habitat within the vicinity of wetland W1 was not suitable for New England Cottontail (NewEarth 2012), although habitat conditions have changed somewhat since.

### **Wetland W-2 and W-3**

These wetlands occur within an area identified as suitable habitat for the state endangered New England Cottontail (NEC) (NewEarth 2012) (Appendix A, Figure 3). The site visit held with MDIFW staff in 2012 confirmed that large areas of the existing utility line corridor (including areas within and surrounding these wetlands) was potential NEC cottontail habitat. As such, PSS wetlands W-2, W-3 and W-4 would therefore be considered freshwater wetlands of special significance regulated under NRPA. As previously noted, site conditions have changed somewhat since the 2012 site visit, particularly near these wetland complexes which are maintained periodically as part of general utility line maintenance activities.

### **Wetland W-4**

A portion of wetland W-4 also occurs within an area of utility line corridor that, based on the 2012 site visit with MDIFW staff, is suitable habitat for the state endangered NEC (NewEarth 2012) (Appendix A, Figure 3).

Wetland W-4 is also located adjacent to the 33-acre Prout's Pond (Appendix A, Figures 4 and 7). Maine state statutes define natural lakes and ponds greater than ten acres in size as Great Ponds, and wetlands within 250 feet of a Great Pond are considered WOSS by MDEP. However, the feature does not appear on 1910 topographic maps (USGS 1910), is identified as a borrow pit on 1945 maps (USGS 1945) and is identified as an unnamed water feature recent maps (USGS 2017). Based on this review the pond is believed to be of unnatural origin and therefore would not meet MDEP's definition of a Great Pond.

Finally, based on a review of aerial imagery portions of W-4 are comprised of greater than 20,000 square feet of emergent vegetation, which would also qualify the wetland as WOSS. WOSS designation of W-4 should be discussed with permitting agencies since most of the wetland was created as mitigation and is not a naturally-occurring feature.

### **Wetlands W-5 and W-6**

A portion of wetland W-5 and much of wetland W-6 abuts waterbodies that meet Maine's NRPA definition of a stream (Appendix A, Figures 4, 7, 8 and 9). Areas of wetlands within 25 feet of NRPA streams would most likely be considered WOSS.

## **5.0 SUMMARY**

Below is a summary of the findings of potential protected resources documented in this report. As noted, further coordination with appropriate MDEP and USACE staff and other relevant natural resource protection agencies is recommended for a final determination regarding environmental permitting requirements for any potential impact from the Project to these resources, and for information on known protected species or habitats that agencies may be



aware of in the project area. Typically, this would include correspondence with the Maine Natural Areas Program (MNAP), MDIFW, the Maine Historic Preservation Commission (MHPC), the USFWS, and Native American tribal organizations.

### **Wetlands**

Field investigation identified and delineated six wetland areas which meet the criteria for designation as regulated wetlands per Maine Statute §480-B, Article 5-A of the NRPA or Section 404 of the Clean Water Act (Appendix A, Figure 4; Appendix C, Photographs).

### **Waterbodies**

Four waterbodies were identified that meet the criteria for designation as a regulated waterbody per Maine Statute §480-B, Article 5-A of the NRPA or Section 404 of the Clean Water Act (Appendix A, Figure 4; Appendix C, Photographs). The Nonesuch River, a tidal waterway, is also subject to regulation as a navigable waterway under Section 10 of the USACE's Rivers and Harbors Act.

### **Other Protected Wetland and Aquatic Resources**

Wetlands W1, W4, W5 and W6 meet at least one criterion for designation as WOSS per NRPA.

No SWH was observed during surveys and none have been documented in the Project site by federal or state natural resource agencies (Appendix A, Figure 3). However, potential suitable habitat for the state-listed New England Cottontail exists in the general Project area.

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# **Appendix A**

## **Figures**

**Figure 1. Site Location**

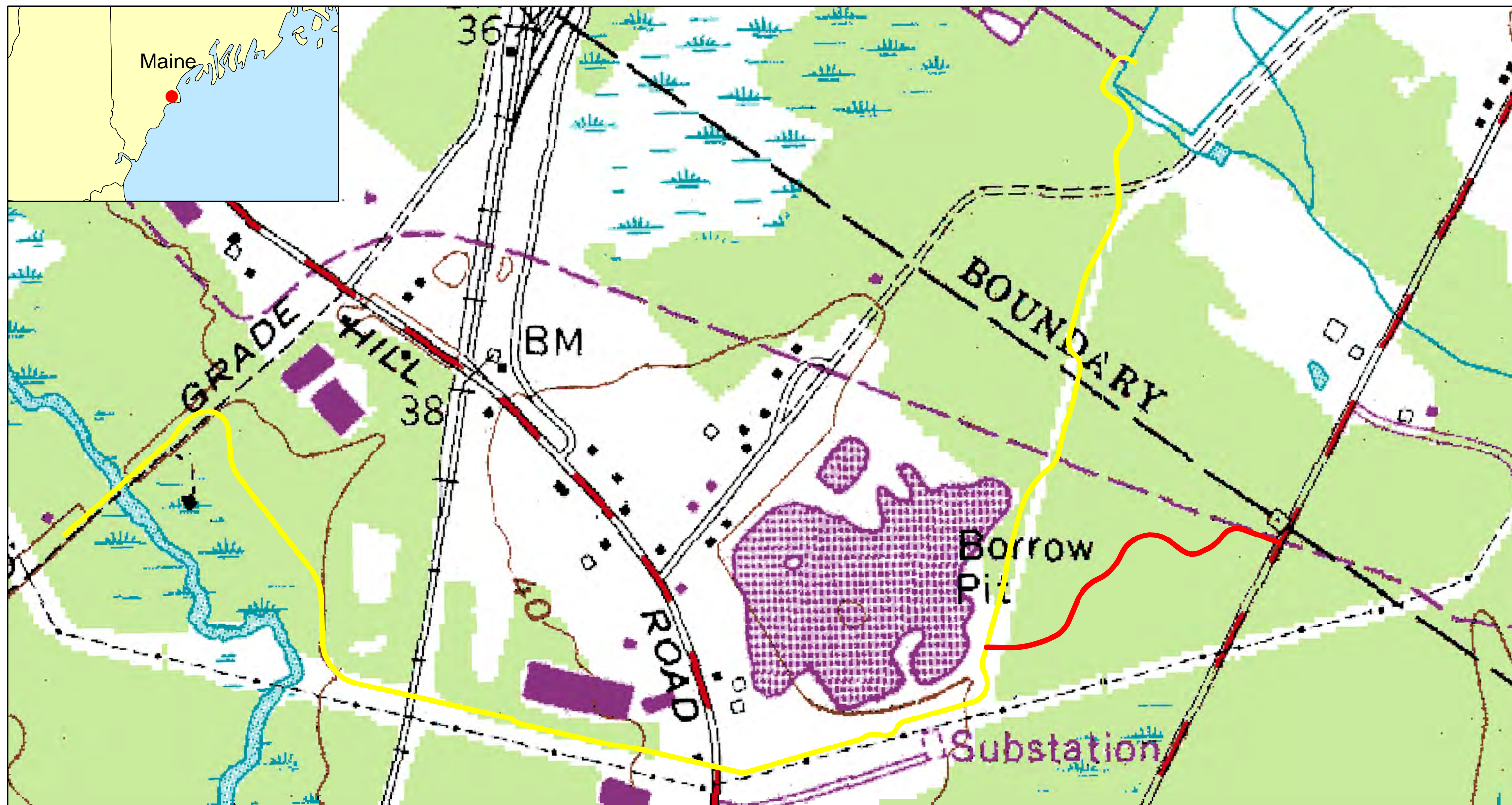
**Figure 2. USDA Soil Types**

**Figure 3. National Wetland Inventory Wetlands**


**Figure 4. Reference Sheet for Figures 5 through 9**

**Figures 5 - 9. Delineated Wetlands and Waterbodies**





Prepared For:  
HNTB Corporation


Prepared By:  


**Legend**


— Alternative A - Preferred Route

— Alternative B - Eliminated Due to Safety Issues

N



0 0.04 0.08 0.16 Miles

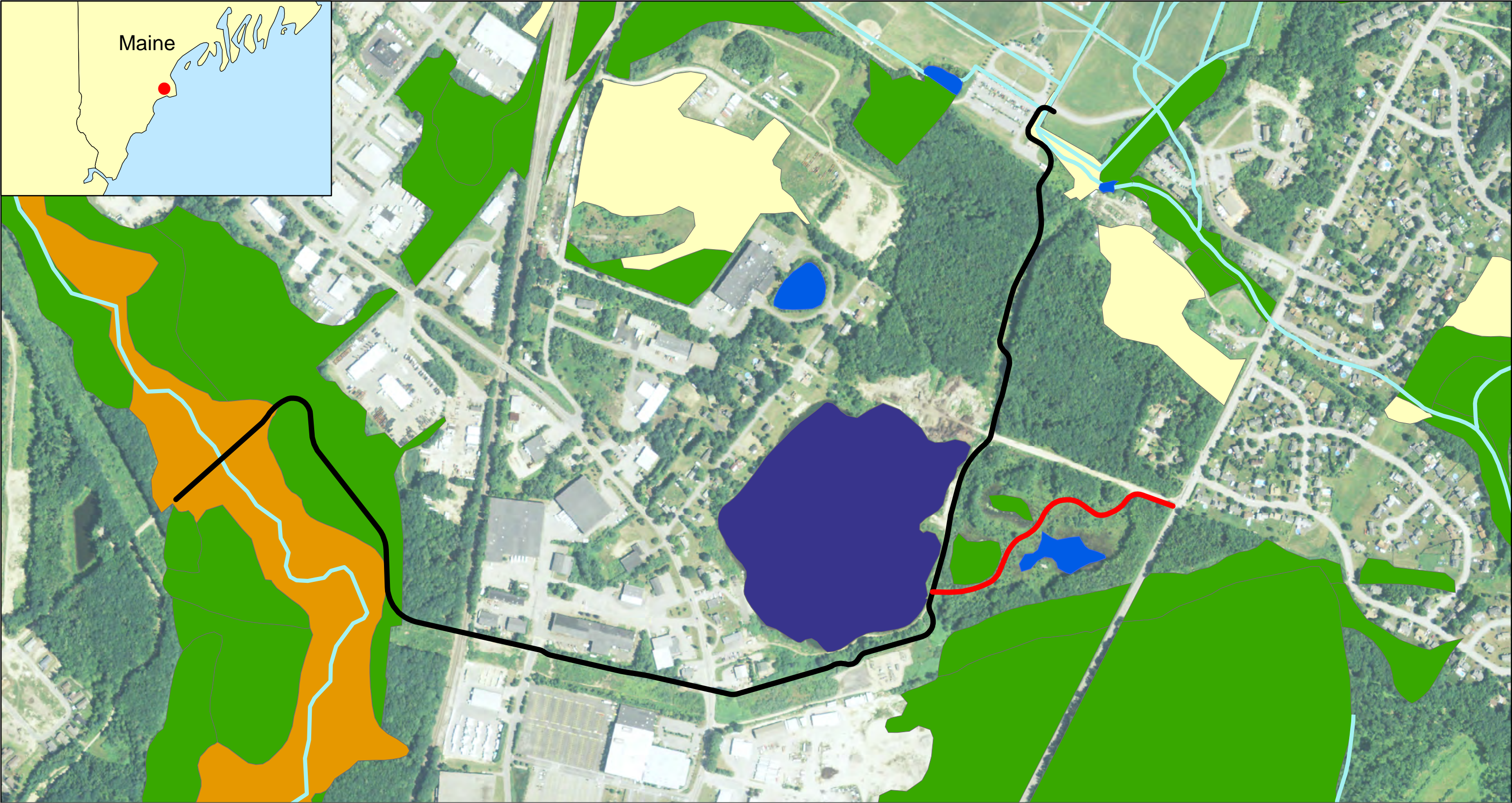


**Figure 1. Site Location and Topography of the Eastern Trail, Nonesuch River to Wainwright Field Connector Project, Scarborough and S. Portland, Maine.**

Source: United States Geological Survey, 1993.  
NewEarth Ecological Wetland Delineation, May and June 2013

Date: 10/15/2013














Prepared For:  
HNTB Corporation

Prepared By:  


**Legend**

	Alternative A - Preferred Route		Freshwater Emergent Wetland
	Alternative B - Eliminated Due to Safety Issues		Freshwater Forested/Shrub Wetland
	Stream		Freshwater Pond
	Estuarine and Marine Wetland		Lake

0 0.05 0.1 0.2 Miles



N


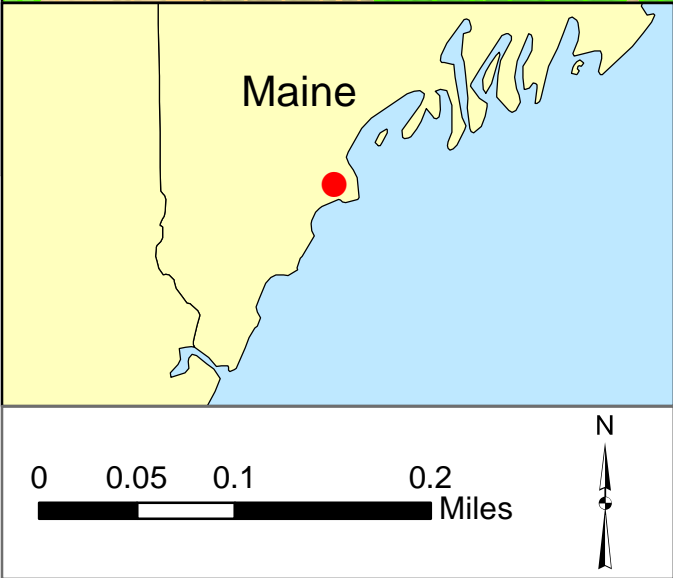
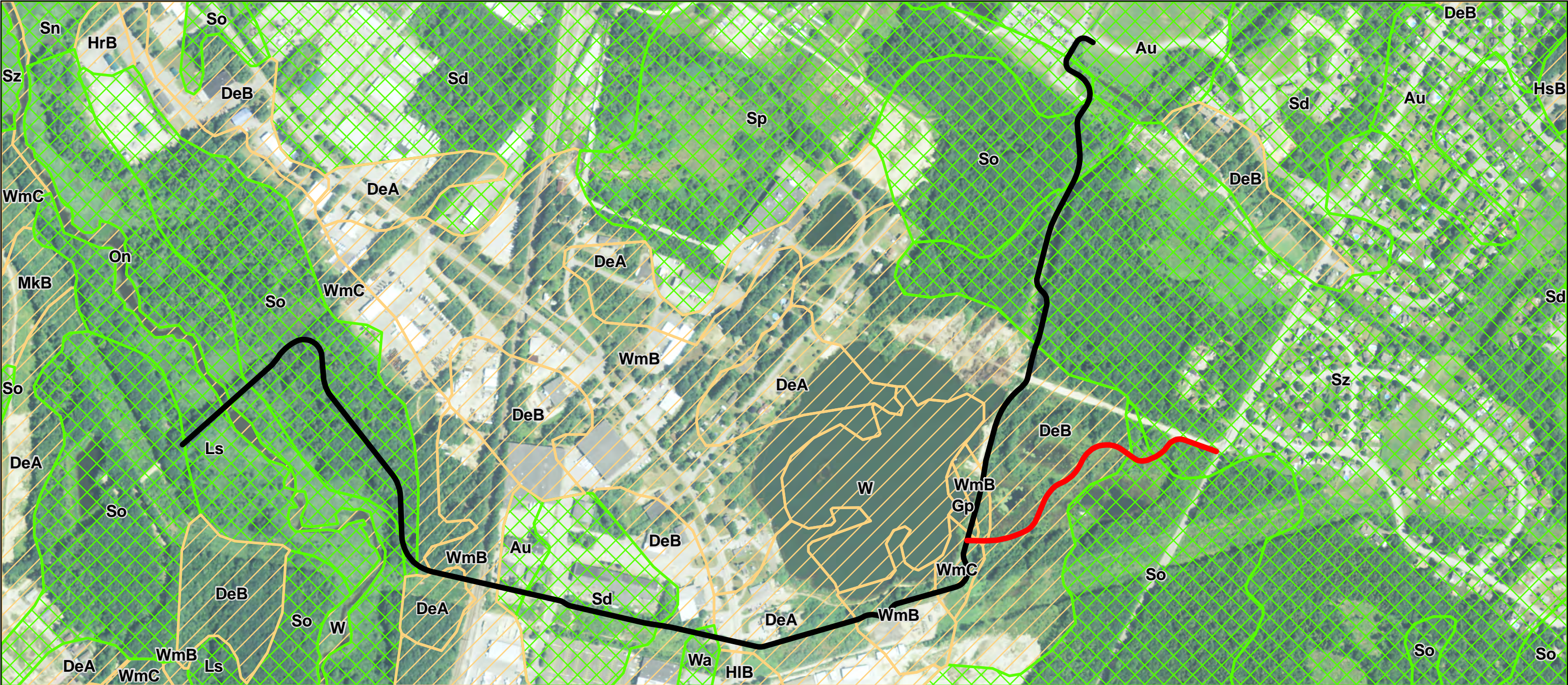


Figure 2. NWI Wetlands and Water Resources of the Eastern Trail, Nonesuch River to Wainwright Field Connector Project, Scarborough and S. Portland, Maine.

Source: United States Department of Agriculture, 2011.  
United States Fish and Wildlife Service.

Date: 10/15/2013





**Legend**

- Alternative A - Preferred Route
- Alternative B - Eliminated Due to Safety Issues
- Not Hydric
- Hydric

**Soil Unit - Description**

- Au - Au Gres loamy sand

DeA - Deerfield loamy sand, 0 to 3 percent slopes

DeB - Deerfield loamy sand, 3 to 8 percent slopes

Gp - Gravel pits

HIB - Hinckley gravelly sandy loam, 3 to 8 percent slopes

HrB - Hollis fine sandy loam, 3 to 8 percent slopes

HsB - Hollis very rocky fine sandy loam, 3 to 8 percent slopes

Ls - Limerick-Saco silt loams

MkB - Merrimac fine sandy loam, 3 to 8 percent slopes
- On - Ondawa fine sandy loam

Sd - Saugatuck loamy sand

Sn - Scantic silt loam

So - Scarborough sandy loam

Sp - Sebago mucky peat

Sz - Swanton fine sandy loam

W - Water

Wa - Walpole fine sandy loam

WmB - Windsor loamy sand, 0 to 8 percent slopes

WmC - Windsor loamy sand, 8 to 15 percent slopes

Figure 3. NRCS Soil Types of the Eastern Trail, Nonesuch River to Wainwright Field Connector Project, Scarborough and S. Portland, Maine.

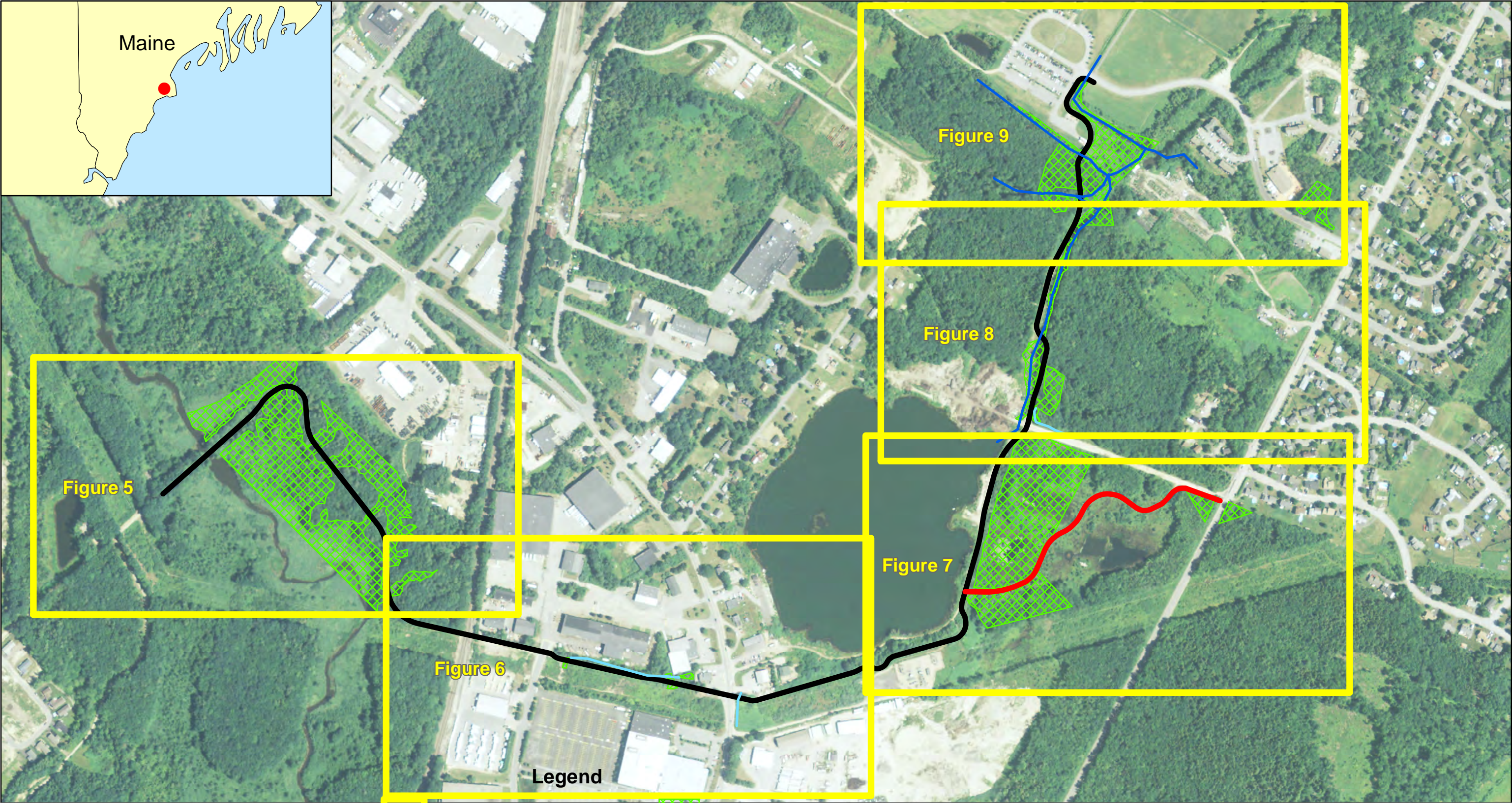
Prepared For:  
HNTB Corporation

Prepared By:  
 **NewEarth**  
ECOLOGICAL CONSULTING, LLC

Source: United States Department of Agriculture, 2011. Natural Resources Conservation Service, United States Geological Survey.

Date: 10/15/2013





Prepared For:  
HNTB Corporation

Prepared By:  


- Associated Reference Figure Locations
- Wetlands
- Ditch
- Stream
- Alternative A - Preferred Route
- Alternative B - Eliminated Due to Safety Issues

0 0.05 0.1 0.2 Miles



Figure 4. Overview of Field Verified Wetland and Water Resources of the Eastern Trail, Nonesuch River to Wainwright Field Connector Project, Scarborough and S. Portland, Maine.

Source: United States Geological Survey, 1993.  
NewEarth Ecological Wetland Delineation,  
May and June 2013

Date: 10/15/2013





Prepared For:



Prepared By:



Legend

- Eastern Trail Alignment
  - Stream
  - Ditch
  - Wetlands
- 0 250 500 1,000 Feet

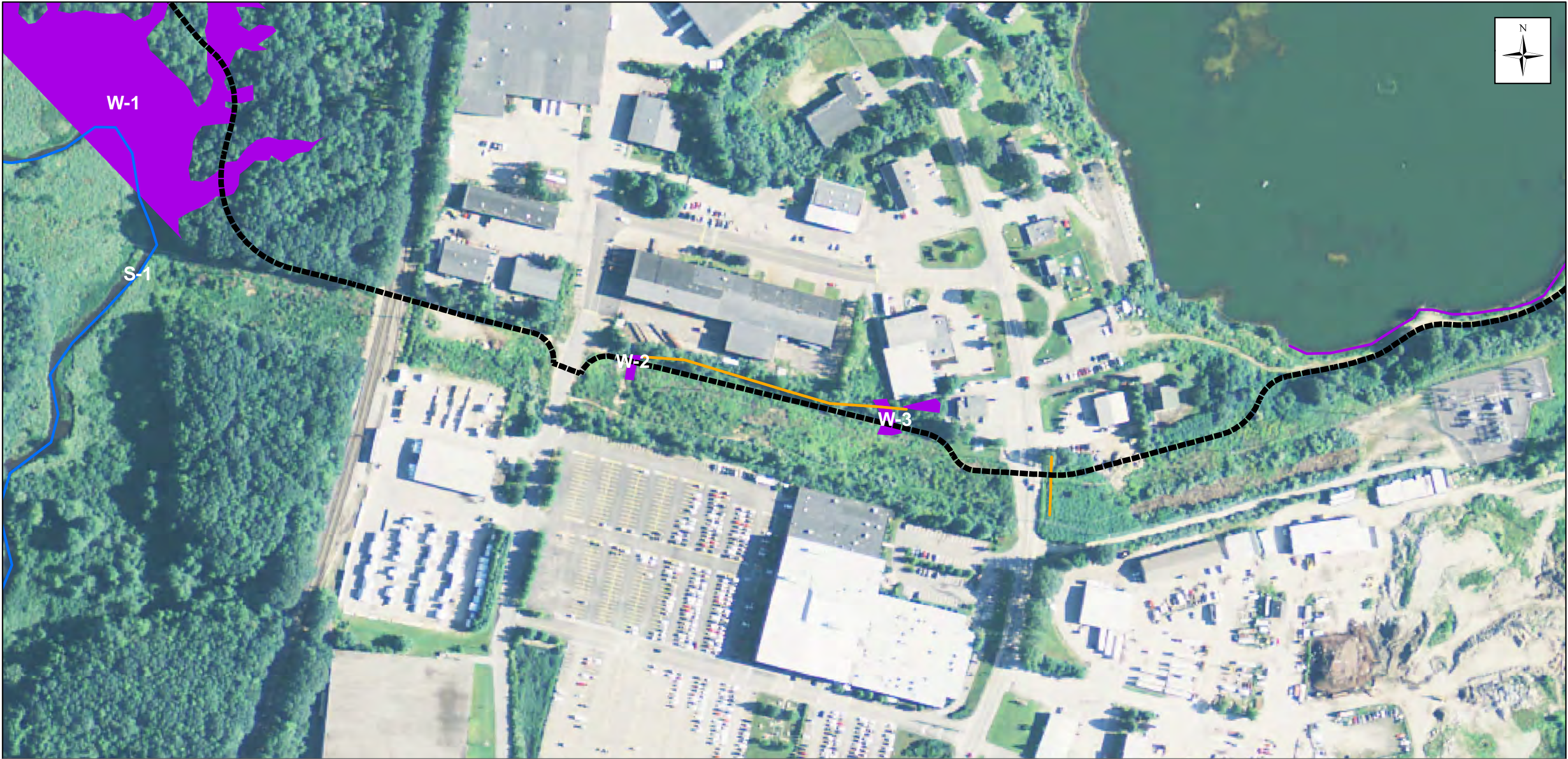
Figure 5.Delineated Aquatic and Wetland Resources

Eastern Trail Connector Project,  
Scarborough to South Portland, Maine

Source: NewEarth, 2018; NAIP, 2013.

Date: 8/17/2018





Prepared For:



Prepared By:



Legend

- Eastern Trail Alignment
  - Ditch
  - Stream
  - Wetlands
- 0 250 500 1,000 Feet

Figure 6.Delineated Aquatic and Wetland Resources

Eastern Trail Connector Project,  
Scarborough to South Portland, Maine

Source: NewEarth, 2018; NAIP, 2013.

Date: 8/17/2018





Prepared For:



Prepared By:



### Legend

- Eastern Trail Alignment
  - Ditch
  - Stream
  - Wetlands
- 0 250 500 1,000 Feet

Figure 7.Delineated Aquatic and Wetland Resources

Eastern Trail Connector Project,  
Scarborough to South Portland, Maine

Source: NewEarth, 2018; NAIP, 2013.

Date: 8/17/2018





Prepared For:



Prepared By:



Legend

- Eastern Trail Alignment
- Stream
- Ditch
- Wetlands

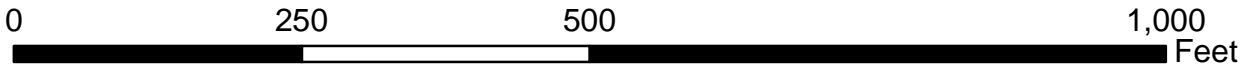


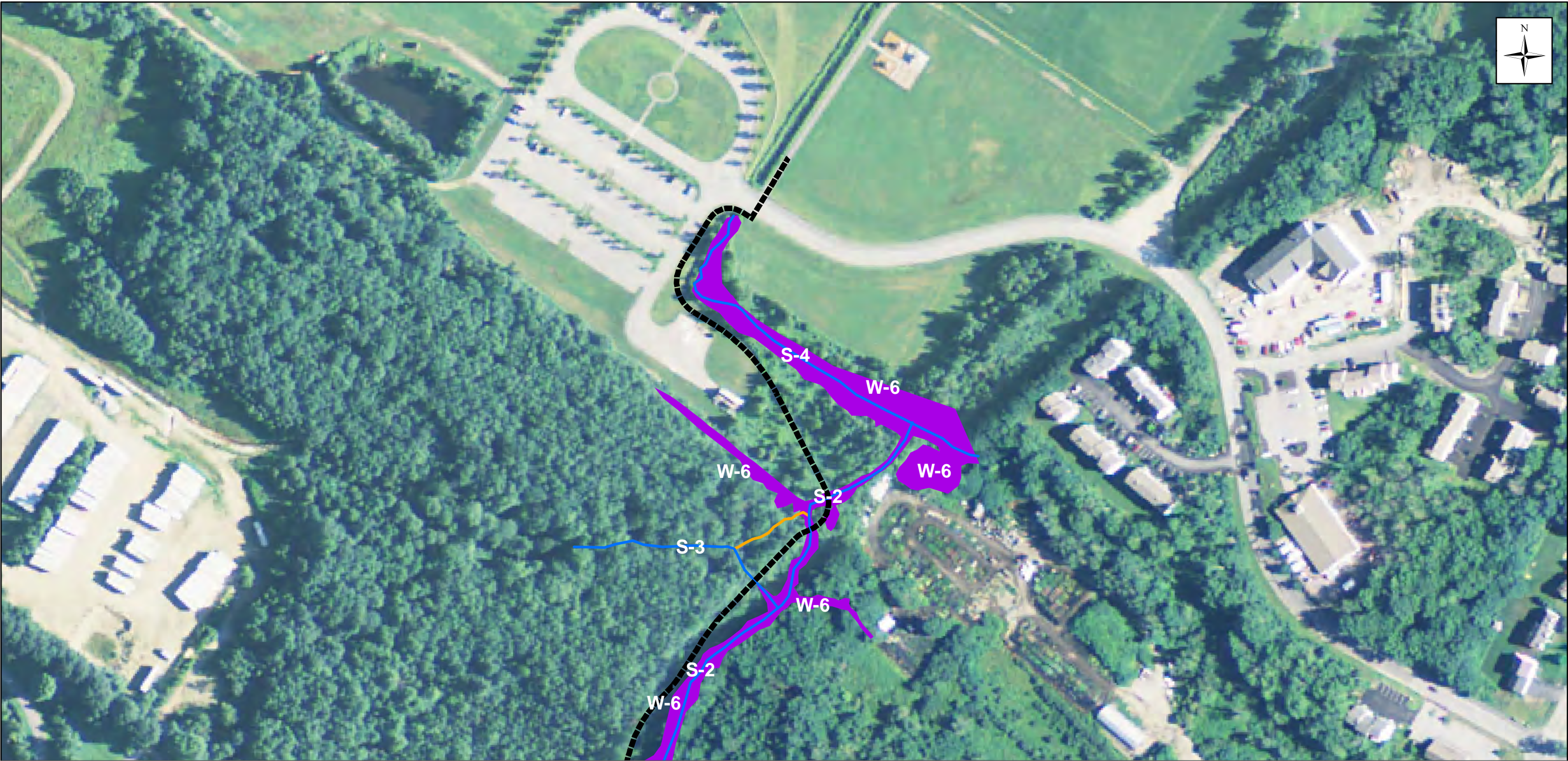
Figure 8.Delineated Aquatic and Wetland Resources

Eastern Trail Connector Project,  
Scarborough to South Portland, Maine

Source: NewEarth, 2018; NAIP, 2013.

Date: 8/17/2018





Prepared For:



Prepared By:



Legend

- Eastern Trail Alignment
- Ditch
- Stream
- Wetlands

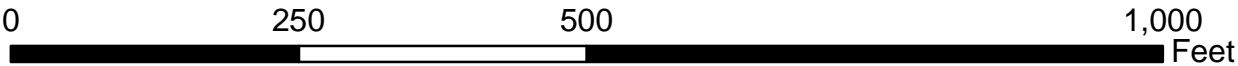


Figure 9.Delineated Aquatic and Wetland Resources

Eastern Trail Connector Project,  
Scarborough to South Portland, Maine

Source: NewEarth, 2018; NAIP, 2013.

Date: 8/17/2018



## **Appendix B**

### **Data Forms**

**Wetland Delineation**

**Wetland Functions and Values**

**Linear Waterbody Assessment**



Project/Site: ET CONNECTOR City/State: SCARBOROUGH, ME  
 Survey Date: 5/7/2013 Investigator(s): S. GROVE  
 Feature ID: S-1 Associated Wetland ID: W1

**Feature Characteristics**

Feature Name (from topographic map): NONESUCH RIVER

Flow Direction: TIDAL Avg. Flow Depth (in.): 2-4 ft Average Bank Width (ft.): 25

Bank Condition: steep gradual barely discernible Hydrologic Classification: ephemeral intermittent perennial

Circle any of the following that apply to the feature, and describe:

- A. It is depicted as a solid or broken blue line on the most recent edition of the U.S. Geological Survey 7.5-minute series topographic map or, if that is not available, a 15-minute series topographic map.
- B. It contains or is known to contain flowing water continuously for a period of at least 6 months of the year in most years.
- C. The channel bed is primarily composed of mineral material such as sand and gravel, parent material or bedrock that has been deposited or scoured by water.
- D. The channel contains aquatic animals such as fish, aquatic insects or mollusks in the water or, if no surface water is present, within the stream bed.
- E. The channel contains aquatic vegetation and is essentially devoid of upland vegetation.

Could the feature be a man-made waterbody or grassy swale constructed, or constructed and maintained, solely for the purpose of draining storm water? YES or NO If yes, explain:

Does the feature appear to have been modified by human activities? YES or NO If yes, explain:

**Hydrologic Classifications:**

Ephemeral - An ephemeral feature carries only storm water in direct response to precipitation with water flowing only during and shortly after large precipitation events. An ephemeral stream may or may not have a well-defined channel.

Intermittent - An intermittent feature has a well-defined channel that contains water for only part of the year, typically during winter and spring when the aquatic bed is below the water table.

Perennial - A perennial feature has a well-defined channel that contains water year round during a year of normal rainfall with the aquatic bed located below the water table for most of the year.

Project/Site: ET CONNECTOR City/State: S. PORTLAND, ME  
 Survey Date: 6/5/2013 Investigator(s): S. GROVE  
 Feature ID: S-2 Associated Wetland ID: W-5, W-6

**Feature Characteristics**

Feature Name (from topographic map): NA - NOT ON TOPO

Flow Direction: N Avg. Flow Depth (in.): 1-3 ft Average Bank Width (ft.): 8-10

Bank Condition: steep gradual barely discernible Hydrologic Classification: ephemeral intermittent perennial

Circle any of the following that apply to the feature, and describe:

A. It is depicted as a solid or broken blue line on the most recent edition of the U.S. Geological Survey 7.5-minute series topographic map or, if that is not available, a 15-minute series topographic map.

B. It contains or is known to contain flowing water continuously for a period of at least 6 months of the year in most years. VERY SLOW FLOW

C. The channel bed is primarily composed of mineral material such as sand and gravel, parent material or bedrock that has been deposited or scoured by water.

deep organics, muck

D. The channel contains aquatic animals such as fish, aquatic insects or mollusks in the water or, if no surface water is present, within the stream bed. FISH

E. The channel contains aquatic vegetation and is essentially devoid of upland vegetation.

**cattails**

PONDWEED &

INVASIVE MILFOIL

Could the feature be a man-made waterbody or grassy swale constructed, or constructed and maintained, solely for the purpose of draining storm water? **YES or NO** If yes, explain:

FEATURE MAY HAVE BEEN CONSTRUCTED TO CREATE CONNECTION BETWEEN MAN-MADE PLOTS POND & SPURRING RIVER

Does the feature appear to have been modified by human activities? **YES or NO** If yes, explain:

LINEAR SHAPE, FILL ALONG BANKS LIKELY FROM CANAL DREDGING

**Hydrologic Classifications:**

**Ephemeral** - An ephemeral feature carries only storm water in direct response to precipitation with water flowing only during and shortly after large precipitation events. An ephemeral stream may or may not have a well-defined channel.

**Intermittent** - An intermittent feature has a well-defined channel that contains water for only part of the year, typically during winter and spring when the aquatic bed is below the water table.

**Perennial** - A perennial feature has a well-defined channel that contains water year round during a year of normal rainfall with the aquatic bed located below the water table for most of the year.



Project/Site: ET CONNECTOR City/State: S. PORTLAND, ME  
 Survey Date: 6/15/2013 Investigator(s): S. GROVE  
 Feature ID: S-31 Associated Wetland ID: W-6

**Feature Characteristics**

Feature Name (from topographic map): UNNAMED

Flow Direction: NW Avg. Flow Depth (in.): 12-24" Average Bank Width (ft.): 5-8

Bank Condition: steep gradual barely discernible Hydrologic Classification: ephemeral intermittent perennial

Circle any of the following that apply to the feature, and describe:

A. It is depicted as a solid or broken blue line on the most recent edition of the U.S. Geological Survey 7.5-minute series topographic map or, if that is not available, a 15-minute series topographic map.

ON TOPOS IN 1910 BUT NOT SINCE 1945 WHEN AREA WAS MODIFIED TO DRAIN WETLANDS was a stream and is now serving function as a stream

B. It contains or is known to contain flowing water continuously for a period of at least 6 months of the year in most years.

VERY SLOW FLOW

Stagnant during some site visits, flash flow following storms

C. The channel bed is primarily composed of mineral material such as sand and gravel, parent material or bedrock that has been deposited or scoured by water.

deep organics, muck

D. The channel contains aquatic animals such as fish, aquatic insects or mollusks in the water or, if no surface water is present, within the stream bed.

FISH (MINNOWS)

Ducks foraging - indicative of presence of aquatic food sources

E. The channel contains aquatic vegetation and is essentially devoid of upland vegetation.

generally devoid of all veg

Could the feature be a man-made waterbody or grassy swale constructed, or constructed and maintained, solely for the purpose of draining storm water? **YES or NO** If yes, explain:

POSSIBLY ORIGINALLY CONSTRUCTED OR MODIFIED TO DRAIN WETLANDS

Does the feature appear to have been modified by human activities? **YES or NO** If yes, explain:

LINEAR, FILL ON BANKS AND IN & NEARBY

Low-quality, site disturbance, trash in general area, portions of channel appear to have been recently excavated.

**Hydrologic Classifications:**

Ephemeral - An ephemeral feature carries only storm water in direct response to precipitation with water flowing only during and shortly after large precipitation events. An ephemeral stream may or may not have a well-defined channel.

Intermittent - An intermittent feature has a well-defined channel that contains water for only part of the year, typically during winter and spring when the aquatic bed is below the water table.

Perennial - A perennial feature has a well-defined channel that contains water year round during a year of normal rainfall with the aquatic bed located below the water table for most of the year.

Project/Site: ET CONNECTOR City/State: S. PORTLAND, ME  
 Survey Date: 6/15/2013 Investigator(s): S. GROVE  
 Feature ID: S-4 Associated Wetland ID: W-67

**Feature Characteristics**

Feature Name (from topographic map): UNNAMED  
 Flow Direction: E Avg. Flow Depth (in.): 2-3 ft Average Bank Width (ft.): 8-15 ft  
 Bank Condition: steep gradual barely discernible Hydrologic Classification: ephemeral intermittent perennial

Circle any of the following that apply to the feature, and describe:

A. It is depicted as a solid or broken blue line on the most recent edition of the U.S. Geological Survey 7.5-minute series topographic map or, if that is not available, a 15-minute series topographic map.

NOT ON 1910 TOPOS, BUT ON TOPOS SINCE 1945

B. It contains or is known to contain flowing water continuously for a period of at least 6 months of the year in most years. VERY SLOW FLOW

C. The channel bed is primarily composed of mineral material such as sand and gravel, parent material or bedrock that has been deposited or scoured by water.

deep organics, muck

D. The channel contains aquatic animals such as fish, aquatic insects or mollusks in the water or, if no surface water is present, within the stream bed. FISH

E. The channel contains aquatic vegetation and is essentially devoid of upland vegetation.

NUPHAR, PONDWEED cattails

channel appears to be filling in with vegetation

Could the feature be a man-made waterbody or grassy swale constructed, or constructed and maintained, solely for the purpose of draining storm water? YES or NO If yes, explain:

FEATURE MAY BE MANMADE

Does the feature appear to have been modified by human activities? YES or NO If yes, explain:

NON-NATURAL LINEAR SHAPE

**Hydrologic Classifications:**

Ephemeral - An ephemeral feature carries only storm water in direct response to precipitation with water flowing only during and shortly after large precipitation events. An ephemeral stream may or may not have a well-defined channel.

Intermittent - An intermittent feature has a well-defined channel that contains water for only part of the year, typically during winter and spring when the aquatic bed is below the water table.

Perennial - A perennial feature has a well-defined channel that contains water year round during a year of normal rainfall with the aquatic bed located below the water table for most of the year.



**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: ET Connector - reassessed June 2018 City/County: Scarborough & S. Portland Sampling Date: 5/7/2013  
 Applicant/Owner: Town of Scarborough State: ME Sampling Point: W-1  
 Investigator(s): S. Grove Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): floodplain & toe of slope Local relief (concave, convex, none): flat Slope (%): 0  
 Subregion (LRR or MLRA): LRR-R Lat: 43.602477 Long: -70.306300 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Scarboro Sandy Loam (So) NWI classification: PFO1

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 X 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 _____	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)  Plot on a relatively flat terrace/floodplain adjacent to the Nonesuch River. Hydrologically connected to W-1a, but somewhat separated by an abandoned railroad berm. Some fill and debris found throughout area, but not problematic. Several upland "fingers" found throughout .  <div style="text-align: center;">Re-verified 6/3 - no adjustments needed</div>	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <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) <u>X</u> Saturation (A3)      ___ Marl Deposits (B15) <u>X</u> Water Marks (B1)      ___ Hydrogen Sulfide Odor (C1) ___ Sediment Deposits (B2) <u>X</u> 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)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>1</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> 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: W-1

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Acer rubrum</u>	<u>45</u>	<u>yes</u>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A)  Total Number of Dominant Species Across All Strata: <u>8</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)														
2. <u>Pinus strobus</u>	<u>20</u>	<u>yes</u>	<u>FACU</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>65</u> = Total Cover																		
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u> )</b>																		
1. <u>Alnus incana</u>	<u>15</u>	<u>yes</u>	<u>FACW</u>	<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> </table> Prevalence Index = B/A = _____	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)
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)																	
2. <u>Ilex verticillata</u>	<u>15</u>	<u>yes</u>	<u>FACW</u>															
3. <u>Lonicera morrowii</u>	<u>15</u>	<u>yes</u>	<u>FACU</u>															
4. <u>Spirea latifolia</u>	<u>5</u>	<u>no</u>	<u>FACW</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>50</u> = Total Cover																		
<b>Herb Stratum (Plot size: <u>5'</u> )</b>																		
1. <u>Onoclea sensibilis</u>	<u>20</u>	<u>yes</u>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Spirea latifolia</u>	<u>15</u>	<u>yes</u>	<u>FACW</u>															
3. <u>Rubus hispidus</u>	<u>15</u>	<u>yes</u>	<u>FACW</u>															
4. <u>Impatiens capensis</u>	<u>10</u>	<u>no</u>	<u>FACW</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>60</u> = Total Cover																		
<b>Woody Vine Stratum (Plot size: _____ )</b>																		
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
_____ = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)																		



## SOIL

Sampling Point: W-1

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

[illegible]<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

### Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) ( <b>LRR R,</b>
<input type="checkbox"/> Histic Epipedon (A2)	<b>MLRA 149B)</b>
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) ( <b>LRR R, MLRA 149B)</b>
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) ( <b>LRR K, L</b> )
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) ( <b>LRR R, MLRA 149B)</b>	

### Indicators for Problematic Hydric Soils<sup>3</sup>:

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

## Restrictive Layer (if observed):

Type: \_\_\_\_\_

Depth (inches):

Hydric Soil Present? Yes X No       

Remarks:

Some fill material in area, but not problematic.

**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: ET Connector - reassessed June 2018 City/County: Scarborough & S. Portland Sampling Date: 5/7/2013  
 Applicant/Owner: Town of Scarborough State: ME Sampling Point: W-2, W-3  
 Investigator(s): S. Grove Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): 2  
 Subregion (LRR or MLRA): LRR-R Lat: 43.598299 Long: -70.298503 Datum: WGS84  
 Soil Map Unit Name: Deerfield Loamy Sand (DeB) NWI classification: PSS

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 X 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 _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present? Yes <u>X</u> No _____	

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

Low-lying area associated with culverts. Within a disturbed area along utility line corridor and directly abutting commercial development. Vegetation is periodically maintained in a shrub-height stratum. Fill and debris found in pockets throughout area. Soil type DeB is not identified by USDA-NRCS as a Hydric Soil, but mapped hydric soils are located within 50 feet of the area.

Re-verified on 6/3 - no adjustments needed

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>		<b>Wetland Hydrology Present? Yes <u>X</u> No _____</b>
Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____		
Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____		
Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>1</u>		
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		
Significant hydrologic input from culverts and surface flow from paved areas in highly developed commercial areas that abut the site. W3 flows into W2, and flow crosses utility ROW in a drainage ditch		



**VEGETATION – Use scientific names of plants.**

 Sampling Point: W-2, W-3

Tree Stratum (Plot size: <u>15'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Acer rubrum</u>	<u>15</u>	<u>yes</u>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A)  Total Number of Dominant Species Across All Strata: <u>7</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. <u>Salix bebbina</u>	<u>5</u>	<u>yes</u>	<u>FACW</u>	
3. <u>Betula populifolia</u>	<u>5</u>	<u>no</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>25</u> = Total Cover				<b>Prevalence Index worksheet:</b> <div style="display: flex; justify-content: space-between;"> <span>Total % Cover of: _____</span> <span>Multiply by: _____</span> </div> 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 = _____
<b>Sapling/Shrub Stratum (Plot size: <u>10'</u> )</b>				
1. <u>Alnus incana</u>	<u>25</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Acer rubrum</u>	<u>15</u>	<u>yes</u>	<u>FAC</u>	
3. <u>Viburnum recognitum</u>	<u>15</u>	<u>yes</u>	<u>FAC</u>	
4. <u>Lonicera japonica</u>	<u>5</u>	<u>no</u>	<u>FACU</u>	
5. <u>Lonicera morrowii</u>	<u>2</u>	_____	<u>FACU</u>	
<u>62</u> = Total Cover				
<b>Herb Stratum (Plot size: <u>5'</u> )</b>				
1. <u>Onoclea sensibilis</u>	<u>20</u>	<u>yes</u>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Spirea latifolia</u>	<u>15</u>	<u>yes</u>	<u>FACW</u>	
3. <u>Juncus effusus</u>	<u>15</u>	<u>yes</u>	<u>FACW</u>	
4. <u>Impatiens capensis</u>	<u>5</u>	<u>no</u>	<u>FACW</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
<u>45</u> = Total Cover				
<b>Woody Vine Stratum (Plot size: _____ )</b>				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.) Plot sizes reduced due to wetland size and location. Trees mostly sapling size, area appears to have been cut.				

## SOIL

Sampling Point: W-2, W-3

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

[illegible]<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

### Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) ( <b>LRR R,</b>
<input type="checkbox"/> Histic Epipedon (A2)	<b>MLRA 149B)</b>
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) ( <b>LRR R, MLRA 149B)</b>
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) ( <b>LRR K, L)</b>
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) ( <b>LRR R, MLRA 149B)</b>	

### Indicators for Problematic Hydric Soils<sup>3</sup>:

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

## Restrictive Layer (if observed):

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes X No       

Remarks:

Some fill material in area, but not problematic.



**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: ET Connector - reassessed June 2018 City/County: Scarborough & S. Portland Sampling Date: 5/8/2013  
 Applicant/Owner: Town of Scarborough State: ME Sampling Point: W-4  
 Investigator(s): S. Grove Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR or MLRA): LRR-R Lat: 43.601548 Long: -70.292118 Datum: WGS84  
 Soil Map Unit Name: Deerfield Loamy Sand (DeB) NWI classification: PSS1

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 X 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 _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present? Yes <u>X</u> No _____	

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

Plot within utility line corridor on edge of a large wetland mitigation site. Project is close to the edge of the entire wetland, but only areas within 25ft of the project were flagged (rest of the wetland is not characteristic of the part within the utility corridor). Vegetation is maintained in a shrub-height stratum. Some fill and debris found throughout area. Soil type DeB is not identified by USDA-NRCS as a Hydric Soil.

Re-verified 6/3 - no adjustments needed

Complex within mitigation site is a diverse mix of PFO, PSS, PEM, and open water communities

**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"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>3</u> Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>X</u> 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: W-4

Tree Stratum (Plot size: _____ )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A)  Total Number of Dominant Species Across All Strata: <u>7</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> </table> Prevalence Index = B/A = _____	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)
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)																	
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u> )</b>																		
1. <u>Alnus incana</u>	<u>20</u>	<u>yes</u>	<u>FACW</u>															
2. <u>Ilex verticillata</u>	<u>15</u>	<u>yes</u>	<u>FACW</u>															
3. <u>Cornus alba</u>	<u>15</u>	<u>yes</u>	<u>FACW</u>															
4. <u>Aronia arbutifolia</u>	<u>10</u>	<u>no</u>	<u>FACW</u>															
5. <u>Salix lucida</u>	<u>5</u>	<u>no</u>	<u>FACW</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
<b>Herb Stratum (Plot size: <u>5'</u> )</b>																		
1. <u>Onoclea sensibilis</u>	<u>15</u>	<u>yes</u>	<u>FACW</u>															
2. <u>Spirea latifolia</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>															
3. <u>Typha angustifolia</u>	<u>10</u>	<u>yes</u>	<u>OBL</u>															
4. <u>Impatiens capensis</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>															
5. <u>Carex lurida</u>	<u>10</u>	<u>no</u>	<u>OBL</u>															
6. <u>Symphyotrichum novae-anglia</u>	<u>10</u>	<u>no</u>	<u>FACW</u>															
7. <u>Juncus effusus</u>	<u>5</u>	<u>no</u>	<u>FACW</u>															
8. <u>Carex scoparia</u>	<u>5</u>	<u>no</u>	<u>OBL</u>															
9. <u>Rubus hispidus</u>	<u>5</u>	<u>no</u>	<u>FACW</u>															
10. <u>Aronia arbutifolia</u>	<u>5</u>	<u>no</u>	<u>FACW</u>															
11. <u>Solidago</u>	<u>5</u>	_____	_____															
12. _____	_____	_____	_____															
_____ = Total Cover				<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.														
<b>Woody Vine Stratum (Plot size: _____ )</b>																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
_____ = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Solidago, unable to ID due to lack of inflorescence. Numerous grasses none dominant.																		

## SOIL

Sampling Point: W-4

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

[illegible]<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

### Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) ( <b>LRR R,</b>
<input type="checkbox"/> Histic Epipedon (A2)	<b>MLRA 149B)</b>
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) ( <b>LRR R, MLRA 149B)</b>
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) ( <b>LRR K, L</b> )
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input checked="" type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) ( <b>LRR R, MLRA 149B)</b>	

### Indicators for Problematic Hydric Soils<sup>3</sup>:

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

## Restrictive Layer (if observed):

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes X No       

## Remarks:

Disturbed site in a former gravel pit. Now much of the area is a man-made pond and a waste disposal dump. Fill material throughout area. Owner of property actively grading and dumping material along wetland and pond edges.



**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: ET Connector - reassessed June 2018 City/County: Scarborough & S. Portland Sampling Date: 6/5/2013  
 Applicant/Owner: Town of Scarborough State: ME Sampling Point: W-5  
 Investigator(s): S. Grove Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): 2  
 Subregion (LRR or MLRA): LRR-R Lat: 43.602386 Long: -70.291442 Datum: WGS84  
 Soil Map Unit Name: Swanton Fine Sandy Loam (Sz) NWI classification: PFO1

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 X 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 _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present? Yes <u>X</u> No _____	

Remarks: (Explain alternative procedures here or in a separate report.)  
 Wetland follows edges and low-lying areas along what appears to be a man-made ditch that extends from Prout's Pond. Based on historic imagery, much of the area was cleared and ditched to drain wetlands for agricultural use and gravel mining in the 1940's. Significant amounts of fill from the ditch trench appear to have been placed along the ditch edge and in wetlands. Soil type Sz is identified by USDA-NRCS as a Hyric Soil. Re-verified 6/3 - no adjustments needed

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>
<b>Primary Indicators (minimum of one is required; check all that apply)</b>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)
<input checked="" type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b>		
Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____		
Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____		
Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>1</u>		
(includes capillary fringe)	<b>Wetland Hydrology Present? Yes <u>X</u> No _____</b>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

**VEGETATION – Use scientific names of plants.**

 Sampling Point: W-5

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Acer rubrum</u>	<u>60</u>	<u>yes</u>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A)  Total Number of Dominant Species Across All Strata: <u>7</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. <u>Betula populifolia</u>	<u>25</u>	<u>yes</u>	<u>FACW</u>	
3. <u>Pinus strobus</u>	<u>15</u>	<u>no</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
			<u>100</u> = Total Cover	<b>Prevalence Index worksheet:</b> 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 = _____
Sapling/Shrub Stratum (Plot size: <u>15'</u> )				
1. <u>Alnus incana</u>	<u>15</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Betula populifolia</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>	
3. <u>Viburnum recognitum</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
			<u>35</u> = Total Cover	
Herb Stratum (Plot size: <u>5'</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Onoclea sensibilis</u>	<u>20</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Spiraea latifolia</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>	
3. <u>Osmundastrum cinnamomeum</u>	<u>10</u>	<u>no</u>	<u>FACW</u>	
4. <u>Impatiens capensis</u>	<u>10</u>	<u>no</u>	<u>FACW</u>	
5. <u>Osmunda spectabilis</u>	<u>10</u>	<u>no</u>	<u>OBL</u>	
6. <u>Rubus hispidus</u>	<u>5</u>	<u>no</u>	<u>FACW</u>	
7. <u>Symphyotrichum novae-angliae</u>	<u>5</u>	<u>no</u>	<u>FACW</u>	<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.
8. <u>Scirpus cyperinus</u>	<u>5</u>	<u>no</u>	<u>OBL</u>	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
			<u>75</u> = Total Cover	
Woody Vine Stratum (Plot size: _____ )				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			_____ = Total Cover	
Remarks: (Include photo numbers here or on a separate sheet.)				

## SOIL

Sampling Point: W-5

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

[illegible]

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

### Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) ( <b>LRR R,</b>
<input type="checkbox"/> Histic Epipedon (A2)	<b>MLRA 149B)</b>
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) ( <b>LRR R, MLRA 149B)</b>
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) ( <b>LRR K, L)</b>
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) ( <b>LRR R, MLRA 149B)</b>	

### Indicators for Problematic Hydric Soils<sup>3</sup>:

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

## Restrictive Layer (if observed):

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes X No       

Remarks:

Abutted by landfill site. Fill material, trash throughout area.



**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: ET Connector - reassessed June 2018 City/County: Scarborough & S. Portland Sampling Date: 6/16/2013  
 Applicant/Owner: Town of Scarborough State: ME Sampling Point: W-6  
 Investigator(s): S. Grove Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR or MLRA): LRR-R Lat: 43.605755 Long: -70.290714 Datum: WGS84  
 Soil Map Unit Name: Swanton Mucky Peat (Sp) NWI classification: PSS1

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 X 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 _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present? Yes <u>X</u> No _____	

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

Based on historic imagery, much of the area was cleared and ditched to drain wetlands for agricultural use and gravel mining in the 1940's. Some alterations in vicinity ongoing. Significant amounts of fill from the ditch trench appear to have been placed along the ditch edges. Soil type So is identified by USDA-NRCS as a Hyric Soil. Portions of wetland also fall within soil type Scarboro Sandy Loam (So); also hydric.  
 Re-verified 6/3 - some adjustments made to address expanded project limit and input from ME state soil scientist who assisted in evaluation of soils in this highly modified-ditched wetland system

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>
<b>Primary Indicators (minimum of one is required; check all that apply)</b>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>		<b>Wetland Hydrology Present? Yes <u>X</u> No _____</b>
Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____		
Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____		
Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>1</u> (includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Tree Stratum (Plot size: _____ )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A)  Total Number of Dominant Species Across All Strata: <u>7</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____</td> <td>(A) _____ (B) _____</td> </tr> </table> Prevalence Index = B/A = _____	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) _____
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) _____																	
<b>Sapling/Shrub Stratum (Plot size: 15' _____ )</b>																		
1. <u>Acer rubrum</u>	20	yes	FAC															
2. <u>Betula populifolia</u>	10	yes	FAC															
3. <u>Alnus incana</u>	10	yes	FACW															
4. <u>Sambucus nigra spp. canadensis</u>	5	no	FACW															
5. <u>Spirea latifolia</u>	5	no	FACW															
_____ = Total Cover																		
<b>Herb Stratum (Plot size: 5' _____ )</b>																		
1. <u>Onoclea sensibilis</u>	35	yes	OBL															
2. <u>Spirea latifolia</u>	20	yes	FACW															
3. <u>Impatiens capensis</u>	20	yes	FACW															
4. <u>Aster spp.</u>	20	yes																
5. <u>Osmunda regalis</u>	5	no	FAC															
6. <u>Acer rubrum</u>	5	no	FACW															
7. <u>Sambucus racemosa</u>	5	no																
8. <u>Juncus effusus</u>	2	no																
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
92 = Total Cover																		
<b>Woody Vine Stratum (Plot size: _____ )</b>																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
_____ = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)  Aster species not identifiable due to lack of inflorescence. Not included in dominance test. Much of the site appears to have been disturbed within the past 25 years and trees are in a small sapling/shrub stage. Community likely to eventually become PFO through natural succession. Herb cover dense in some areas, but still generally a PSS community.																		

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ 1 - Rapid Test for Hydrophytic Vegetation  
X 2 - Dominance Test is >50%  
 \_\_\_ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**  
  
**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  
  
**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  
  
**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  
  
**Woody vines** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes X No \_\_\_\_\_

## SOIL

Sampling Point: W-6

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

[illegible]

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

### Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) ( <b>LRR R,</b>
<input type="checkbox"/> Histic Epipedon (A2)	<b>MLRA 149B)</b>
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) ( <b>LRR R, MLRA 149B)</b>
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) ( <b>LRR K, L)</b>
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) ( <b>LRR R, MLRA 149B)</b>	

### Indicators for Problematic Hydric Soils<sup>3</sup>:

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

## Restrictive Layer (if observed):

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes X No       

## Remarks:

Layer of sandy gravel below A. Some fill material in area. Soils variable throughout wetland and some appear to have been mixed, some fill. Site possibly drying out, some new alterations.

Due to historic alterations, fill, disturbances in entire area, received assistance with soil interpretations from State Soil Scientist. Modified wetland line accordingly.



**Maine Wetland Data Form**  
**NRPA & Functions and Values Addendum**

Reassessed 6/4/2018

Project/Site: ET CONNECTOR Survey Date: 5/7/2013  
Investigator(s): S. GROVE Wetland ID: W-1

**Maine Natural Resource Protection Act (NRPA) Wetlands of Special Significance**

Circle any of the following criteria that apply to the wetland, and describe:

- A. Within 250 feet of a coastal wetland. tidal feature, not on "coast"
- B. Is, or contains, a critically imperiled (S1) or imperiled (S2) wetland community as identified by the Maine Department of Conservation Natural Areas Program.
- C. Within 250 feet of a great pond.
- ☒ D. Is, or contains, a stream. adjacent to stream
- ☒ E. Contains at least 20,000 square feet of aquatic or emergent vegetation or open water. not within footprint, but in adj. complex
- F. Contains significant wildlife habitat, including significant vernal pools.
- G. Contains peatland.
- ☒ H. Within the 100-year floodplain (Zone A).

**Potential Vernal Pools** (not an official VP survey, but provides information to determine if a survey is recommended)

Check any of the following that likely apply to this wetland (note any indicator species observed): NONE

         **Potential Vernal Pool (PVP)** – includes features that meet the definition of a vernal pool per Maine's NRPA. The pool must be natural, temporary to semi-permanent, no permanent inlet, and no viable populations of predatory fish. A vernal pool intentionally created for the purposes of compensatory mitigation is included in this definition."

         **Modified Potential Vernal Pool (MPVP)** – includes features that meet the criteria for a PVP, but have been modified by human activities.

         **Amphibian Breeding Area (ABA)** – do not meet the NRPA regulatory definition of a vernal pool but do meet the USACE Programmatic General Permit definition of a vernal pool. The primary distinction between PVPs and ABAs are that ABAs may be of unnatural origin, may be in permanent bodies of water, and may have a permanent inlet so long as fish are not present.

**Functions and Values** (circle all F & V that the wetland feature provides). Describe as needed.

- 1. Floodflow Alteration - The effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. flat, dense veg, wide
- 2. Fish - The effectiveness of the wetland to provide habitat for fresh or saltwater fish or shellfish. NA
- 3. Sediment/Toxicant/Pathogen Retention - The ability of the wetland to reduce or prevent degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas. flat, dense veg, buffer
- 4. Wildlife Habitat - The effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. LARGE PARCEL, LOW FRAGMENTATION
- 5. Recreational and Educational Value - The suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting, and other active or passive recreational activities. As well as, the suitability of the wetland as a site for an "outdoor classroom". LIMITED ACCESS
- 6. Uniqueness and Heritage - The effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. AVG
- 7. Rare, Threatened and Endangered Species - The effectiveness of the wetland in supporting threatened or endangered species. NONE KNOWN

But mature trees may provide habitat for state-federally-listed bats

**Maine Wetland Data Form**  
**NRPA & Functions and Values Addendum**

Reassessed 6/4/2018

Project/Site: ET CONNECTOR Survey Date: 5/7/2013  
Investigator(s): S GROVE Wetland ID: W-2 & W-3

**Maine Natural Resource Protection Act (NRPA) Wetlands of Special Significance**

Circle any of the following criteria that apply to the wetland, and describe: NONE

- A. Within 250 feet of a coastal wetland.
- B. Is, or contains, a critically imperiled (S1) or imperiled (S2) wetland community as identified by the Maine Department of Conservation Natural Areas Program.
- C. Within 250 feet of a great pond.
- D. Is, or contains, a stream.
- E. Contains at least 20,000 square feet of aquatic or emergent vegetation or open water.
- F. Contains significant wildlife habitat, including significant vernal pools.
- G. Contains peatland.
- H. Within the 100-year floodplain (Zone A).

**Potential Vernal Pools** (not an official VP survey, but provides information to determine if a survey is recommended)

Check any of the following that likely apply to this wetland (note any indicator species observed): NONE

         **Potential Vernal Pool (PVP)** – includes features that meet the definition of a vernal pool per Maine's NRPA. The pool must be natural, temporary to semi-permanent, no permanent inlet, and no viable populations of predatory fish. A vernal pool intentionally created for the purposes of compensatory mitigation is included in this definition."

         **Modified Potential Vernal Pool (MPVP)** – includes features that meet the criteria for a PVP, but have been modified by human activities.

         **Amphibian Breeding Area (ABA)** - do not meet the NRPA regulatory definition of a vernal pool but do meet the USACE Programmatic General Permit definition of a vernal pool. The primary distinction between PVPs and ABAs are that ABAs may be of unnatural origin, may be in permanent bodies of water, and may have a permanent inlet so long as fish are not present.

**Functions and Values** (circle all F & V that the wetland feature provides). Describe as needed. Degraded Pool

1. Floodflow Alteration - The effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. NO
2. Fish - The effectiveness of the wetland to provide habitat for fresh or saltwater fish or shellfish. NA
3. Sediment/Toxicant/Pathogen Retention – The ability of the wetland to reduce or prevent degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.
4. Wildlife Habitat - The effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. adjacent to paved areas and other sources, but fast flow through highly developed area
5. Recreational and Educational Value - The suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting, and other active or passive recreational activities. As well as, the suitability of the wetland as a site for an "outdoor classroom". NO
6. Uniqueness and Heritage – The effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. NO-near NEEC habitat, but wetland itself not critical habitat
7. Rare, Threatened and Endangered Species - The effectiveness of the wetland in supporting threatened or endangered species.

ADJ TO NEW ENGLAND COTTONTAIL HABITAT

But suitable habitat falls within utility corridor, not wetland.

Maine Wetland Data Form  
NRPA & Functions and Values Addendum

Reassessed 6/4/2018

Project/Site: ET CONNECTOR Survey Date: 5/8/2013  
Investigator(s): S. GROVE Wetland ID: W-4 (-----)

Maine Natural Resource Protection Act (NRPA) Wetlands of Special Significance

Circle any of the following criteria that apply to the wetland, and describe: NONE

- A. Within 250 feet of a coastal wetland.
- B. Is, or contains, a critically imperiled (S1) or imperiled (S2) wetland community as identified by the Maine Department of Conservation Natural Areas Program.
- C. Within 250 feet of a great pond. ADJACENT POND, BUT MANMADE
- D. Is, or contains, a stream.
- ☒ E. Contains at least 20,000 square feet of aquatic or emergent vegetation or open water. not within footprint, but in adj. complex
- F. Contains significant wildlife habitat, including significant vernal pools.
- G. Contains peatland.
- H. Within the 100-year floodplain (Zone A).

Potential Vernal Pools (not an official VP survey, but provides information to determine if a survey is recommended)

Check any of the following that likely apply to this wetland (note any indicator species observed): NONE

       Potential Vernal Pool (PVP) – includes features that meet the definition of a vernal pool per Maine's NRPA. The pool must be natural, temporary to semi-permanent, no permanent inlet, and no viable populations of predatory fish. A vernal pool intentionally created for the purposes of compensatory mitigation is included in this definition."

       Modified Potential Vernal Pool (MPVP) – includes features that meet the criteria for a PVP, but have been modified by human activities.

       Amphibian Breeding Area (ABA) - do not meet the NRPA regulatory definition of a vernal pool but do meet the USACE Programmatic General Permit definition of a vernal pool. The primary distinction between PVPs and ABAs are that ABAs may be of unnatural origin, may be in permanent bodies of water, and may have a permanent inlet so long as fish are not present.

Functions and Values (circle all F & V that the wetland feature provides). Describe as needed. FAIRLY DEGRADED

1. Floodflow Alteration - The effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. Prouts Pond serves this purpose and when flooded drains via S-2
2. Fish - The effectiveness of the wetland to provide habitat for fresh or saltwater fish or shellfish. NA
3. Sediment/Toxicant/Pathogen Retention - The ability of the wetland to reduce or prevent degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas. NA
4. Wildlife Habitat - The effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. NA
5. Recreational and Educational Value - The suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting, and other active or passive recreational activities. As well as, the suitability of the wetland as a site for an "outdoor classroom". NOTHING SPECIAL BUT HAS ACCESS
6. Uniqueness and Heritage - The effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. IN SMALL PART ONLY NA
7. Rare, Threatened and Endangered Species - The effectiveness of the wetland in supporting threatened or endangered species. COYOTE HABITAT ALONG UTILITY ROW ONLY

some habitat in wetlands.



**Maine Wetland Data Form**  
**NRPA & Functions and Values Addendum**

Project/Site: ET CONNECTOR

Survey Date: 6/5/2013

Investigator(s): S. GROVE

Wetland ID: W-5

**Maine Natural Resource Protection Act (NRPA) Wetlands of Special Significance**

Circle any of the following criteria that apply to the wetland, and describe:

- A. Within 250 feet of a coastal wetland.
- B. Is, or contains, a critically imperiled (S1) or imperiled (S2) wetland community as identified by the Maine Department of Conservation Natural Areas Program.
- C. Within 250 feet of a great pond. ADJ. POND IS MANMADE
- ☒ D. Is, or contains, a stream. adjacent to stream S-2
- E. Contains at least 20,000 square feet of aquatic or emergent vegetation or open water.
- F. Contains significant wildlife habitat, including significant vernal pools.
- G. Contains peatland.
- H. Within the 100-year floodplain (Zone A).

**Potential Vernal Pools** (not an official VP survey, but provides information to determine if a survey is recommended)

Check any of the following that likely apply to this wetland (note any indicator species observed): NONE

         **Potential Vernal Pool (PVP)** – includes features that meet the definition of a vernal pool per Maine's NRPA. The pool must be natural, temporary to semi-permanent, no permanent inlet, and no viable populations of predatory fish. A vernal pool intentionally created for the purposes of compensatory mitigation is included in this definition."

         **Modified Potential Vernal Pool (MPVP)** – includes features that meet the criteria for a PVP, but have been modified by human activities.

         **Amphibian Breeding Area (ABA)** – do not meet the NRPA regulatory definition of a vernal pool but do meet the USACE Programmatic General Permit definition of a vernal pool. The primary distinction between PVPs and ABAs are that ABAs may be of unnatural origin, may be in permanent bodies of water, and may have a permanent inlet so long as fish are not present.

**Functions and Values** (circle all F & V that the wetland feature provides). Describe as needed.

- 1. Floodflow Alteration - The effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. does not appear to be significant source input M DENSE VEG, LARGE TRACT
- 2. Fish - The effectiveness of the wetland to provide habitat for fresh or saltwater fish or shellfish. S-B ADJ BUT HIGHLY DEGRADED
- 3. Sediment/Toxicant/Pathogen Retention – The ability of the wetland to reduce or prevent degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas. DENSE VEG, LARGE TRACT
- 4. Wildlife Habitat - The effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. LARGE, UNFRAGMENTED RELATIVE TO GENERAL AREA
- 5. Recreational and Educational Value - The suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting, and other active or passive recreational activities. As well as, the suitability of the wetland as a site for an "outdoor classroom". AREA DISTURBED / TRASH NOTHING SPECIAL, BUT HAS ACCESS
- 6. Uniqueness and Heritage – The effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. DISTURBED
- 7. Rare, Threatened and Endangered Species - The effectiveness of the wetland in supporting threatened or endangered species. NONE KNOWN

But mature trees may provide habitat for state or federally-listed bats

**Maine Wetland Data Form**  
**NRPA & Functions and Values Addendum**

Reassessed 6/3/2018

Project/Site: ET CONNECTOR

Survey Date: 6/15/2013

Investigator(s): S. GROVE

Wetland ID: W-6

**Maine Natural Resource Protection Act (NRPA) Wetlands of Special Significance**

Circle any of the following criteria that apply to the wetland, and describe:

- A. Within 250 feet of a coastal wetland.
- B. Is, or contains, a critically imperiled (S1) or imperiled (S2) wetland community as identified by the Maine Department of Conservation Natural Areas Program.
- C. Within 250 feet of a great pond.
- ☒ D. Is, or contains, a stream. adjacent to streams S-2, S-3 and S-4 **Channels S-2 and S-4 are filling in with aquatic vegetation**
- ☒ E. Contains at least 20,000 square feet of aquatic or emergent vegetation or open water.
- F. Contains significant wildlife habitat, including significant vernal pools.
- G. Contains peatland.
- H. Within the 100-year floodplain (Zone A).

**Potential Vernal Pools** (not an official VP survey, but provides information to determine if a survey is recommended)

Check any of the following that likely apply to this wetland (note any indicator species observed): NONE

         **Potential Vernal Pool (PVP)** – includes features that meet the definition of a vernal pool per Maine's NRPA. The pool must be natural, temporary to semi-permanent, no permanent inlet, and no viable populations of predatory fish. A vernal pool intentionally created for the purposes of compensatory mitigation is included in this definition."

         **Modified Potential Vernal Pool (MPVP)** – includes features that meet the criteria for a PVP, but have been modified by human activities.

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**Functions and Values** (circle all F & V that the wetland feature provides). Describe as needed.

1. Floodflow Alteration - The effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. **narrow wetlands most areas**
2. Fish - The effectiveness of the wetland to provide habitat for fresh or saltwater fish or shellfish. **NO L**  
STREAMS S-2, S-3 NOT HIGH QUALITY STREAMS
3. Sediment/Toxicant/Pathogen Retention – The ability of the wetland to reduce or prevent degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas. **FLAT, DENSE VEG but narrow**
4. Wildlife Habitat - The effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. **LARGE TRACT forested upland**
5. Recreational and Educational Value - The suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting, and other active or passive recreational activities. As well as, the suitability of the wetland as a site for an "outdoor classroom". **EXISTING TRAILS ACCESS GARD**  
NOT REC COMPLX
6. Uniqueness and Heritage – The effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. **AVG.**
7. Rare, Threatened and Endangered Species - The effectiveness of the wetland in supporting threatened or endangered species. **NONE KNOWN**

## **Appendix C**

### **Photographs**



**Wetland and Waterbody Resource Delineation  
Eastern Trail Connector Project**



**Wetland W1 (PFO)**



**Wetland W1 (PFO)**



**Wetland W2 (PSS)**



**Wetland W2 (PSS)**



**Wetland W3 (PSS)**



**Wetland W3 (PSS)**



**Wetland and Waterbody Resource Delineation  
Eastern Trail Connector Project**



**Wetland W4 (PSS)**



**Wetland W4 (PSS)**



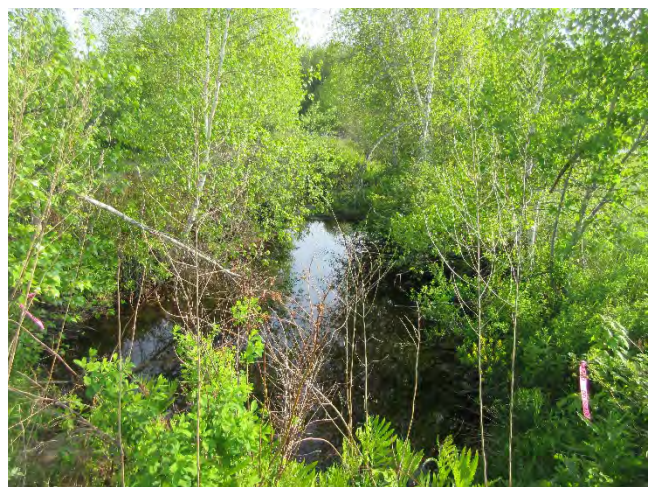
**Wetland W5 (PFO)**



**Wetland W5 (PFO)**



**Wetland W6 (PSS)**



**Wetland W6 (PSS)**



**Wetland and Waterbody Resource Delineation  
Eastern Trail Connector Project**



**Waterbody S-1**



**Waterbody S-2**



**Waterbody S-3**



**Waterbody S-4**



**Stormwater Ditch**



**Stormwater Ditch**



**Wetland and Waterbody Resource Delineation  
Eastern Trail Connector Project**



**Stormwater Ditch**



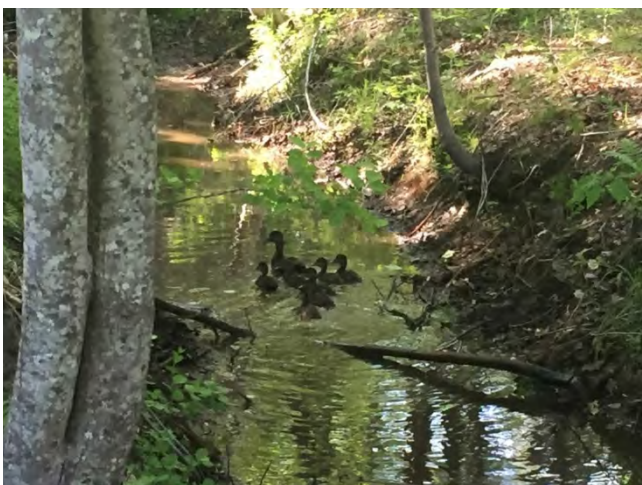
**Stormwater Ditch**



**Recent Ground Disturbance Near Wetland**



**Trash and Soil Adjacent to Ditch**



**Ducks Foraging in Stream S-3**



**Potential New England Cottontail Habitat**

## **ATTACHMENT 10 – PUBLIC NOTICE**

The Project was introduced at a public information session held on November 4, 2013, in accordance with MaineDOT public outreach requirements; 19 members of the public attended. Copies of the public announcement of the meeting and meeting agenda are included in this attachment. Coordination has also been ongoing with affected property owners to address concerns and acquire appropriate approvals/easements; minute and emails from several representative discussions are available in Attachment 15: Title, Right or Interest Documents.

Additionally, as indicated on the attached Public Notice Certification, the attached notice of intent to file was posted in local newspapers within 30-days of submittal of the permit application. The notice was also sent via certified mail to the abutting property owners identified on the attached parcel map and contact list of abutters.





*Town of Scarborough, Maine*

259 U.S. ROUTE ONE, P.O. BOX 360

SCARBOROUGH, MAINE • 04070-0360

**Public Notice**

**Public Meeting Regarding the Proposed Trail Alignment for the Multi-Purpose Eastern Trail**

October 15, 2013

Dear Property

Owner,

Over the past year the Town of Scarborough, the Eastern Trail Management District and Maine DOT have been working on establishing a trail route, alignment, and design for a through connection of the Eastern Trail from where it currently ends at the Nonesuch River to the Wainwright Field complex in South Portland. This current trail gap is the only significant remaining off-road trail gap on the Eastern Trail between Bug Light in South Portland and Kennebunk.

Given that you are a property owner in the vicinity of where the trail route is proposed, we would like to invite you to a public meeting on Monday November 4<sup>th</sup> at 6:30PM in Council Chambers A at Scarborough Town Hall. At this meeting we will present the proposed trail alignment and its design and enable public comment and input.

If you have questions and/or cannot attend the meeting, but are interested in the proposal, please contact me by phone at (207) 730-4041 or e-mail at [dbacon@ci.scarborough.me.us](mailto:dbacon@ci.scarborough.me.us)

Sincerely,

Dan Bacon  
Town  
Planner

PHONE: 207.730.4040 • FAX: 207.730.4046 • [www.scarborough.me.us](http://www.scarborough.me.us)



PUBLIC NOTICE: NOTICE OF INTENT TO FILE  
MaineDOT WIN 019426.00 & 019426.10

Please take notice that the Town of Scarborough, 259 U.S. Route 1, Scarborough, ME 04074, (207) 730-4155, is intending to file a Maine Department of Environmental Protection (DEP) application pursuant to the provisions the Maine Natural Resources Protection Act, Maine General Permit, and Stormwater Management Law (38 M.R.S.A. §§ 420-D and 480 thru 490) and Section 307 of the federal Coastal Zone Management Act, 16 U.S.C. § 1456, and Section 404 of the Clean Water Act on or about July 19, 2024.

The application is for proposed construction of the Eastern Trail Connector Project (Project), which will involve constructing a 1.6-mile non-motorized pedestrian/bike path connection between the northern extent of a segment of the existing Eastern Trail in Scarborough near the Nonesuch River to the southernmost extent of the existing trail in South Portland near the Wainwright Recreational Complex. This 10 to 12-foot wide paved or stone dust trail will include several trail segments, roadway crossings, and new bridges spanning the Nonesuch River and Pan Am/CSX Railway corridor.

The permit application detailing the Project components will be filed and available for public review during normal working hours at DEP's Southern Maine Regional office located at 312 Canco Rd # 4, Portland, ME 04103. The documents will also be available for review from 8:00 AM to 4:30 PM, Monday through Friday, at the municipal offices for the Town of Scarborough and the City of South Portland. The documents will also be available for review and download on the Town of Scarborough web site at [www.scarboroughmaine.org/](http://www.scarboroughmaine.org/) and the City of South Portland web site at [www.southportland.org/](http://www.southportland.org/). Written public comment on the application will be accepted throughout the processing of the application and should be sent to DEP's regional office in Portland where the application is filed for public inspection.

A request for a public hearing or a request that the Board of Environmental Protection assume jurisdiction over this application must be received by the Department in writing, no later than 20 days after the application is found by the Department to be complete and is accepted for processing. A public hearing may or may not be held at the discretion of the Commissioner or Board of Environmental Protection.

Publication Logo  
Unavailable

Publication Name:  
**Portland Press Herald**

Publication URL:

Publication City and State:  
Portland, ME

Publication County:  
Cumberland

Notice Popular Keyword Category:

Notice Keywords:  
Construction build engineer  
engineering

Notice Authentication Number:  
202407240701141626254  
2261545714

Notice URL:

[Back](#)

Notice Publish Date:  
Friday, July 19, 2024

## Notice Content

NOTICE OF INTENT TO FILE MaineDOT WIN 019426.00 & 019426.10 Please take notice that the Town of Scarborough, 259 U.S. Route 1, Scarborough, ME 04074, (207) 730-4155, is intending to file a Maine Department of Environmental Protection (DEP) application pursuant to the provisions the Maine Natural Resources Protection Act and Stormwater Management Law (38 M.R.S.A. §§ 420-D and 480 thru 490) on or about July 19, 2024. The application is for proposed construction of a 1.6-mile section of the non-motorized pedestrian/bicycle Eastern Trail (Project), which will connect the northern extent of the existing Eastern Trail in Scarborough near the Nonesuch River to the southernmost extent of the existing trail in South Portland near the Wainwright Recreational Complex. This 10 to 12-foot wide paved or stone dust trail will include several trail segments, roadway crossings, and new or replacement bridges spanning the Nonesuch River and CSX Railway corridor. The permit application detailing the Project components will be filed and available for public review during normal working hours at DEP's Southern Maine Regional office located at 312 Canco Rd # 4, Portland, ME 04103. The documents will also be available for review from 8:00 AM to 4:30 PM, Monday through Friday, at the municipal offices for the Town of Scarborough and the City of South Portland. The documents will also be available for review and download on the Town of Scarborough web site at [www.scarboroughmaine.org/](http://www.scarboroughmaine.org/) and the City of South Portland web site at [www.southportland.gov/](http://www.southportland.gov/). Written public comment on the application will be accepted throughout the processing of the application and should be sent to DEP's regional office in Portland where the application is filed for public inspection. A request for a public hearing or a request that the Board of Environmental Protection assume jurisdiction over this application must be received by the Department in writing, no later than 20 days after the application is found by the Department to be complete and is accepted for processing. A public hearing may or may not be held at the discretion of the Commissioner or Board of Environmental Protection.

[Back](#)



259 US ROUTE ONE, PO BOX 360  
SCARBOROUGH, MAINE • 04070-0360

July 24, 2024

HNTB.  
ATTN: Judy Gates  
Department Manager - Planning  
82 Running Hill Road – Suite 201  
South Portland, Maine 04106

Account Number	Description	Amount	Total Amount
	Portland Press Herald Legal Notice for	\$ 421.05	\$421.05
		Total	\$421.05



## Public Notice Filing and Certification

Department Rules, Chapter 2, require an applicant to provide public notice for all Site Location projects (with the exception of minor revisions and condition compliance applications), Tier 2, Tier 3 and individual Natural Resources Protect Act projects. In the notice, the applicant must describe the proposed activity and where it is located. "Abutter" for the purposes of the notice provision means any person who owns property that is BOTH (1) adjoining and (2) within one mile of the delineated project boundary, including owners of property directly across a public or private right of way.

1. Newspaper: You must publish the Notice of Intent to File in a newspaper circulated in the area where the activity is located. The notice must appear in the newspaper within 30 days prior to the filing of the application with the Department. You may use the attached Notice of Intent to File form, or one containing identical information, for newspaper publication and certified mailing.
2. Abutting Property Owners: You must send a copy of the Notice of Intent to File by certified mail to the owners of the property abutting the activity. Their names and addresses can be obtained from the town tax maps or local officials. They must receive notice within 30 days prior to the filing of the application with the Department.
3. Municipal Office: You must send a copy of the Notice of Intent to File and a duplicate of the entire application to the Municipal Office.

ATTACH a list of the names and addresses of the owners of abutting property.

### CERTIFICATION

By signing below, the applicant or authorized agent certifies that:

5. A Notice of Intent to File was published in a newspaper circulated in the area where the project site is located within 30 days prior to filing the application;
6. A certified mailing of the Notice of Intent to File was sent to all abutters within 30 days of the filing of the application;
7. A certified mailing of the Notice of Intent to File, and a duplicate copy of the application was sent to the town office of the municipality in which the project is located; and
8. Provided notice of and held a public informational meeting, if required, in accordance with Chapter 2, Rules Concerning the Processing of Applications, Section 13, prior to filing the application. Notice of the meeting was sent by certified mail to abutters and to the town office of the municipality in which the project is located at least ten days prior to the meeting. Notice of the meeting was also published once in a newspaper circulated in the area where the project site is located at least seven days prior to the meeting.

The Public Informational Meeting was held on NOVEMBER 4, 2013  
Date

Approximately 19 members of the public attended the  
Public Informational Meeting.

\_\_\_\_\_  
Signature of Applicant or authorized agent

\_\_\_\_\_  
Date

# **EASTERN TRAIL SCARBOROUGH CONNECTOR**

## **Formal Public Hearing**

**PROJECT:**      Scarborough Eastern Trail Connector  
MaineDOT PIN 19386.00

**DATE:**            November 4, 2013

**TIME:**            6:30 PM

**LOCATION:**      Scarborough Municipal Building, 259 U.S. Route 1, Scarborough

### **PRESENTERS:**

Dan Bacon, Town Planner - Town of Scarborough (730-4041) Bob  
Bowker, Vice President - Eastern Trail Alliance (874-8077) Tim Cote  
P.E., Project Manager – HNTB Corporation (228-0880)

### **AGENDA:**

Opening Remarks: Dan Bacon  
Eastern Trail Introduction & Vision: Bob Bowker  
Project History and Background: Dan Bacon Technical  
Presentation: Tim Cote  
Open Forum Questions and Answers  
Informal opportunity to speak with Town of Scarborough, ETMD and HNTB

July 19, 2024



Name  
Address  
City, State, Zip Code

RE: Eastern Trail, Scarborough to South Portland WIN  
019426.00 & 019426.10

Dear Property Owner:

Please take notice that the Town of Scarborough, 259 U.S. Route 1, Scarborough, ME 04074, (207) 730-4155, is intending to file a Maine Department of Environmental Protection (DEP) Natural Resources Protection Act, Maine General Permit, and Stormwater Law applications pursuant to 38 M.R.S.A. §§ 420-D and 480 thru 490, and the provisions of Section 307 of the federal Coastal Zone Management Act, 16 U.S.C. § 1456, and Section 404 of the Clean Water Act on or about July 19, 2024.

The application is for the construction of a 1.6-mile section of the Eastern Trail (Project), a non-motorized pedestrian/bike path, connecting the northern extent of a segment of the existing Eastern Trail in Scarborough near the Nonesuch River to the southernmost extent of the existing trail in South Portland near the Wainwright Recreational Complex. The Project involves construction of a 10 to 12-foot wide paved or stone dust trail, including roadway crossings, and new bridges spanning the Nonesuch River and CSX Railway corridor.

The permit application will detail the Project components and be filed and available for public review during normal working hours at the DEP's Southern Maine Regional office located at 312 Canco Rd # 4, Portland, ME 04103. The documents will also be available for review from 8:00 AM to 4:30 PM, Monday through Friday, at the municipal offices for the Town of Scarborough and the City of South Portland. The documents will also be available for review and download on the Town of Scarborough web site at [www.scarboroughmaine.org/](http://www.scarboroughmaine.org/) and the City of South Portland web site at [www.southportland.org/](http://www.southportland.org/). Written public comment on the application will be accepted throughout the processing of the application and should be sent to DEP's regional office in Portland where the application is filed for public inspection.

A request for a public hearing or a request that the Board of Environmental Protection assume jurisdiction over this application must be received by the Department in writing, no later than 20 days after the application is found by the Department to be complete and is accepted for processing. A public hearing may or may not be held at the discretion of the Commissioner or Board of Environmental Protection.

Sincerely,

A handwritten signature in blue ink that reads "Judy C. Gates". The signature is written in a cursive style with a large, stylized "J" and "G".

**Judy C. Gates**

Department Manager - Planning  
82 Running Hill Road, Suite 201  
South Portland, ME 04106  
Tel (207) 228-0933; Cell (207) 841-3791  
Email [jugates@hntb.com](mailto:jugates@hntb.com)



## Map of Abutting Properties



## List of Abutting Properties

Lot Number	Name	Attention	Address	Town	State	Zip
R78/62A	Gillies and Prittie, Inc.		151 Pleasant Hill Road	Scarborough	ME	04074
R78/73Y, R78/73	SPM Holdings, LLC	Stephen McBrady	19 Wynmoor Drive	Scarborough	ME	04074
R78/84A, R78/85	ABCO Rental & Storage Inc.		95 Pleasant Hill Road	Scarborough	ME	04074
R78/87	Theresa M Desfosses Revocable Trust		126 US Route 1	Scarborough	ME	04074
R78/46	Louis & Roberta Maietta		199 Elderberry Drive	South Portland	ME	04106
R77/04, R78/68, R78/44	Central Maine Power CO.		83 Edison Drive	Augusta	ME	04336
R78/66	Pleasant Hill Development, Inc	Hannaford Bros. Co	PO Box 1000	Portland	ME	04104
R78/30, 59/5, 60/3, 60/1	H & H Associates, LLC		446 Commercial Street	Portland	ME	04101
R78/41, R78/41A, R78/30A, R78/40, R78/40A, R78/39	Donald & Lisa Prout		128 Pleasant Hill Road	Scarborough	ME	04074
R78/83	CSX Transportation		20 Rigby Road	South Portland	ME	04106
R78/30B	Town of Scarborough		P.O. Box 360	Scarborough	ME	04070
R78/84	Pleasant Hill Road, LLC		301 Route 17 North STE 406	Rutherford	NJ	07070
R78/31	Portland Water District		PO Box 3553	Portland	ME	04101
R78/70	Kebiwil, LLC		22 Kelley Rd	Falmouth	ME	04105
R78/32	David J Deschaine		15 Pond View Drive	Scarborough	ME	04074
R78/33	Karen Libby		13 Pond View Drive	Scarborough	ME	04074
R78/34	John & Cherrie Macinnes		11 Pond View Drive	Scarborough	ME	04074
R78/35	Sovann Meas		9 Pond View Drive	Scarborough	ME	04074
R78/36	Joyanna M Bernardo		7 Pond View Drive	Scarborough	ME	04074
R78/37	Linda Welch		5 Pond View Drive	Scarborough	ME	04074

*MDEP/USACE Permit Application*

R78/38	Kimberly & Peter Hatem		3 Pond View Drive	Scarborough	ME	04074
R78/41B	NKA, LLC.		136 Pleasant Hill Road	Scarborough	ME	04074
R78/72	117 Pleasant Hill Corp		PO Box 1659	Portland	ME	04104
R78/69	Larry Smith & Thomas Fasulo		9 Marcia Street	Scarborough	ME	04074
R78/43	Lisa & David Sands		16 Pond View Drive	Scarborough	ME	04074
R78/42	Keenan Excavating Co., LLC		PO Box 1665	Scarborough	ME	04070
R78/45	V&E Enterprises		199 Elderberry Drive	South Portland	ME	04106
R78/50A	M7 Land Company LLC		199 Elderberry Drive	South Portland	ME	04106
56-4D	South Portland		PO Box 9422	South Portland	ME	04116



## **ATTACHMENT 11 – MHPC AND NATURAL RESOURCE AGENCY CORRESPONDENCE**

As detailed in the attached documents, based on a Project review by state and federal agencies and Native American tribes, one National Register (NR) eligible resource was identified within the Project area. The Boston & Maine Railroad, located at Station Number 123+00, is eligible for the National Register under Criterion A, Transportation and Local History. Consultation with state and federal agencies and Native American tribes were performed as part of this application process (Attachment 11: MHPC and Natural Resource Agency Correspondence), including meetings and site visits with agency staff held in May, June, July, and September 2012, and September, October, and November of 2013. The Project was also introduced at a public information session held on November 4, 2013, in accordance with MaineDOT public outreach requirements (Attachment 10: Notice of Intent to File & Public Notice). MHPC concluded that the Project will not result in any effect on archaeological properties.

No rare, threatened, or endangered plant or animal species, significant natural communities, or tribal interests are known to occur on the site. However, several species/features were identified by agencies and background data review which may occur on the Project site or that may utilize habitats found within the site, including:

- The federally and state-listed endangered Northern Long-eared Bat.
- The state-listed threatened Little Brown Bat and Eastern Small-footed Bat.
- The state-listed New England Cottontail (NEC).
- Five Maine Species of Special Concern (big brown bat, red bat, hoary bat, silver-haired bat, and tri-colored bat).
- Vegetated habitat for migratory birds, some of which are identified as Birds of Conservation Concern.

An active population of NEC are known to occur within 1/3 mile of the Project site. Therefore, a pellet survey was conducted by Normandeau Associates in 2012; no NEC pellets were encountered. A subsequent site visit by MDIFW and NewEarth Ecological identified several specific locations of the utility line corridor as potential low-moderate value or moderate-high habitat for NEC. The trail alignment was subsequently shifted from its original proposed location along the south corridor edge, to the north and mostly within existing disturbed areas along commercial properties; thereby avoiding much of the potential NEC habitat identified in 2013.

Given the delay in the Project since 2013, MDIFW reassessed potential habitat in the Project area in November 2018. The findings were that although some habitat suitable for NEC was identified within the CMP utility corridor, MDIFW staff found no significant concerns regarding direct impacts of the Project on NEC (see attached correspondence). Through avoidance and minimization efforts, the trail width and overall construction footprint have been minimized to the greatest extent practicable.

However, the clearing and/or disturbance of vegetation within the CMP corridor will also be minimized where practicable.

Bats may be found in the general vicinity of the site, and tree removals are a component of the Project. However, based on the attached input from MDIFW, MNAP, and the USFWS, the proposed Project and schedule are not expected to cause significant adverse impacts to populations.



## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

Maine Ecological Services Field Office

P. O. Box A

East Orland, ME 04431

Phone: (207) 469-7300 Fax: (207) 902-1588



In Reply Refer To:

04/24/2024 18:07:33 UTC

Project Code: 2023-0128338

Project Name: MaineDOT 19426.00 and 19426.10 Eastern Trail

Subject: List of threatened and endangered species that may occur in your proposed project location 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 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 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:

<https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

**Migratory Birds:** In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see <https://www.fws.gov/program/migratory-bird-permit/what-we-do>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see <https://www.fws.gov/library/collections/threats-birds>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

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 Code 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
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

## 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:

**Maine Ecological Services Field Office**

P. O. Box A

East Orland, ME 04431

(207) 469-7300

## PROJECT SUMMARY

Project Code: 2023-0128338  
Project Name: MaineDOT 19426.00 and 19426.10 Eastern Trail  
Project Type: Recreation - New Construction  
Project Description: Construction of a segment of the Eastern Trail connecting Scarborough and South Portland. 19426.00 South Portland : Beginning at Wainright Field in South Portland and extending south 0.80 of a mile to Pleasant Hill Road in Scarborough. Eastern Trail bicycle and pedestrian connection. 19426.10 Scarborough: Beginning at Nonesuch River and extending 0.60 of a mile to Pleasant Hill Road. Includes two bridges; neither which include in-water work.

### Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.6040988024653,-70.29479433872855,14z>



Counties: Cumberland County, Maine



## ENDANGERED SPECIES ACT SPECIES

There is a total of 3 threatened, endangered, or candidate species on this species list.

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

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

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

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

## MAMMALS

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/10515">https://ecos.fws.gov/ecp/species/10515</a>	Proposed Endangered

## INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Candidate

## CRITICAL HABITATS

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

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

## USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

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

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

## BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act<sup>1</sup> and the Migratory Bird Treaty Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats<sup>3</sup>, should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the ["Supplemental Information on Migratory Birds and Eagles"](#).

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

### 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#)

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

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. <a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a>	Breeds Oct 15 to Aug 31

## PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

### Breeding Season (■)

Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

### Survey Effort (|)

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

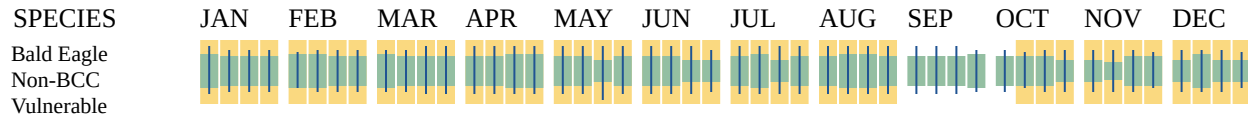
### No Data (—)

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

---

■ probability of presence   ■ breeding season   | survey effort   — no data





Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

## MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats<sup>3</sup> should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "[Supplemental Information on Migratory Birds and Eagles](#)".

- 
1. The [Migratory Birds Treaty Act](#) of 1918.
  2. The [Bald and Golden Eagle Protection Act](#) of 1940.
  3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

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

NAME	BREEDING SEASON
American Oystercatcher <i>Haematopus palliatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/8935">https://ecos.fws.gov/ecp/species/8935</a>	Breeds Apr 15 to Aug 31

NAME	BREEDING SEASON
<b>Bald Eagle <i>Haliaeetus leucocephalus</i></b> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. <a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a>	Breeds Oct 15 to Aug 31
<b>Black Skimmer <i>Rynchops niger</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/5234">https://ecos.fws.gov/ecp/species/5234</a>	Breeds May 20 to Sep 15
<b>Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9399">https://ecos.fws.gov/ecp/species/9399</a>	Breeds May 15 to Oct 10
<b>Blue-winged Warbler <i>Vermivora cyanoptera</i></b> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/9509">https://ecos.fws.gov/ecp/species/9509</a>	Breeds May 1 to Jun 30
<b>Bobolink <i>Dolichonyx oryzivorus</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9454">https://ecos.fws.gov/ecp/species/9454</a>	Breeds May 20 to Jul 31
<b>Canada Warbler <i>Cardellina canadensis</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9643">https://ecos.fws.gov/ecp/species/9643</a>	Breeds May 20 to Aug 10
<b>Chimney Swift <i>Chaetura pelagica</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9406">https://ecos.fws.gov/ecp/species/9406</a>	Breeds Mar 15 to Aug 25
<b>Eastern Whip-poor-will <i>Antrostomus vociferus</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/10678">https://ecos.fws.gov/ecp/species/10678</a>	Breeds May 1 to Aug 20
<b>Hudsonian Godwit <i>Limosa haemastica</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9482">https://ecos.fws.gov/ecp/species/9482</a>	Breeds elsewhere
<b>Least Tern <i>Sternula antillarum antillarum</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/11919">https://ecos.fws.gov/ecp/species/11919</a>	Breeds Apr 25 to Sep 5

NAME	BREEDING SEASON
<b>Lesser Yellowlegs</b> <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9679">https://ecos.fws.gov/ecp/species/9679</a>	Breeds elsewhere
<b>Long-eared Owl</b> <i>asio otus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/3631">https://ecos.fws.gov/ecp/species/3631</a>	Breeds Mar 1 to Jul 15
<b>Pectoral Sandpiper</b> <i>Calidris melanotos</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9561">https://ecos.fws.gov/ecp/species/9561</a>	Breeds elsewhere
<b>Prairie Warbler</b> <i>Setophaga discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9513">https://ecos.fws.gov/ecp/species/9513</a>	Breeds May 1 to Jul 31
<b>Prothonotary Warbler</b> <i>Protonotaria citrea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9439">https://ecos.fws.gov/ecp/species/9439</a>	Breeds Apr 1 to Jul 31
<b>Purple Sandpiper</b> <i>Calidris maritima</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9574">https://ecos.fws.gov/ecp/species/9574</a>	Breeds elsewhere
<b>Ruddy Turnstone</b> <i>Arenaria interpres morinella</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/10633">https://ecos.fws.gov/ecp/species/10633</a>	Breeds elsewhere
<b>Rusty Blackbird</b> <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/9478">https://ecos.fws.gov/ecp/species/9478</a>	Breeds elsewhere
<b>Saltmarsh Sparrow</b> <i>Ammospiza caudacuta</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9719">https://ecos.fws.gov/ecp/species/9719</a>	Breeds May 15 to Sep 5
<b>Scarlet Tanager</b> <i>Piranga olivacea</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/11967">https://ecos.fws.gov/ecp/species/11967</a>	Breeds May 10 to Aug 10



NAME	BREEDING SEASON
<b>Semipalmated Sandpiper <i>Calidris pusilla</i></b> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/9603">https://ecos.fws.gov/ecp/species/9603</a>	Breeds elsewhere
<b>Short-billed Dowitcher <i>Limnodromus griseus</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9480">https://ecos.fws.gov/ecp/species/9480</a>	Breeds elsewhere
<b>Whimbrel <i>Numenius phaeopus hudsonicus</i></b> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/11991">https://ecos.fws.gov/ecp/species/11991</a>	Breeds elsewhere
<b>Willet <i>Tringa semipalmata</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/10669">https://ecos.fws.gov/ecp/species/10669</a>	Breeds Apr 20 to Aug 5
<b>Wood Thrush <i>Hylocichla mustelina</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9431">https://ecos.fws.gov/ecp/species/9431</a>	Breeds May 10 to Aug 31

## PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

### Breeding Season (■)

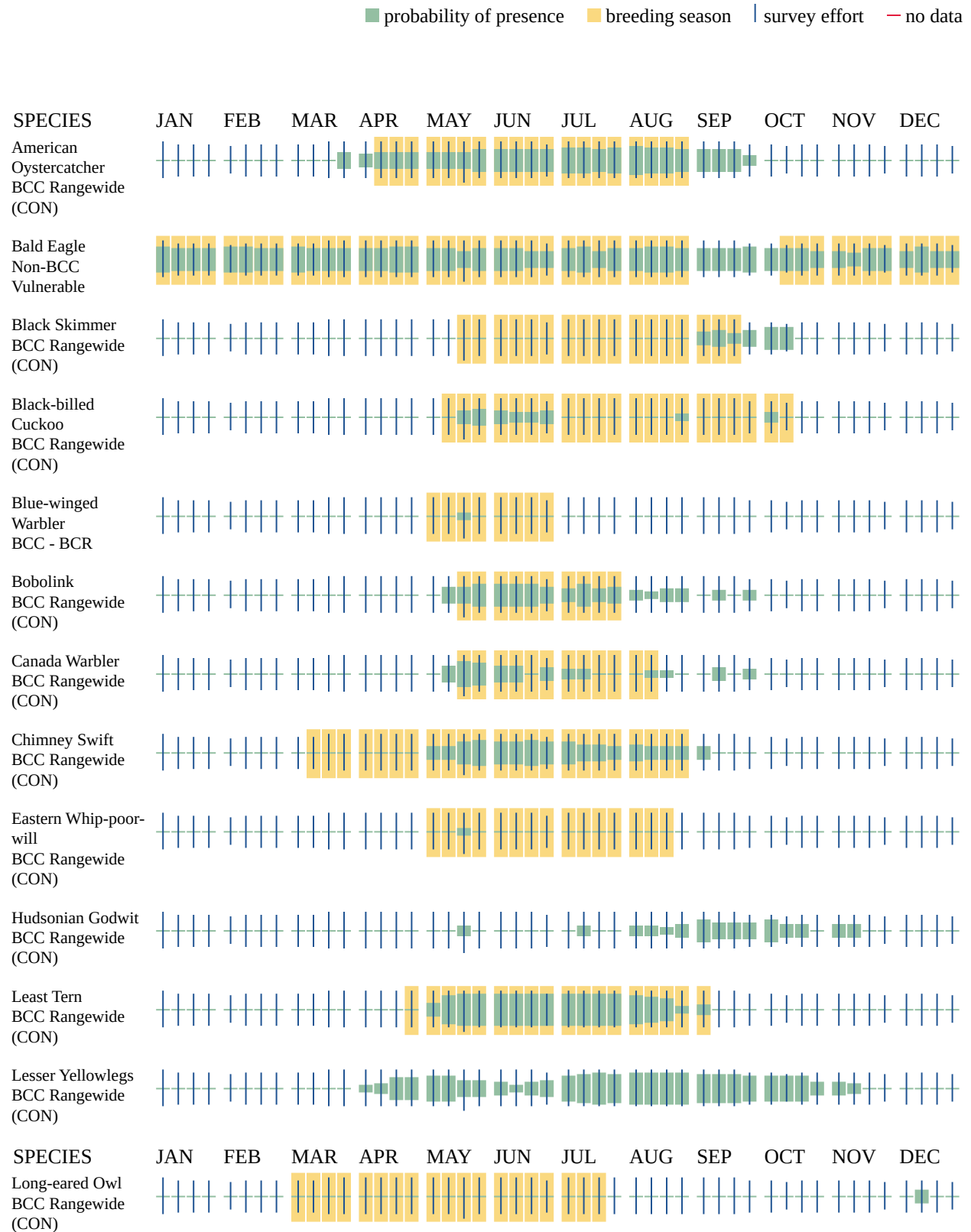
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

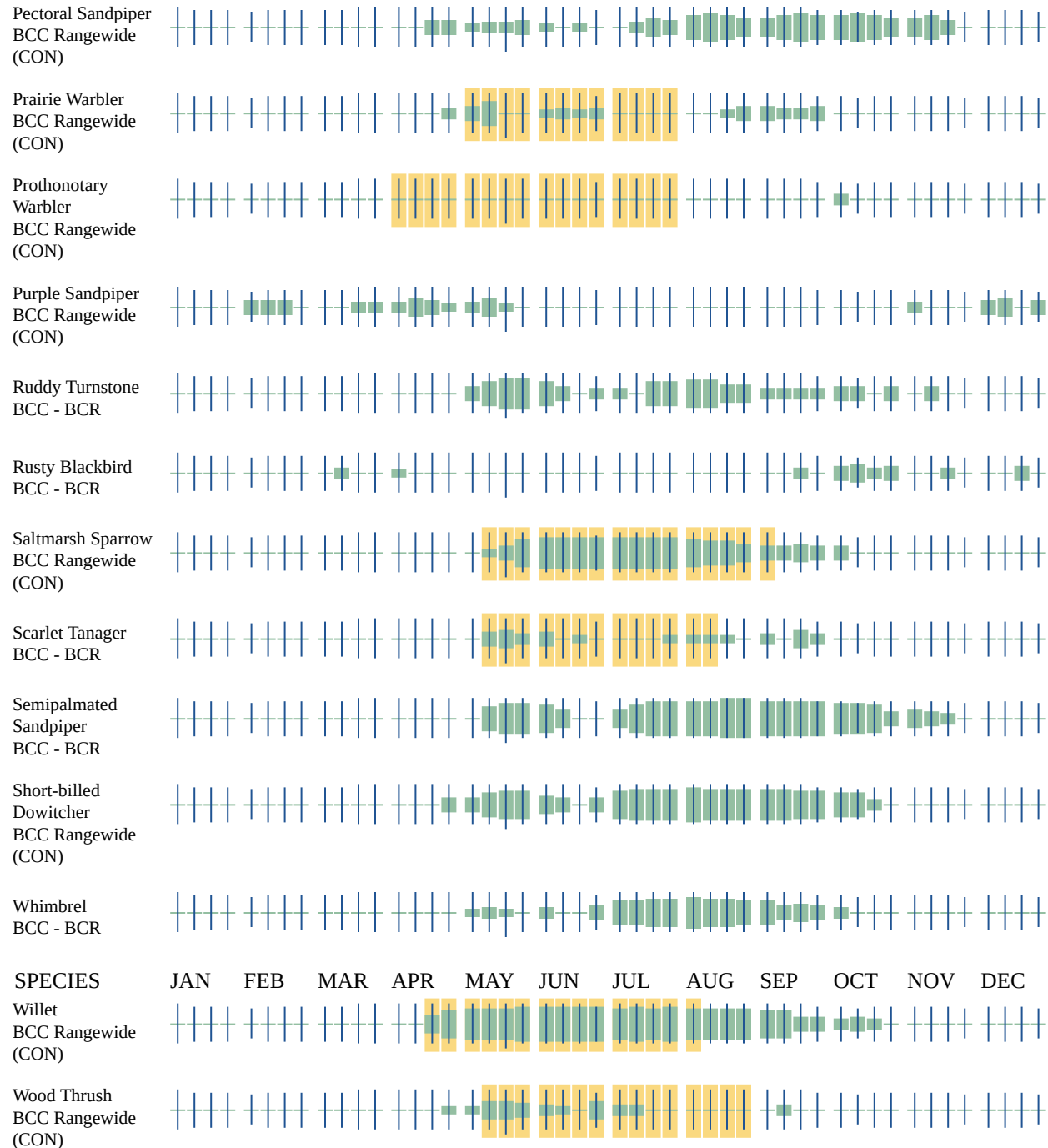
### Survey Effort (|)

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

### No Data (—)

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





Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>



- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

## WETLANDS

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

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

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

### RIVERINE

- R4SBCx
- R2UBH

### ESTUARINE AND MARINE DEEPWATER

- E1UBL6

### ESTUARINE AND MARINE WETLAND

- E2EM1P6

### FRESHWATER FORESTED/SHRUB WETLAND

- PFO1/4Rd
- PFO1R
- PSS1R
- PSS1/EM1E

### FRESHWATER EMERGENT WETLAND

- PEM1Bd

## **IPAC USER CONTACT INFORMATION**

Agency: Maine Department of Transportation

Name: Nick Koltai

Address: 16 State House Station

City: Augusta

State: ME

Zip: 04333

Email: [nicholas.koltai@maine.gov](mailto:nicholas.koltai@maine.gov)

Phone: 2075573471



## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

Maine Ecological Services Field Office

P. O. Box A

East Orland, ME 04431

Phone: (207) 469-7300 Fax: (207) 902-1588



In Reply Refer To:

04/25/2024 14:29:25 UTC

Project code: 2023-0128338

Project Name: MaineDOT 19426.00 and 19426.10 Eastern Trail

Federal Nexus: yes

Federal Action Agency (if applicable): Maine Department of Transportation

**Subject:** Technical assistance for 'MaineDOT 19426.00 and 19426.10 Eastern Trail'

Dear Nick Koltai:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on April 25, 2024, for 'MaineDOT 19426.00 and 19426.10 Eastern Trail' (here forward, Project). This project has been assigned Project Code 2023-0128338 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements are not complete.**

### Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project. **Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter.**

### Determination for the Northern Long-Eared Bat

Based on your IPaC submission and the standing analysis for the Dkey, your project has reached the determination of "May Affect" the northern long-eared bat.

### Next Steps

Your action may qualify for the Interim Consultation Framework for the northern long-eared bat. To determine if it qualifies, review the Interim Consultation Framework posted here <https://www.fws.gov/library/collections/interim-consultation-framework-northern-long-eared-bat>. If you



determine it meets the requirements of the Interim Consultation Framework, follow the procedures outlined there to complete section 7 consultation.

If your project does **not** meet the requirements of the Interim Consultation Framework, please contact the Maine Ecological Services Field Office for further coordination on this project. Further consultation or coordination with the Service is necessary for those species or designated critical habitats with a determination of “May Affect”.

### **Other Species and Critical Habitat that May be Present in the Action Area**

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Monarch Butterfly *Danaus plexippus* Candidate
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

You may coordinate with our Office to determine whether the Action may cause prohibited take of the species listed above.

## Action Description

You provided to IPaC the following name and description for the subject Action.

### 1. Name

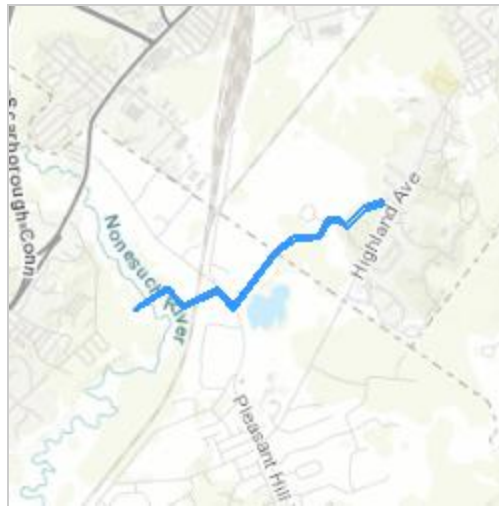
MaineDOT 19426.00 and 19426.10 Eastern Trail

### 2. Description

The following description was provided for the project 'MaineDOT 19426.00 and 19426.10 Eastern Trail':

Construction of a segment of the Eastern Trail connecting Scarborough and South Portland. 19426.00 South Portland : Beginning at Wainright Field in South Portland and extending south 0.80 of a mile to Pleasant Hill Road in Scarborough. Eastern Trail bicycle and pedestrian connection. 19426.10 Scarborough: Beginning at Nonesuch River and extending 0.60 of a mile to Pleasant Hill Road. Includes two bridges; neither which include in-water work.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.6040988024653,-70.29479433872855,14z>



## DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of “may affect” for the Endangered northern long-eared bat (*Myotis septentrionalis*).

## QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

**Note:** Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

No

2. Does any component of the action involve construction or operation of wind turbines?

**Note:** For federal actions, answer ‘yes’ if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

No

3. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

Yes

4. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

Yes

5. FHWA, FRA, and FTA have completed a range-wide programmatic consultation for transportation- related actions within the range of the Indiana bat and northern long-eared bat.

Does your proposed action fall within the scope of this programmatic consultation?

**Note:** If you have **previously consulted** on your proposed action with the Service under the NLEB 4dRule, answer ‘no’ to this question and proceed with using this key. If you have **not yet consulted** with the Service on your proposed action and are unsure whether your proposed action falls within the scope of the FHWA, FRA, FTA range-wide programmatic consultation, please select “Yes” and use the FHWA, FRA, FTA Assisted Determination Key in IPaC to determine if the programmatic consultation is applicable to your action. Return to this key and answer ‘no’ to this question if it is not.

No



6. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

**Note:** This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

Yes

7. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

No

8. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)?

No

9. Have you determined that your proposed action will have no effect on the northern long-eared bat? Remember to consider the [effects of any activities](#) that would not occur but for the proposed action.

If you think that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, answer “No” below and continue through the key. If you have determined that the northern long-eared bat does not occur in your project’s action area and/or that your project will have no effects whatsoever on the species despite the potential for it to occur in the action area, you may make a “no effect” determination for the northern long-eared bat.

**Note:** Federal agencies (or their designated non-federal representatives) must consult with USFWS on federal agency actions that may affect listed species [50 CFR 402.14(a)]. Consultation is not required for actions that will not affect listed species or critical habitat. Therefore, this determination key will not provide a consistency or verification letter for actions that will not affect listed species. If you believe that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, please answer “No” and continue through the key. Remember that this key addresses only effects to the northern long-eared bat. Consultation with USFWS would be required if your action may affect another listed species or critical habitat. The definition of [Effects of the Action](#) can be found here: <https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions>

No

10. [Semantic] Is the action area located within 0.5 miles of a known northern long-eared bat hibernaculum?

**Note:** The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

**Automatically answered**

No

11. Does the action area contain any caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating northern long-eared bats?

No

12. Does the action area contain or occur within 0.5 miles of (1) talus or (2) anthropogenic or naturally formed rock crevices in rocky outcrops, rock faces or cliffs?

No

13. Is suitable summer habitat for the northern long-eared bat present within 1000 feet of project activities?

(If unsure, answer "Yes.")

**Note:** If there are trees within the action area that are of a sufficient size to be potential roosts for bats (i.e., live trees and/or snags  $\geq 3$  inches (12.7 centimeter) dbh), answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat can be found at: <https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions>

Yes

14. Will the action cause effects to a bridge?

No

15. Will the action result in effects to a culvert or tunnel?

No

16. Does the action include the intentional exclusion of northern long-eared bats from a building or structure?

**Note:** Exclusion is conducted to deny bats' entry or reentry into a building. To be effective and to avoid harming bats, it should be done according to established standards. If your action includes bat exclusion and you are unsure whether northern long-eared bats are present, answer "Yes." Answer "No" if there are no signs of bat use in the building/structure. If unsure, contact your local U.S. Fish and Wildlife Services Ecological Services Field Office to help assess whether northern long-eared bats may be present. Contact a Nuisance Wildlife Control Operator (NWCO) for help in how to exclude bats from a structure safely without causing harm to the bats (to find a NWCO certified in bat standards, search the Internet using the search term "National Wildlife Control Operators Association bats"). Also see the White-Nose Syndrome Response Team's guide for bat control in structures

No

17. Does the action involve removal, modification, or maintenance of a human-made structure (barn, house, or other building) **known or suspected to contain roosting bats**?

No

18. Will the action directly or indirectly cause construction of one or more new roads that are open to the public?

**Note:** The answer may be yes when a publicly accessible road either (1) is constructed as part of the proposed action or (2) would not occur but for the proposed action (i.e., the road construction is facilitated by the proposed action but is not an explicit component of the project).

*No*

19. Will the action include or cause any construction or other activity that is reasonably certain to increase average daily traffic on one or more existing roads?

**Note:** For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

*No*

20. Will the action include or cause any construction or other activity that is reasonably certain to increase the number of travel lanes on an existing thoroughfare?

For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

*No*

21. Will the proposed action involve the creation of a new water-borne contaminant source (e.g., leachate pond pits containing chemicals that are not NSF/ANSI 60 compliant)?

*No*

22. Will the proposed action involve the creation of a new point source discharge from a facility other than a water treatment plant or storm water system?

*No*

23. Will the action include drilling or blasting?

*No*

24. Will the action involve military training (e.g., smoke operations, obscurant operations, exploding munitions, artillery fire, range use, helicopter or fixed wing aircraft use)?

*No*

25. Will the proposed action involve the use of herbicide or other pesticides (e.g., fungicides, insecticides, or rodenticides)?

*No*



26. Will the action include or cause activities that are reasonably certain to cause chronic nighttime noise in suitable summer habitat for the northern long-eared bat? Chronic noise is noise that is continuous or occurs repeatedly again and again for a long time.

**Note:** Additional information defining suitable summer habitat for the northern long-eared bat can be found at:

<https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions>

No

27. Does the action include, or is it reasonably certain to cause, the use of artificial lighting within 1000 feet of suitable northern long-eared bat roosting habitat?

**Note:** Additional information defining suitable roosting habitat for the northern long-eared bat can be found at:

<https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions>

Yes

28. Will the action use only downward-facing, full cut-off lens lights (with same intensity or less for replacement lighting) when installing new or replacing existing permanent lights? Or for those transportation agencies using the Backlight, Uplight, Glare (BUG) system developed by the Illuminating Engineering Society, will all three ratings (backlight, uplight, and glare) be as close to zero as is possible, with a priority of "uplight" of 0?

Yes

29. Will the action direct any temporary lighting away from suitable northern long-eared bat roosting habitat during the active season?

**Note:** Active season dates for northern long-eared bat can be found here: <https://www.fws.gov/media/inactive-season-dates-swarming-and-staging-areas>.

Yes

30. Will the action include tree cutting or other means of knocking down or bringing down trees, tree topping, or tree trimming?

Yes

31. Does the action include emergency cutting or trimming of hazard trees in order to remove an imminent threat to human safety or property? See hazard tree note at the bottom of the key for text that will be added to response letters

**Note:** A "hazard tree" is a tree that is an immediate threat to lives, public health and safety, or improved property and has a diameter breast height of six inches or greater.

No

32. Are any of the trees proposed for cutting or other means of knocking down, bringing down, topping, or trimming suitable for northern long-eared bat roosting (i.e., live trees and/or snags  $\geq 3$  inches dbh that have exfoliating bark, cracks, crevices, and/or cavities)?

Yes

33. [Semantic] Does your project intersect a known sensitive area for the northern long-eared bat?

**Note:** The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your [state agency or USFWS field office](#)

**Automatically answered**

Yes

## PROJECT QUESTIONNAIRE

Enter the extent of the action area (in acres) from which trees will be removed - round up to the nearest tenth of an acre. For this question, include the entire area where tree removal will take place, even if some live or dead trees will be left standing.

3.5

In what extent of the area (in acres) will trees be cut, knocked down, or trimmed during the inactive (hibernation) season for northern long-eared bat? **Note:** Inactive Season dates for spring staging/fall swarming areas can be found here: <https://www.fws.gov/media/inactive-season-dates-swarming-and-staging-areas>

3.5

In what extent of the area (in acres) will trees be cut, knocked down, or trimmed during the active (non-hibernation) season for northern long-eared bat? **Note:** Inactive Season dates for spring staging/fall swarming areas can be found here: <https://www.fws.gov/media/inactive-season-dates-swarming-and-staging-areas>

0

Will all potential northern long-eared bat (NLEB) roost trees (trees  $\geq 3$  inches diameter at breast height, dbh) be cut, knocked, or brought down from any portion of the action area greater than or equal to 0.1 acre? If all NLEB roost trees will be removed from multiple areas, select 'Yes' if the cumulative extent of those areas meets or exceeds 0.1 acre.

Yes

Enter the extent of the action area (in acres) from which all potential NLEB roost trees will be removed. If all NLEB roost trees will be removed from multiple areas, entire the total extent of those areas. Round up to the nearest tenth of an acre.

3.5

For the area from which all potential northern long-eared bat (NLEB) roost trees will be removed, on how many acres (round to the nearest tenth of an acre) will trees be allowed to regrow? Enter '0' if the entire area from which all potential NLEB roost trees are removed will be developed or otherwise converted to non-forest for the foreseeable future.

3.0

Will any snags (standing dead trees)  $\geq 3$  inches dbh be left standing in the area(s) in which all northern long-eared bat roost trees will be cut, knocked down, or otherwise brought down?

No

Will all project activities be completed by April 1, 2024?

No



## **IPAC USER CONTACT INFORMATION**

Agency: Maine Department of Transportation

Name: Nick Koltai

Address: 16 State House Station

City: Augusta

State: ME

Zip: 04333

Email: [nicholas.koltai@maine.gov](mailto:nicholas.koltai@maine.gov)

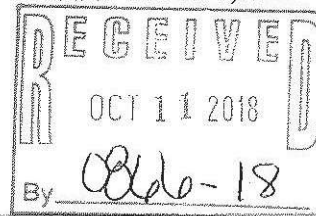
Phone: 2075573471

# STATE OF MAINE

## Memorandum

Date: October 9, 2018

To: Kirk F. Mohnhey, MHPC  
From: Julie Senk, Maine DOT/ENV  
Subject: Section 106 request for concurrence  
Project: South Portland-Scarborough 19426.00 and 19426.10; MHPC #0866-18  
Scope: New trail construction



The Maine DOT has reviewed this project pursuant to the Maine Programmatic Agreement (PA) and Section 106 of the National Historic Preservation Act of 1966, as amended.

The project consists of new trail construction in South Portland-Scarborough.

In accordance with 36 CFR Part 800.4, the following identification efforts of historic properties were made:

- 800.4(a) (1) – The Area of Potential Effect (APE) includes properties/structures adjacent to the trail and within the project limits. The project limits are defined by the structure and the immediately adjacent area. Properties/structures adjacent to this project limit are considered to be within the APE. The APE is shown as a red polygon on the attached map.
- 800.4(a) (2) – Review of existing information consisted of researching the National Register and MHPC survey databases. The Maine Historic Preservation Commission Archaeological staff reviewed the undertaking.
- 800.4(a) (3) – The City of South Portland and the Town of Scarborough, along with applicable historical societies, were contacted via letter and asked to comment on knowledge of, or concerns with, historic properties in the area, and any issues with the undertaking's effect on historic properties. The city and town were also requested to provide information regarding local historic societies or groups. The South Portland Historical Society replied with no objection to the proposed undertaking.
- 800.4(a) (4) – Letters outlining project location and scope were sent to the 4 federally recognized Tribes in Maine. The Penobscot Nation and Houlton Band of Maliseet replied with no concern.
- 800.4(c) – The Maine DOT conducted historic architectural surveys within the APE to determine if properties met National Register criteria. Maine Historic Preservation Commission Archaeological staff reviewed the undertaking and recommended "no archaeological properties affected by the proposed undertaking." The Maine DOT has determined that one historic property, the Boston & Maine Railroad, is eligible for listing in the National Register of Historic Places.

***In accordance with 36 CFR Part 800.4(d), the Maine DOT has determined that the proposed undertaking would result in No Adverse Effect to historic or prehistoric archaeological properties or historic architectural properties.***

In accordance with the PA and 36 CFR Part 800, please reply with your concurrence or objection to this determination of effect within 30 days.

Please contact me at Julie.senk@maine.gov or 592-3486 if you have any questions. Thank you.

cc: CPD e-file  
enc: Supplemental Supporting Information for a Finding of Effect

CONCUR	
	10/12/18
Kirk F. Mohnhey, State Historic Preservation Officer	Date



MAINE HISTORIC PRESERVATION COMMISSION  
55 CAPITOL STREET  
65 STATE HOUSE STATION  
AUGUSTA, MAINE  
04333

PAUL R. LEPAGE  
GOVERNOR

KIRK F. MOHNEY  
DIRECTOR

July 13, 2018

To: Ms. Julie Senk, MDOT/ESD

From: Arthur Spiess, Senior Archaeologist

Subject: WIN 19426,00, Eastern trail connection Bath (MHPC 0866-18)

**Our fieldwork in 2015 for the original version of this project adequately covered the areas of archaeological sensitivity.** For the slightly altered design, after reviewing our archaeological survey records and maps, including historic maps and surficial geology maps, and comparing this information with a predictive model of archaeological site locations, we find that no archaeological fieldwork is necessary for this project, based on the project location and general project description information received with your memo of July 6, 2018. It is extremely unlikely that an archaeological site would be affected by this project, in our opinion.

In following the procedures specified in the Federal Highway/MHPC/MDOT programmatic agreement, we **recommend a finding "that there will be no archaeological properties affected by the proposed undertaking."**



## **Supplemental Supporting Information for a Finding of Effect**

### **South Portland-Scarborough 19426.00 and 19426.10**

Scope: Trail construction

Finding of Effect: **No Adverse Effect**

---

#### **Purpose and Need**

The purpose of the locally administrated project is to increase pedestrian mobility and safety by extending the multi-use Eastern Trail from Scarborough to South Portland as part of the Eastern Trail Management District's initiative to create a 55-mile non-motorized transportation corridor between Kittery and South Portland.

The need of this project is lack of a continuous trail system between Scarborough and South Portland.

#### **Proposed Action**

The proposed action is to construct a multi-use trail between Scarborough and the Wainwright Sports Complex in South Portland. The work would not physically alter historic buildings, structures, or landscapes within the Area of Potential Effect (APE). Trail easements would need to be acquired from multiple private entities. The trail would be constructed of 2" hot mixed asphalt (HMA) or stonedust surface over a variable depth aggregate subbase course (gravel, type D-modified). The width of the trail would be 10' to 12', with 2' shoulders, and a 5' minimum clear zone (vegetation removed) on each side. Shoulders would be loamed and seeded after placement of trail surface. Fencing would be installed along the trail at bridge approaches and along waterbodies and would consist of cedar rail or PVC coated chain link. Two bridges would be constructed over the Nonesuch River and the Pan Am Railroad. Both bridges would be prefabricated steel truss with timber decking. The proposed Nonesuch River Bridge (STA 100+00) would be supported by concrete pedestals installed on the existing granite masonry abutments. The proposed Pan Am Railroad Bridge (STA 123+00) is within Pan Am's right of way. The bridge would be supported by steel H-piles and reinforced concrete piers. The bridge railing would have a minimum of 107' of protective screening. A prefabricated concrete modular gravity wall will be installed east of the railway between STA 126+43.49 to STA 124+35.92. Pan Am has approved the preliminary design.

#### **Federal Action**

Federal funding.

#### **Definition of Area of Potential Effect (APE)**

The proposed project consists of 1.6 miles of trail and bridge construction in Scarborough and South Portland. The map below shows the APE.

## MAINEDOT WIN 19426.00 & 19426.10

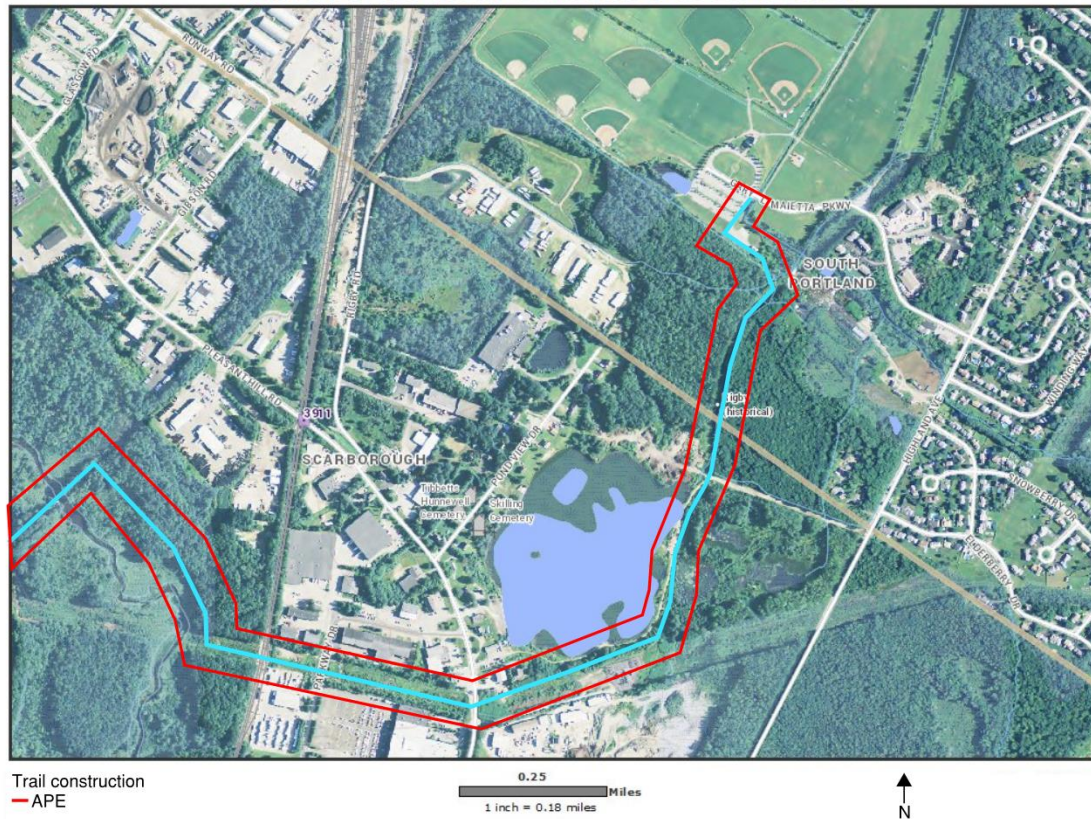


Figure 1. South Portland-Scarborough 19426.10 Area of Potential Effect

## Historic Properties

The proposed project is located in South Portland and Scarborough. There is one National Register (NR) eligible resource within the project area. The following descriptions of historic properties found within the project area are based on the MaineDOT survey package submitted to and concurred with by the Maine Historic Preservation Commission (MHPC).

Boston & Maine Railroad (Pan Am)

STA 123+00

*National Register-Eligible*

*Criterion A; Transportation and Local History*

The Boston & Maine Railroad is eligible for the National Register under Criterion A, Transportation and Local History. It is significant for the role it played in the transportation and economic development of Maine and connecting Maine with the national economy. It is a standard gauge railroad that connects Boston with Portland and to other points north. The Main Line was the dominant mode of transportation in the state until the 1920s when competition from motorized vehicles resulted in the abandonment of many lines. The section of the railroad in the project area remains active and retains all aspects of integrity.

Its period of significance is 1843-1965, when the railroad ceased long distance passenger service.

#### Archeological Resources

There are no archaeological resources in the project area.

#### **Impacts to Property**

The following addresses potential impacts to properties as a result of the proposed action.

#### Boston & Maine Railroad

The proposed action would result in **No Adverse Effect** to the Boston & Maine Railroad. The introduction of new materials would not change the setting, materials, feeling or association of the resource. All work is being completed within the existing right-of-way. The addition of a bridge over the track would not affect the resource's design, materials, workmanship, location, feeling or association.

#### Archaeological Resources

No archaeological properties would be affected by the proposed undertaking.

#### **Avoidance and Minimization Efforts**

The proposed action avoids any physical impacts to the historic resource located in the project area. The addition of a steel truss bridge would not significantly alter the setting of the historic resource. The proposed action does not require any permanent or temporary takes or rights at the eligible properties.

#### **Dismissed Alternatives**

Alternative 1                      No action. Would not meet the purpose and need.

#### **Proposed Materials**

Gravel, hot mixed asphalt, PVC coated chain link fencing, cedar fencing, timber decking, galvanized steel pipe, reinforced concrete, plastic landing mats, collapsible steel bollards.

#### **Plans**

Scarborough and South Portland, Cumberland County, Eastern Trail: Multi-Use  
Recreational Trail Development, Town of Scarborough

#### **Attachments**

Kirk F. Mohny, MHPC, to Julie Senk, MaineDOT, September 6, 2018  
Art Spiess, MHPC, to Julie Senk, MaineDOT, July 13, 2018





MAINE HISTORIC PRESERVATION COMMISSION  
55 CAPITOL STREET  
65 STATE HOUSE STATION  
AUGUSTA, MAINE  
04333

PAUL R. LEPAGE  
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July 13, 2018

To: Ms. Julie Senk, MDOT/ESD

From: Arthur Spiess, Senior Archaeologist

Subject: WIN 19426,00, Eastern trail connection Bath (MHPC 0866-18)

**Our fieldwork in 2015 for the original version of this project adequately covered the areas of archaeological sensitivity.** For the slightly altered design, after reviewing our archaeological survey records and maps, including historic maps and surficial geology maps, and comparing this information with a predictive model of archaeological site locations, we find that no archaeological fieldwork is necessary for this project, based on the project location and general project description information received with your memo of July 6, 2018. It is extremely unlikely that an archaeological site would be affected by this project, in our opinion.

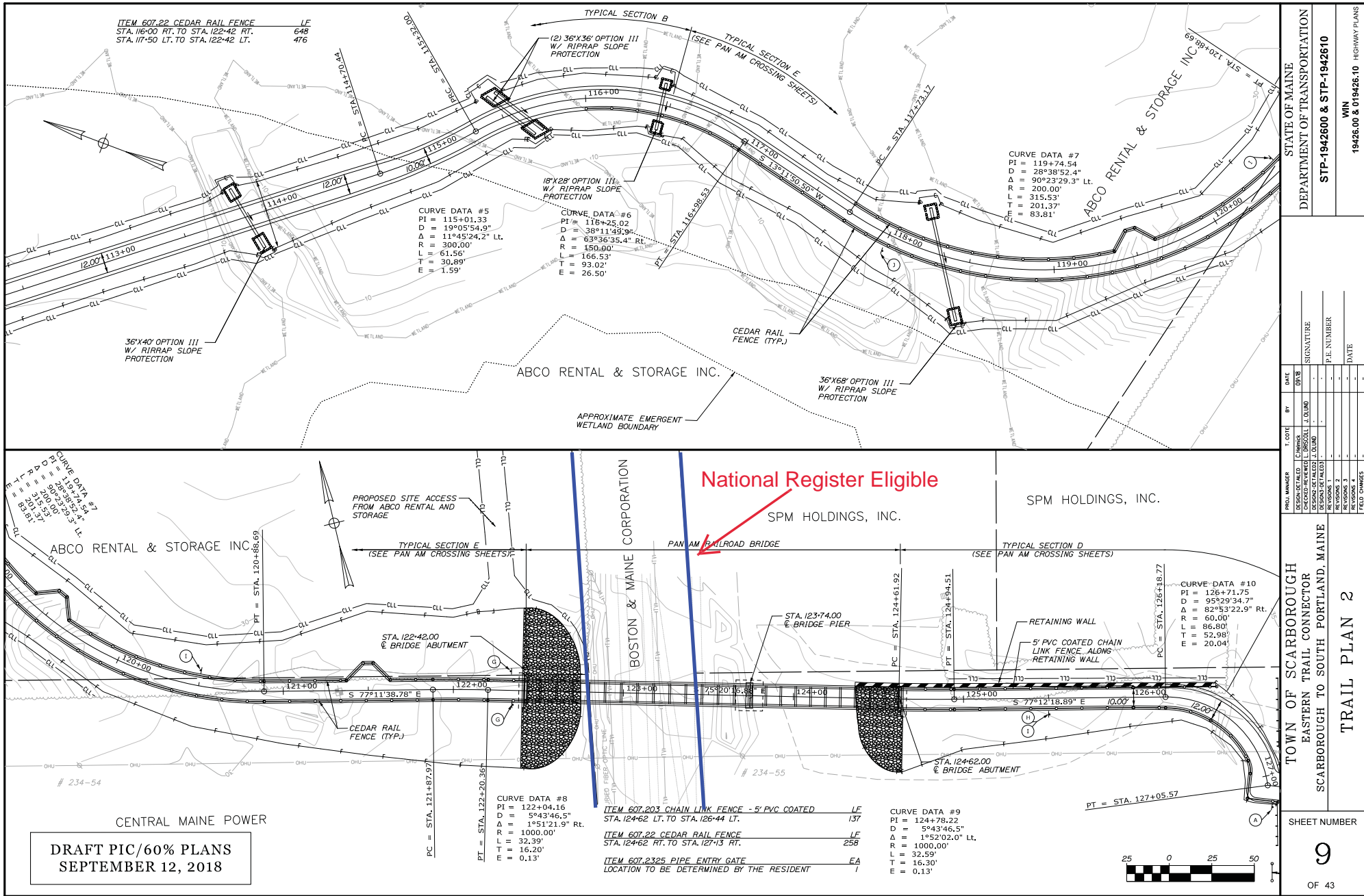
In following the procedures specified in the Federal Highway/MHPC/MDOT programmatic agreement, we **recommend a finding “that there will be no archaeological properties affected by the proposed undertaking.”**

Date: 9/14/2018

Username:

Division:

Filename: 009\_Trail Plan 02.dgn



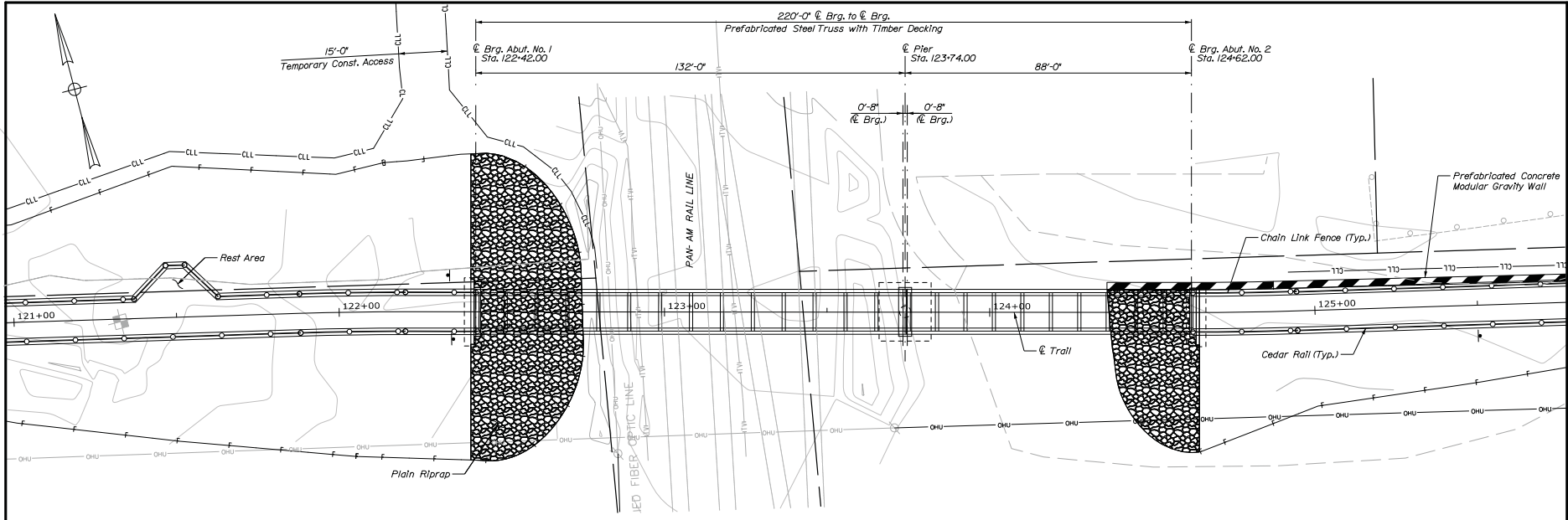
EXISTING ROW

Date: 9/14/2018

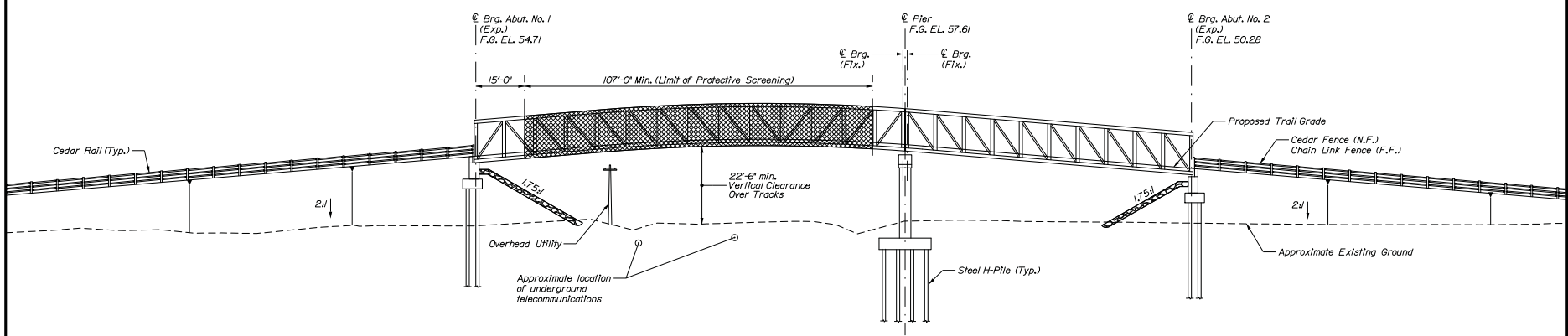
Username:

Division:

Filename: 022\_PanAm GP&E.dgn



PLAN



ELEVATION

DRAFT PIC/60% PLANS  
SEPTEMBER 12, 2018

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		SIGNATURE	
STP-1942600 & STP-1942610		P.L. NUMBER	
WIN		DATE	
19426.00 & 019426.10		FIELD CHANGES	
TOWN OF SCARBOROUGH EASTERN TRAIL CONNECTOR SCARBOROUGH TO SOUTH PORTLAND, MAINE PAN-AM RAILROAD PLAN & ELEVATION			
SHEET NUMBER			
22			
OF 43			



*1. All construction, handling, assembly, and installation of the Prefabricated Steel Truss shall be in accordance with Special Provisions 104 and 504, and in accordance with the manufacturers recommendations, as applicable.*

3. Design and detailing of bridge superstructure, bearings, anchorages, and sliding plate expansion joints shall be completed by the bridge fabricator. Payment shall be considered incidental to Item 504.01, Prefabricated Steel Truss - Pan Am Railroad.

1. Proposed concrete bridge seat elevations are detailed based on a 24-inch depth from the top of deck to bottom of bottom chord, and a 6-inch height. Adjustments shall be made by the Contractor to the bearing seat elevations to accommodate the actual superstructure and bearing dimensions within the limits shown.

3. The proposed cedar fence rails shall extend over the backwall as needed to ensure a gap no larger than 4" exists between the approach fence and bridge safety rail. At the Contractor's option, alternate means of achieving this result may be submitted for approval.

Diagram illustrating the dimensions and components of a safety enclosure:

- Overall Dimensions:**
  - Width: 12'-6" ±
  - Clear Width: 10'-0"
  - Clear Height: 10'-0" (min.)
- Internal Dimensions:**
  - Clearance from side walls to central area: 5'-0" (each side)
  - Clearance from top chord to central area: 4'-6" (Min.) (Typ.)
  - Clearance from bottom chord to central area: 4'-6" (Min.) (Typ.)
- Components and Labels:**
  - Top Chord (Typ.)
  - Bottom Chord (Typ.)
  - Timber Decking (Installed Perpendicular to  $\phi$  Trail)
  - Steel Stringer
  - Steel Floorbeam
  - Horizontal Safety Rail (Typ.)
  - Steel Toe Plate (Typ.)
  - $\phi$  Trail

DRAFT PIC/60% PLANS  
SEPTEMBER 12, 2018

[illegible]

**Tetreau, Danielle**

---

**From:** Senk, Julie  
**Sent:** Friday, July 06, 2018 1:13 PM  
**To:** 'chris.sockalexis@penobscotnation.org'; 'soctomah@gmail.com'; 'jpictou@micmac-nsn.gov'; 'envplanner@maliseets.com'; 'ogs1@maliseets.com'  
**Subject:** Tribal Notifications  
**Attachments:** Portland 18664.00 Map\_2.pdf; North Berwick 22336.00 Map.jpg; South Portland-Scarborough 19426.00\_19426.10 Map.pdf

Dear Tribal Historic Preservation Officer:

I am writing to inform you that the Federal Highway Administration and the Maine Department of Transportation are planning the following projects:

- Portland – MaineDOT WIN 18664.00 – Intersection Improvements with ADA Upgrades
- North Berwick – MaineDOT WIN 22336.00 – Bridge Superstructure Replacement of Staples Bridge #1238
- South Portland-Scarborough – MaineDOT WIN 19426.00 & 19426.10 – Trail Construction

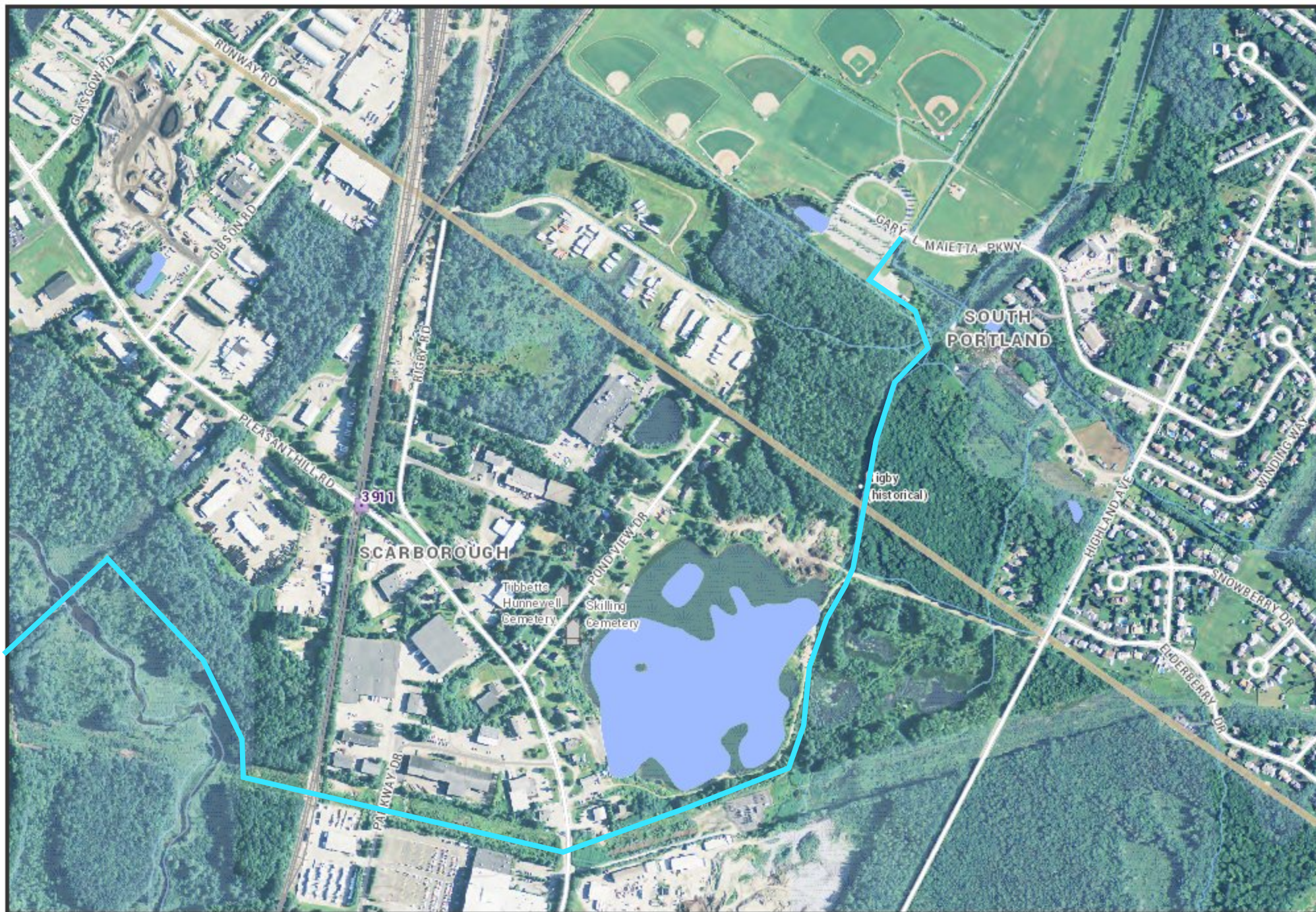
Please review and comment regarding effects to historic properties on tribal lands as well as significant religious and cultural historic properties. This is in accordance with the National Historic Preservation Act, National Environmental Policy Act, American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, Archaeological Resources Protection Act, Executive Order 13007--Indian Sacred Sites, Executive Order 13175--Consultation and Coordination with Indian Tribal Governments, Executive Order 12898--Executive Order on Environmental Justice and the implementing regulations for these authorities. The Maine Historic Preservation Commission will also be identifying National Register Eligible historic properties. Please find enclosed a location map to assist your review.

Thanks,

**Julie Senk**  
Historic Coordinator  
Maine DOT – Environmental Office



# MAINEDOT WIN 19426.00 & 19426.10



The Maine Department of Transportation provides this publication for information only. Reliance upon this information is at user risk. It is subject to revision and may be incomplete depending upon changing conditions. The Department assumes no liability if injuries or damages result from this information. This map is not intended to support emergency dispatch.

0.25  
Miles  
1 inch = 0.18 miles

Date: 7/6/2018  
Time: 11:56:30 AM



Susan Young

Natural Resources Director

88 Bell Road

Littleton, ME 04730

fax 207-532-6883

**Sent:** Friday, July 06, 2018 1:13 PM

**To:** [chris.sockalexis@penobscotnation.org](mailto:chris.sockalexis@penobscotnation.org); [soctomah@gmail.com](mailto:soctomah@gmail.com); [jpictou@micmac-nsn.gov](mailto:jpictou@micmac-nsn.gov); [envplanner@maliseets.com](mailto:envplanner@maliseets.com);

**Subject:** Tribal Notifications

- South Portland-Scarborough – MaineDOT WIN 19426.00 & 19426.10 – Trail Construction

Please review and comment regarding effects to historic properties on tribal lands as well as significant religious and cultural historic properties. This is in accordance with the National Historic Preservation Act, National Environmental Policy Act, American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, Archaeological Resources Protection Act, Executive Order 13007--Indian Sacred Sites, Executive Order 13175--Consultation and Coordination with Indian Tribal Governments, Executive Order 12898--Executive Order on Environmental Justice and the implementing regulations for these authorities. The Maine Historic Preservation Commission will also be identifying National Register Eligible historic properties. Please find enclosed a location map to assist your review.

Thanks,

**Julie Senk**  
Historic Coordinator  
Maine DOT – Environmental Office



PENOBSCOT NATION  
CULTURAL & HISTORIC PRESERVATION DEPARTMENT  
12 WABANAKI WAY, INDIAN ISLAND, ME 04468  
CHRIS SOCKALEXIS – TRIBAL HISTORIC PRESERVATION OFFICER  
E-MAIL: [chris.sockalexis@penobscotnation.org](mailto:chris.sockalexis@penobscotnation.org) FAX: 207-817-7450

NAME	Jay Clement
ADDRESS	US Army Corps of Engineers 675 Western Avenue, #3 Manchester, ME 04351
OWNER'S NAME	Maine DOT & Federal Highway Administration
TELEPHONE	(207) 623-8367
FAX	
EMAIL	Jay.L.Clement@USACE.army.mil
PROJECT NAME	South Portland 19426.00 – Construction of a paved Eastern Trail segment along Old Bog Road – connecting GL Maietta Way (South Portland) to Pond View Drive (Scarborough)
PROJECT SITE	South Portland, ME
DATE OF REQUEST	February 23, 2015
DATE REVIEWED	March 3, 2015

Thank you for the opportunity to comment on the above referenced project. This project appears to have no impact on a structure or site of historic, architectural or archaeological significance to the Penobscot Nation as defined by the National Historic Preservation Act of 1966, as amended.

If Native American cultural materials are encountered during the course of the project, please contact my office at (207) 817-7471. Thank you for consulting with the Penobscot Nation on this project.

A handwritten signature in black ink, appearing to read "Chris Sockalexis".

CHRIS SOCKALEXIS, THPO  
Penobscot Nation





PENOBSCOT NATION  
CULTURAL & HISTORIC PRESERVATION  
12 WABANAKI WAY, INDIAN ISLAND, ME 04468

CHRIS SOCKALEXIS – TRIBAL HISTORIC PRESERVATION OFFICER  
E-MAIL: [chris.sockalexis@penobscotnation.org](mailto:chris.sockalexis@penobscotnation.org)

NAME	Jay Clement
ADDRESS	US Army Corps of Engineers 675 Western Avenue, #3 Manchester, ME 04351
OWNER'S NAME	Federal Highway Administration & Maine DOT
TELEPHONE	(207) 623-8367
FAX	
EMAIL	Jay.L.Clement@USACE.army.mil
PROJECT NAME	South Portland-Scarborough 19426.00 & 19426.10 – Trail Construction
PROJECT SITE	South Portland - Scarborough, ME
DATE OF REQUEST	July 6, 2018
DATE REVIEWED	July 18, 2018

Thank you for the opportunity to comment on the above referenced project. This project appears to have no impact on a structure or site of historic, architectural or archaeological significance to the Penobscot Nation as defined by the National Historic Preservation Act of 1966, as amended.

If Native American cultural materials are encountered during the course of the project, please contact my office at (207) 817-7471. Thank you for consulting with the Penobscot Nation Tribal Historic Preservation Office with this project.

A handwritten signature in black ink, appearing to read "Chris Sockalexis".

Chris Sockalexis, THPO  
Penobscot Nation



PAUL R. LEPAGE  
GOVERNOR

STATE OF MAINE  
DEPARTMENT OF  
INLAND FISHERIES & WILDLIFE  
284 STATE STREET  
41 STATE HOUSE STATION  
AUGUSTA ME 04333-0041

CHANDLER E. WOODCOCK  
COMMISSIONER

October 22, 2018

Stacie Grove  
New Earth Ecological Consulting, LLC  
169 Watson Mill Road  
Saco, ME 04072

**RE: Information Request - Eastern Trail Scarborough to South Portland, Scarborough/South Portland**

Dear Stacie:

Per your request received September 25, 2018, we have reviewed current Maine Department of Inland Fisheries and Wildlife (MDIFW) information for known locations of Endangered, Threatened, and Special Concern species; designated Essential and Significant Wildlife Habitats; and fisheries habitat concerns within the vicinity of the *Eastern Trail Scarborough to South Portland Project* in Scarborough/South Portland.

Our Department has not mapped any Essential or Significant Wildlife Habitats that would be directly affected by your project.

***Endangered, Threatened, and Special Concern Species***

**New England cottontail**

Occurrences of New England cottontail, a State Endangered species, have been documented within the search area of the proposed project. New England cottontails require large areas of shrubs and densely growing young trees, and in the Northeast much of the area supporting the species has been fragmented and no longer provides habitat patches suitable in quality or size. MDIFW maps indicate there is an occupied New England cottontail polygon within 1/3 mile of the project area. While it is unlikely that the species is present on your site, we have not conducted recent surveys in the vicinity to confirm. Therefore, we recommend a winter snow tracking survey to rule it out. Please contact Region A wildlife biologist Cory Stearns (207-657-2345) to discuss further and to coordinate a survey.

**Bats**

Of the eight species of bats that occur in Maine, the three *Myotis* species are protected under Maine's Endangered Species Act (MESA) and are afforded special protection under 12 M.R.S §12801 - §12810. The three *Myotis* species include little brown bat (State Endangered), northern long-eared bat (State Endangered), and eastern small-footed bat (State Threatened). The five remaining bat species are listed as Special Concern: big brown bat, red bat, hoary bat, silver-haired bat, and tri-colored bat.

While a comprehensive statewide inventory for bats has not been completed, based on historical evidence it is likely that several of these species occur within the project area during migration and/or the breeding season. We recommend that you contact the U.S. Fish and Wildlife Service--Maine Fish and Wildlife Complex (Wende Mahaney, 207-902-1569) for further guidance, as the northern long-eared bat is also listed as a Threatened Species under the Federal Endangered Species Act. Otherwise, our Agency does not anticipate significant impacts to any of the bat species as a result of this project.

### ***Fisheries Habitat***

Construction Best Management Practices should be closely followed to avoid erosion, sedimentation, alteration of stream flow, and other impacts as eroding soils from construction activities can travel significant distances as well as transport other pollutants resulting in direct impacts to fish and fisheries habitat. In addition, we recommend that any necessary instream work occur between July 15 and October 1.

This consultation review has been conducted specifically for known MDIFW jurisdictional features and should not be interpreted as a comprehensive review for the presence of other regulated features that may occur in this area. Prior to the start of any future site disturbance we recommend additional consultation with the municipality, and other state resource agencies including the Maine Natural Areas Program and Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance.

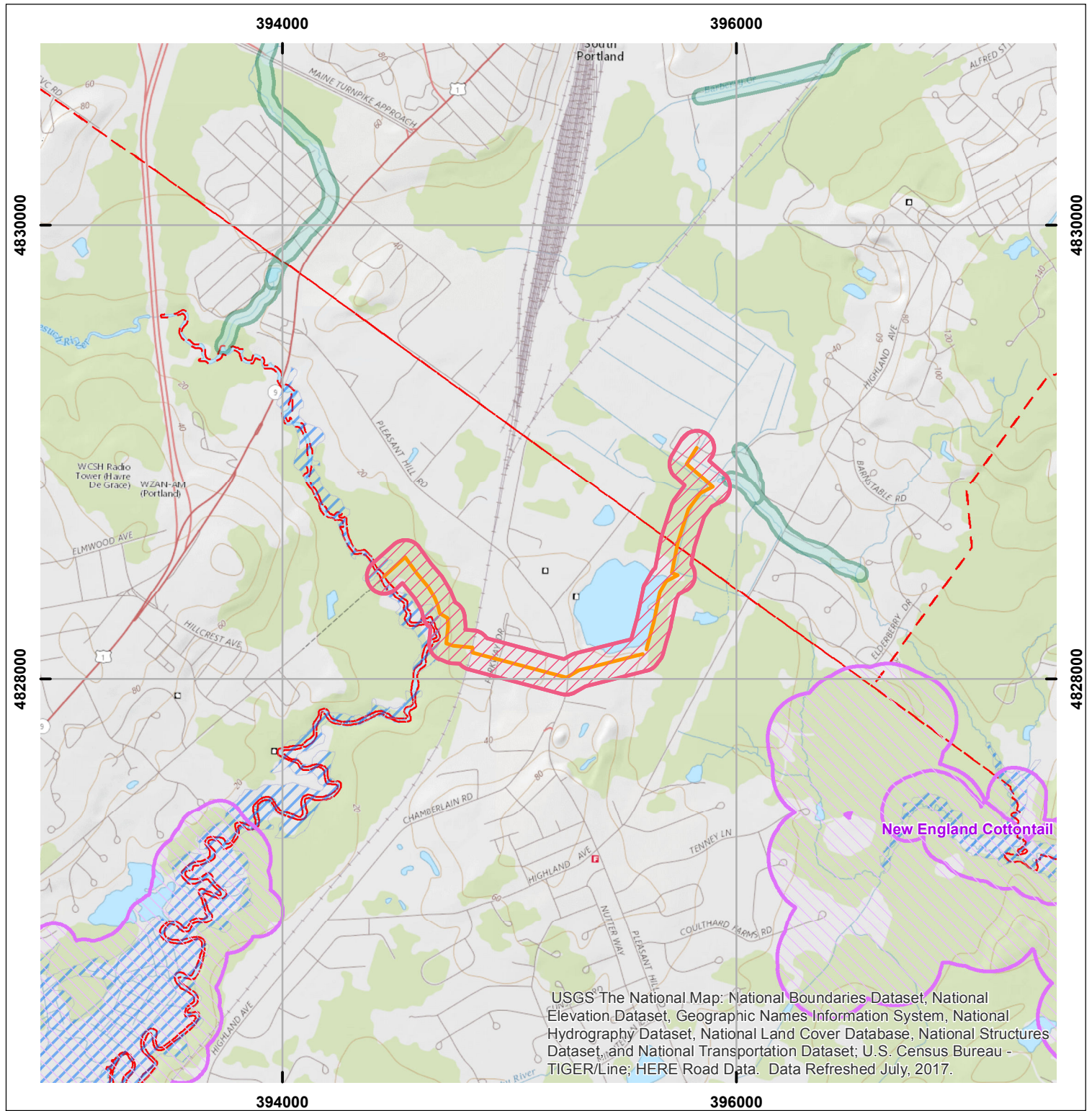
Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

Best regards,



John Perry  
Environmental Review Coordinator



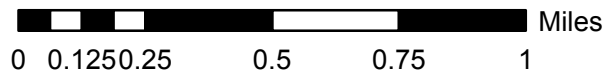


## Environmental Review of Fish and Wildlife Observations and Priority Habitats

Project Name: Eastern Trail Scarborough to South Portland (Version 2)



Maine Department of  
Inland Fisheries and Wildlife



Projection: UTM, NAD83, Zone 19N

Date: 9/28/2018

- ProjectLines
- ▨ ProjectSearchAreas
- ▨ Tidal Waterfowl/Wading Bird
- ▨ ETSc Environmental Review Polygons
- ▨ Special Concern-occupied habitats(100ft buffer)



## Stacie Grove

---

**From:** Perry, John <John.Perry@maine.gov>  
**Sent:** Monday, November 5, 2018 9:30 AM  
**To:** Stacie Grove  
**Subject:** RE: [EXTERNAL SENDER] Eastern Trail and NEEC

Hi Stacie,

Yes, he made it to the site. East of the railroad tracks, the habitat is suitable for NEC in summer when the herbaceous vegetation is providing cover, but is really not suitable in the winter. West of the railroad tracks the habitat is more suitable.

Overall, based on his findings we are not overly concerned about the direct impact of the project on New England cottontail. However, the powerline is important for dispersal so we recommend that the amount of habitat that is impacted be minimized to the extent possible.

Thanks,

John

**John Perry**  
**Environmental Review Coordinator**  
Maine Department of Inland Fisheries and Wildlife  
284 State Street, 41 SHS  
Augusta, Maine 04333-0041  
Tel (207) 287-5254; Cell (207) 446-5145  
Fax (207) 287-6395  
[www.mefishwildlife.com](http://www.mefishwildlife.com)



*Correspondence to and from this office is considered a public record and may be subject to a request under the Maine Freedom of Access Act. Information that you wish to keep confidential should not be included in email correspondence.*

---

**From:** Stacie Grove [mailto:[sgrove@newearthecological.com](mailto:sgrove@newearthecological.com)]  
**Sent:** Friday, November 02, 2018 1:08 PM  
**To:** Perry, John <John.Perry@maine.gov>  
**Subject:** [EXTERNAL SENDER] Eastern Trail and NEEC

Hello John,

Just curious if you've received any findings from Cory? We're preparing to submit the permit applications and will include an update if one is available.

I know you guys must be swamped, so no problem if not. Christine at DEP has indicated she will accept the application as is, and we can add information from you guys later as it comes in.

Best Regards,

Stacie Grove  
Principal Environmental Biologist  
C: (207) 329-4458





**PAUL R. LePAGE**  
GOVERNOR

**STATE OF MAINE**  
**DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY**

93 STATE HOUSE STATION  
AUGUSTA, MAINE 04333

**WALTER E. WHITCOMB**  
COMMISSIONER

October 3, 2018

Stacie Grove  
NewEarth Ecological Consulting  
169 Watson Mill Road  
Saco, ME 04072

Via email: [sgrove@newearthecological.com](mailto:sgrove@newearthecological.com)

Re: Rare and exemplary botanical features in proximity to: WINS 019426.00, 019426.10, Eastern Trail Connector, Scarborough and South Portland, Maine

Dear Ms. Grove:

I have searched the Natural Areas Program's Biological and Conservation Data System files in response to your request received September 24, 2018 for information on the presence of rare or unique botanical features documented from the vicinity of the project in Scarborough and South Portland, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

**MOLLY DOCHERTY, DIRECTOR**  
MAINE NATURAL AREAS PROGRAM



PHONE: (207) 287-8044  
FAX: (207) 287-8040  
[WWW.MAINE.GOV/DACF/MNAP](http://WWW.MAINE.GOV/DACF/MNAP)

The Natural Areas Program is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. The Natural Areas Program welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by the Natural Areas Program are to be published in any form, the Program should be informed at the outset and credited as the source.

The Natural Areas Program has instituted a fee structure of \$75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for \$150.00 for two hours of our services.

Thank you for using the Natural Areas Program in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

A handwritten signature in cursive script, appearing to read "Krist Puryear".

Kristen Puryear | Ecologist | Maine Natural Areas Program  
207-287-8043 | [kristen.puryear@maine.gov](mailto:kristen.puryear@maine.gov)

# Rare and Exemplary Botanical Features within 4 miles of Project: WINS 019426.00, 019426.10, Eastern Trail Connector, Scarborough and South Portland, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
<b>Allegheny Vine</b>						
	E	S1	G4	1860-10	9	Rocky summits and outcrops (non-forested, upland),Dry barrens (partly forested, upland)
<b>American Sea-blite</b>						
	T	S2	G5	1932-09-12	5	Tidal wetland (non-forested, wetland)
<b>Beach Plum</b>						
	E	S1	G4	1933-05-19	10	Rocky coastal (non-forested, upland)
	E	S1	G4	2008-05-28	19	Rocky coastal (non-forested, upland)
	E	S1	G4	1933-06-20	7	Rocky coastal (non-forested, upland)
<b>Beach wormwood</b>						
	SC	S1S2	G5T5	2014-06-24	10	<null>
	SC	S1S2	G5T5	2011-10-18	8	<null>
<b>Cattail Marsh</b>						
	<null>	S5	G5	2014-06-24	3	Open wetland, not coastal nor rivershore (non-forested, wetland),Coastal non-tidal wetland (non-forested, wetland)
<b>Comb-leaved Mermaid-weed</b>						
	E	S1	G5	1906-09-29	1	Open wetland, not coastal nor rivershore (non-forested, wetland)
<b>Creeping Spike-moss</b>						
	E	S2	G5	1924-08-20	3	Open wetland, not coastal nor rivershore (non-forested, wetland),Old field/roadside (non-forested, wetland or upland)
	E	S2	G5	1924-08-21	8	Open wetland, not coastal nor rivershore (non-forested, wetland),Old field/roadside (non-forested, wetland or upland)
<b>Dioecious Sedge</b>						
	SC	S3	G4G5	1936-07-14	7	Non-tidal rivershore (non-forested, seasonally wet),Open wetland, not coastal nor rivershore (non-forested, wetland)
<b>Dune Grassland</b>						



# Rare and Exemplary Botanical Features within 4 miles of Project: WINS 019426.00, 019426.10, Eastern Trail Connector, Scarborough and South Portland, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
<null>		S2	G4?	2014-06-24	8	Rocky coastal (non-forested, upland)
<null>		S2	G4?	2014-06-23	6	Rocky coastal (non-forested, upland)
<b>Horned Pondweed</b>						
SC		S2	G5	1972-06-13	3	Tidal wetland (non-forested, wetland)
<b>Marsh Bulrush</b>						
E		S1	G5	1923-09-21	1	Tidal wetland (non-forested, wetland)
<b>Mountain Honeysuckle</b>						
E		S2	G5	1905-06	5	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
<b>Oak - Northern Hardwoods Forest</b>						
<null>		S5	GNR	2012-06-14	19	Hardwood to mixed forest (forest, upland)
<b>Parker's Pipewort</b>						
SC		S3	G3	1924-08-20	8	Tidal wetland (non-forested, wetland)
<b>Pitch Pine Bog</b>						
<null>		S2	G3G5	2006-06-21	3	Forested wetland,Coastal non-tidal wetland (non-forested, wetland)
<null>		S2	G3G5	2012-07-31	16	Forested wetland,Coastal non-tidal wetland (non-forested, wetland)
<b>Pitch Pine Dune Woodland</b>						
<null>		S1	G2	2014-06-23	5	Dry barrens (partly forested, upland)
<null>		S1	G2	2014-06-24	6	Dry barrens (partly forested, upland)
<b>Salt-hay Saltmarsh</b>						
<null>		S3	G5	2009	20	Tidal wetland (non-forested, wetland)
<null>		S3	G5	2010-07-16	14	Tidal wetland (non-forested, wetland)
<b>Saltmarsh False-foxglove</b>						

# Rare and Exemplary Botanical Features within 4 miles of Project: WINS 019426.00, 019426.10, Eastern Trail Connector, Scarborough and South Portland, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Saltmarsh Sedge	SC	S3	G5	2000-08-09	27	Tidal wetland (non-forested, wetland)
	PE	SH	G4G5	1921-07-27	4	Tidal wetland (non-forested, wetland)
	PE	SH	G4G5	1913-06-11	2	Tidal wetland (non-forested, wetland)
Smooth Winterberry Holly	SC	S3	G5	2006-06-21	28	Forested wetland
	PE	SH	G5	1895-10-03	2	Open wetland, not coastal nor rivershore (non-forested, wetland)
Stiff Gentian	PE	SH	G5	1895-10-03	2	Open wetland, not coastal nor rivershore (non-forested, wetland)
	<null>	S3	GNR	2010-07-16	6	Tidal wetland (non-forested, wetland)
Tidal Marsh Estuary Ecosystem	<null>	S3	GNR	2010-07-16	6	Tidal wetland (non-forested, wetland)
	PE	SH	G4	1862-08	3	Open water (non-forested, wetland)
Water-plantain Spearwort	PE	SH	G4	1862-08	3	Open water (non-forested, wetland)
	E	S1	G5	1910-06-19	5	Non-tidal rivershore (non-forested, seasonally wet),Hardwood to mixed forest (forest, upland)
Wild Coffee	E	S1	G5	1910-06-19	5	Non-tidal rivershore (non-forested, seasonally wet),Hardwood to mixed forest (forest, upland)
	SC	S2	G5	1921-07-26	5	Forested wetland,Hardwood to mixed forest (forest, upland)
Wild Garlic	SC	S2	G5	1921-07-26	5	Forested wetland,Hardwood to mixed forest (forest, upland)
	SC	S3	G5	2006-05-10	19	Hardwood to mixed forest (forest, upland),Forested wetland
Wild Leek	SC	S3	G5	2006-05-10	19	Hardwood to mixed forest (forest, upland),Forested wetland
	SC	S3	G5	2006-05-10	19	Hardwood to mixed forest (forest, upland),Forested wetland

## STATE RARITY RANKS

- S1** Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
- S2** Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
- S3** Rare in Maine (20-100 occurrences).
- S4** Apparently secure in Maine.
- S5** Demonstrably secure in Maine.
- SU** Under consideration for assigning rarity status; more information needed on threats or distribution.
- SNR** Not yet ranked.
- SNA** Rank not applicable.
- S#?** Current occurrence data suggests assigned rank, but lack of survey effort along with amount of potential habitat create uncertainty (e.g. S3?).

**Note:** **State Rarity Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines State Rarity Ranks for animals.

## GLOBAL RARITY RANKS

- G1** Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extinction.
- G2** Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
- G3** Globally rare (20-100 occurrences).
- G4** Apparently secure globally.
- G5** Demonstrably secure globally.
- GNR** Not yet ranked.

**Note:** **Global Ranks** are determined by NatureServe.

## STATE LEGAL STATUS

**Note:** State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's **Endangered** and **Threatened** plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

- E** ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered.
- T** THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

## NON-LEGAL STATUS

- SC** SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.
- PE** Potentially Extirpated; Species has not been documented in Maine in past 20 years or loss of last known occurrence has been documented.



## ELEMENT OCCURRENCE RANKS - EO RANKS

Element Occurrence ranks are used to describe the quality of a rare plant population or natural community based on three factors:

- **Size**: Size of community or population relative to other known examples in Maine. Community or population's viability, capability to maintain itself.
- **Condition**: For communities, condition includes presence of representative species, maturity of species, and evidence of human-caused disturbance. For plants, factors include species vigor and evidence of human-caused disturbance.
- **Landscape context**: Land uses and/or condition of natural communities surrounding the observed area. Ability of the observed community or population to be protected from effects of adjacent land uses.

These three factors are combined into an overall ranking of the feature of **A**, **B**, **C**, or **D**, where **A** indicates an **excellent** example of the community or population and **D** indicates a **poor** example of the community or population. A rank of **E** indicates that the community or population is **extant** but there is not enough data to assign a quality rank. The Maine Natural Areas Program tracks all occurrences of rare (S1-S3) plants and natural communities as well as A and B ranked common (S4-S5) natural communities.

**Note:** **Element Occurrence Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines Element Occurrence ranks for animals.

Visit our website for more information on rare, threatened, and endangered species!  
<http://www.maine.gov/dacf/mnap>

## **ATTACHMENT 12 – FUNCTIONAL ASSESSMENT**

Based on a function and values assessment performed per the USACE's Highway Methodology, streams and wetlands likely to be impacted by the proposed Project provide relatively low-level functions and values. The resources provide some function as fish and wildlife habitat, but opportunities are fairly limited primarily due to the level of residential, commercial, and industrial development in surrounding areas; stagnant to low-flow conditions within water bodies; presence of invasive species in wetlands, waterbodies and adjacent uplands; trash; impacts from off-road vehicles; and blockages in waterbodies (i.e., culverts, berms). Wetland resources are likely able to capture some sediment/nutrients/pollutants, but not at notable levels because of the steep eroding banks, incised waterbody channels, and narrow floodplains which cause water to rapidly enter and pass quickly through the wetland areas. A detailed assessment and data forms are provided in Attachment 9: Wetland/Waterbody Delineation Report.

## ATTACHMENT 13 – COMPENSATION

The Maine In Lieu Fee Compensation Program (ILF) provides permit applicants with an option to traditional permittee-responsible compensation projects. To mitigate for unavoidable natural resource impacts resulting from this project, the Town of Scarborough will make a payment directly to the DEP ILF. Unavoidable impacts have been determined by avoiding and minimizing adverse impacts.

Based on the DEP ILF Fact Sheet, dated January 1, 2024 – December 31, 2025, the in lieu fee for the proposed project in Cumberland County was calculated as follows.

---

### WETLAND COMPENSATION FORMULA

(sf of direct wetland impact x  
(natural resource enhancement & restoration cost/sq. ft. + avg. assessed land valuation/sq. ft.)) x (resource multiplier)

A resource multiplier of 1 is applied due to significant levels of prior disturbance, low quality and limited function and values of WOSS associated with the Project.

Anticipated permanent PFO and SS wetland fill impacts total 21,200 sf; therefore,

In Lieu Fee = (21,100 sf x (\$5.05/sf + \$0.96/sf)) x 1 = **\$127,412.00**

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## **ATTACHMENT 14 – MDEP VISUAL EVALUATION AND FIELD SURVEY CHECKLIST**

As shown on the attached checklist, the proposed trail is visible from the following:

1. A public site or structure listed on the National Register of Historic Places.

The Project begins at the foundation from the former Pan-Am (now CSX) railroad crossing (see Attachment 4: Photographs), which is eligible for listing on the National register. Per correspondence with MNHP (Attachment 11), the Project will have no effect on the property.

2. A municipal park or public open space.

The project crosses through and ties into the existing Eastern Trail at the Wainwright Recreational Complex, a municipal park/recreational facility. The trail will cross through existing, maintained grassy areas of the facility and be designed to match in with existing portions of the trail. The connecting trail is consistent with the goals and objectives of the recreational facility and will allow the facility to maximize recreational potential by completing trail connection between two currently disjunct endpoints.

As shown in Attachment 4: Photographs, several areas of the proposed route are highly disturbed. Cleanup efforts, seeding, and maintenance of the trail will improve the overall scenic character of the area and allow increased public access to natural settings found along the route. The proposed trail is consistent with surrounding land uses and zoning and will have minimal negative visual impact to the surrounding area.

## MDEP VISUAL EVALUATION FIELD SURVEY CHECKLIST

(Natural Resources Protection Act, 38 M.R.S. §§ 480 A - Z)

Name of applicant: Town of Scarborough Phone: (207) 730-4031

Application Type: Individual/Tier 3 NRPA Permit Application

Activity Type: Construction of a connecting 1.6-mile portion of the multi-use Eastern Trail.

Activity Location: Town: Scarborough, South Portland

County: Cumberland GIS Coordinates, if known:

Date of Survey: 09/21/2023 Observer: Judy Gates, HNTB Phone: (207) 228-0933

	Distance Between the Proposed Visibility Activity and Resource (in Miles)		
	0-1/4	1/4-1	1+
1. Would the activity be visible from:			
A. A National Natural Landmark or other outstanding natural feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
B. A State or National Wildlife Refuge, Sanctuary, or Preserve or a State Game Refuge?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C. A state or federal trail?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D. A public site or structure listed on the National Register of Historic Places?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E. A National or State Park?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
F. 1) A municipal park or public open space?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) A publicly owned land visited, in part, for the use, observation, enjoyment and appreciation of natural or man-made visual qualities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3) A public resource, such as the Atlantic Ocean, a great pond or a navigable river?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. What is the closest estimated distance to a similar activity?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. What is the closest distance to a public facility intended for a similar use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Is the visibility of the activity seasonal? (i.e., screened by summer foliage, but visible during other seasons)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	

5. Are any of the resources checked in question 1 used by the public during the time of year during which the activity will be visible? ☐ Yes ☒ No

A listing of National Natural Landmarks and other outstanding natural features in the State of Maine can be found at: [www.nature.nps.gov/nnl/Registry/USA\\_map/states/Maine/maine.htm](http://www.nature.nps.gov/nnl/Registry/USA_map/states/Maine/maine.htm) . In addition, unique natural areas are listed in the Maine Atlas and Gazetteer published by DeLorme.



## **ATTACHMENT 15 – TITLE, RIGHT, AND INTEREST**

As discussed in the attached memo, development and construction of this Project follows the Maine Department of Transportation's Local Project Administration process whereby the right of way (ROW) necessary for the project is secured concurrently with review of environmental permit applications by appropriate permitting agencies. Because the project uses federal funds, negotiations with landowners for easements cannot occur until the NEPA process is completed and the US Department of Transportation issues the required environmental clearance.

Although rights (easements and license agreements) for construction of the trail are in the final process of being obtained, generalized discussions with the landowners have occurred to understand feasibility of the project moving forward across their property. Appraisals and negotiations for rights are ongoing, with the outstanding parcel being the trail crossing of the active CSX Railroad. CSX recently acquired Pan Am assets in the project location and cannot issue formal easements until all legal documentation is complete, likely not until sometime in 2024. However, as indicated in the attached email correspondence, CSX has offered to grant a quit claim deed for the project. Attached are several example correspondences indicating other discussions and general acceptance.



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**Date**  
October 26, 2018

**To:** File

---

**Project  
Correspondence**

---

**From**  
HNTB on behalf of the Town of Scarborough

---

**Subject**  
Eastern Trail Scarborough to South Portland  
Concurrent Right of Way and Environmental  
Permitting Processes

Background:

This proposed section of the Eastern Trail (Project) is a 1.6-mile, off-network, multi-use trail, connecting two existing sections of the Eastern Trail through Scarborough and South Portland. This section of the trail supports a broader initiative to construct a 55-mile, non-motorized transportation corridor between Kittery and South Portland. This Project and section of trail closes an important gap within this trail system.

The proposed trail alignment was selected from a host of alternatives during the preliminary design phase since it was found to result in the least impact to environmental resources and private land owners, and was also the most cost effective. The trail typically consists of a 10 to 12-foot wide paved or stone dust surface with 2-foot shoulders on each side that will be loamed and seeded.

Through a series of discussions with private and public landowners and iterative avoidance and minimization efforts, the trail will ultimately traverse a total of eight properties owned by the following:

1. ABCO Rental & Storage, Inc.
2. Central Maine Power Company
3. Boston & Maine Corporation (Pan Am Railroad)
4. Donald and Lisa Prout
5. Town of Scarborough
6. Portland Water District
7. H H & M Associates

8. City of South Portland

To meet the needs of the project, a series of license agreements, permanent easements, and temporary easements will be obtained from the above list of owners. Funding for design and construction of this project is comprised of a variety of private, Town, State and Federal funds.

Local Project Administration:

Development and construction of this Project follows the Maine Department of Transportation's Local Project Administration process. This process closely follows the Departments project development process in which right of way (ROW), necessary for the project, is secured concurrently with review of environmental permit applications by appropriate permitting agencies.

Since the project uses federal funds, negotiations with landowners for easements cannot occur until the NEPA process is completed and the US Department of Transportation has issued the required environmental clearance (e.g.: Categorical Exclusion or "CE"). Once this project development milestone is reached, an understanding of environmental constraints and the project site impacts are known, which allows both the environmental permits to be compiled and the right of way easement process to commence. Requiring proof of easements/rights within environmental permit applications requires a more linear and lengthier project development process to ensue and is not consistent with MaineDOT processes.

Landowner Discussions:

Although rights (easements and license agreements) for construction of the trail have not been obtained, generalized discussions with the landowners have occurred to understand feasibility of the project moving forward across their property. Attached to this memo are several example correspondences indicating such discussions and general acceptance.

Conclusion:

Construction of this project cannot occur without obtaining easements and/or license agreements from several private landowners. Appraisals and negotiations for rights are anticipated to occur this fall/winter. To support advancement of this project and construction advertisement in the third or fourth quarter of 2024, we request that the environmental permits either be issued without appropriate easements in place or conditionally issued pending obtainment of appropriate property rights.



Attachments

- Project Team/CMP Meeting Summary
- Email correspondence summarizing discussions with Prout's and HH&M Associates owner (Hale)
- Memo from Pan Am Railroad

Scarborough Eastern Trail

**Date of Meeting**

July 11, 2018

**HNTB Project #**

66807

**Location**

CMP Headquarters  
Augusta, ME

**Purpose of Meeting**

CMP Coordination for RR Crossing

**Time**

2:00 p.m.

**Participants**

☒ Patricia Larrivee (CMP)

☒ Bill Reichl (Town)

☒ Thomas Ward (CMP)

☒ Arthur Brown (CMP)

☒ Tim Cote (HNTB)

☒ Cory Helmick (HNTB)

☒ Rick Paraschak (MDOT)

**HNTB Corporation**

The HNTB Companies

Engineers Architects  
Planners

340 County Road, Suite 6-C

Westbrook, ME 04092

Telephone (207) 774-  
5155

Facsimile (207) 228-  
0909

[www.hntb.com](http://www.hntb.com)



**Meeting Summary**

A meeting was held at the CMP headquarters to discuss the Eastern Trail's alignment near the Pan Am Crossing within the CMP corridor. E-mail correspondence leading into this meeting, and a PDF of the proposed Alternative 2 layout discussed at this meeting, is attached for reference.

**Right of Way Discussion**

Right of Way questions remain regarding property rights of the McBrady's within the CMP corridor. At a previous meeting with CMP, potential concerns regarding a proposed McBrady access road and a possible septic tank within the CMP corridor arose. It is also unclear what rights the McBrady's possess within the CMP corridor at Parkway Drive. If the McBrady's own any rights within the area of the CMP

corridor where the trail is located, and cooperation with the McBrady's is required, it will be difficult to construct the trail within this corridor. These concerns are unresolved from the previous meeting.

The following actions are to occur to better understand these issues:

- The Town of Scarborough will look through files in the planning department to see if records exist that define what property rights, if any, the McBrady's have within the CMP corridor and confirm that the adjacent buildings are on public sewer system. They will also try to determine when the McBrady's development was approved for construction. This will clarify who existed first (CMP or the McBrady development) and, therefore, who has fee ownership of the property that Parkway Drive is built upon.
- CMP will look within their own records to determine if the McBrady's have any rights within their corridor.
- HNTB will coordinate with their surveyor, Dick Hamilton, to confirm any findings related to Right of Way within the CMP corridor. Dick Hamilton's boundary survey within the corridor has included visits to the registry of deeds and he may have additional information that can be shared.
- CMP will provide HNTB with a draft license agreement from a similar trail project in the Forks for review and consideration. CMP prefers to issue a license agreement rather than easements.

#### Constructability

Alternative 2 (attached hereto) was sent to CMP on June 28, 2018 for review and comment; additional cross sections depicting relative location of the power lines and trail location for Alternative 2 were sent on July 6. This Alternative includes skewing the Pan Am Crossing to allow approximately 10' between the face of the retaining wall and the McBrady property for the reasons outlined in the attached e-mail summary. CMP shared that the proposed configuration was generally acceptable as shown and that adequate separation existed between the proposed trail bridge and CMP's poles and conductors in the final condition. However, significant coordination will be required during construction and temporary outages of the transmission line will be required for key construction activities. Art stated that these outages would be required even if the bridge and trail were constructed immediately adjacent to CMP's right-of-way line. CMP requested that the slopes and areas in front of the wall be maintained and cut 1 to 2 times a year to prevent tall shrubs and trees from growing beneath or adjacent to the transmission line. Proper grounding of chain link fence and bridge superstructure are also required by CMP. The trail will also switch to cedar rail fence where the trail crosses below the overhead transmission lines and a gate fence will be installed to allow an access point from Parkway Drive for CMP to maintain their facilities. The access gate will be a CMP-standard, steel pole gate and will be approximately located between two transmission lines.

Constructability of the Pan Am crossing is a main concern for CMP. There needs to be at least a 10' offset to the transmission lines to allow a safe working distance. There was consensus that the power lines nearest to the bridge will need to be de-energized to allow for erection of the bridge and possibly to drive pile foundations for the bridge. CMP stated that there is a 120-day lead time for their power lines to be de-energized. Additionally, any changes to the proposed outage dates (e.g. sliding closure window, or lengthening the window) will restart the clock. There is an involved process to get shutdowns approved both internally within CMP, and within the region. Rainy days should be built into the schedule for the closure to be conservative. The project will be responsible for the costs of the shutdown which include labor associated with switching/de-energizing the lines. Payment for this work will be required up-front. Approval for shutdowns will not be sought until payment is in hand. Rick cautioned the team that FHWA's funding mechanisms are not set up for advance payment. Coordination will be required between MaineDOT and the Town. The outages will most likely occur at night, additional coordination with Pan Am will be required. The closure of the transmission line is also weather dependent. The outages of CMP's line are contingent on electrical demand and cannot be guaranteed. Most likely the outages will need to be timed to occur in the spring (April/May) or in the fall (September/October/November) when the need for air conditioning is diminished and the need for heating has not picked up. Sudden heat waves or cold weather may change demand and result in the cancellation of an outage window. Scheduling the outages to occur at night will likely be required and will reduce the sensitivity of work to power needs since demand is less during the evening. CMP oversight is required for crane work only, including setting the bridge and driving piles. Outages of the lines may only be required when setting the Pan Am bridge. The details of which activities require outages will be subject to additional coordination between HNTB and CMP.

- HNTB will provide an anticipated schedule to CMP showing critical work activities (e.g. pile driving and setting the bridge) that may require a line outage. This schedule will include the duration and approximate timing of each activity and will be used by CMP to develop an estimated cost for the line outage. Per discussion, the timeframes shown will be reasonably conservative.
- HNTB will coordinate with Pan Am to confirm that track outages for setting the Pan Am bridge can occur during the time periods discussed for the CMP outages.
- Future coordination meetings with CMP will be scheduled to discuss construction requirements and limitations as the design progresses.



This instrument prepared by  
or under the direction of:

Kim R. Bongiovanni  
Assistant General Counsel  
Law Department  
500 Water Street  
Jacksonville, Florida 32202

### DEED OF EASEMENT

THIS EASEMENT DEED, made as of \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between CSX TRANSPORTATION, INC., a Virginia corporation, whose mailing address is 500 Water Street, Jacksonville, Florida 32202, hereinafter called "Grantor," and THE TOWN OF SCARBOROUGH, MAINE a municipal corporation with an address of 259 US Route One, Scarborough, Maine (the "Town") , a and the EASTERN TRAIL MANAGEMENT DISTRICT, a non-profit Maine corporation whose mailing address is PO Box 250, Saco, Maine 04072 ("ETMD") (the Town and ETMD collectively hereinafter called "Grantee"); WITNESSETH:

(Wherever used herein the terms "Grantor" and "Grantee" may be construed in the singular or plural as the context may require or admit, and for purposes of exceptions, reservations and/or covenants, shall include the heirs, legal representatives and assigns of individuals or the successors and assigns of corporations.)

THAT, for and in consideration of payment of the sum of FOUR THOUSAND FIVE HUNDRED DOLLARS AND NO/100 DOLLARS (\$4,500.00), which is the full monetary consideration for this conveyance, and other valuable consideration, the receipt and sufficiency whereof is hereby acknowledged, Grantor does hereby GRANT and CONVEY unto Grantee, Grantee's successors and assigns, WITHOUT WARRANTY and only to the extent that Grantor's title permits, and FURTHER SUBJECT TO the terms, conditions, exceptions and reservations herein made, (a) non-exclusive AERIAL easement, on, over or across Grantor's property generally located between Station 122+74.4 and Station 123+40.5 (the "Aerial Easement Area") as depicted on Sheet #61 of the plan entitled "Eastern Trail Connector Scarborough, Cumberland County, Federal Aid Project No. STP-1942600 & 1942610," dated January 2019, (the "Trail Plan"), hereinafter designated "the Box Easement", which Box Easement is more particularly described in Exhibit A, attached hereto and incorporated herein, for the purpose of constructing, operating, and maintaining a section of the Eastern Trail / East Coast Greenway (the "Eastern Trail") that is contiguous with previously established sections of the Eastern Trail to provide off-road bicycle and pedestrian access for the public to enjoy nature and an alternative means of travel to motor vehicles;

EXCEPTING and RESERVING unto Grantor, its successors and assigns, the right to continue to occupy, possess and use the land upon which the Box Easement is imposed for any and all existing and future purposes that are not inconsistent with the rights granted herein.

TO HAVE AND TO HOLD the Box Easement and rights herein granted, solely for the purpose herein contained; SUBJECT, however, to any and all existing agreements, encroachments, easements, encroachments, ways and servitudes, any public or private utilities, cables, wires, pipes and other facilities located in, on, over, under or across the Box Easement, and all agreements, easements and rights granted or reserved therefor; ALSO SUBJECT TO the following terms, conditions, exceptions and reservations:

EXCEPTING unto Grantor, its successors and assigns, airspace rights if any, above the Premises, which airspace lies above a horizontal plane, the elevation which begins at twenty-three (23) feet above the top of existing rail which extends and is limited to the airspace required for the bridge appurtenances together with necessary lighting.

1. Said bridge, highway or roadway shall be constructed, maintained, repaired, renewed, reconstructed and/or removed in accordance with the provisions of that certain Agreement made between the Town and CSX Transportation, Inc. \_\_\_\_\_ dated, and the Plans for the said improvements, which Agreement and Plans are on file in the respective offices of said parties; and the provisions of said Agreement shall survive delivery of this deed.
2. Grantee, its successors and assigns, shall provide and maintain, at Grantee's sole expense, drainage facilities in accordance with plans and specifications for said Road or Highway project, which plans and specifications are on file in the respective offices of the parties hereto, to prevent runoff and other surface waters collected on the Box Easement from flowing over Grantor's tracks and adjacent properties.
3. Grantee agrees that it shall not assess Grantor any stormwater fee associated with any drainage facilities, ditches or drainage structures associated or necessary do to the roadway. Furthermore, Grantee shall be responsible for any stormwater fees assessed by any County or State agency managing such systems.
4. If Grantee, its successors and assigns, desire to or is required to revise, renew, add to, expand or alter the bridge pursuant to this Easement, it shall submit plans for the same to Grantor's Chief Engineer or his authorized representative, and procure written approval thereof (which approval shall not be unreasonably withheld or delayed) before any such alteration or expansion is performed.
5. Grantee, its successors and assigns, shall not at any time impair or interfere with the lateral or subjacent support of Grantor's properties, structures, tracks or improvements on or adjacent to the Box Easement, or otherwise damage the same in any way.

6. Excluded from this grant are any and all rights of way for access, ingress or egress, whether by way of necessity, implication or otherwise, across, under or over any adjoining properties of Grantor.

7. All road or highway structures shall be constructed, erected and maintained by Grantee, in, on or over the Box Easement to provide for a minimum vertical clearance of twenty-three (23) feet (from top of existing rail) and minimum lateral clearance of eighteen (18) feet (from center line of existing tracks).

8. If, at any time, the box Easement herein granted, or any part thereof, shall no longer be used or required by Grantee, its successors or assigns, for the purposes for which granted, the same shall terminate, and Grantee, its successors or assigns, shall execute such instrument as provided or as hereafter may be required by law to clear title to the aforesaid property.

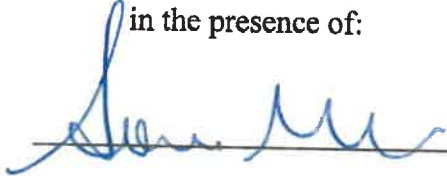
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IN WITNESS WHEREOF, CSX TRANSPORTATION, INC., pursuant to due corporate authority, has caused its name to be signed hereto by its officers hereunto duly authorized and its corporate seal, duly attested, to be hereunto affixed.

Signed, sealed and delivered  
in the presence of:

CSX TRANSPORTATION, INC., a Virginia Corporation:



By:

Print Name: Christina W. Bottomley

Print Title: Vice President of Business Development  
and Real Estate



Attest

Print Title: Secretary

Print Name:

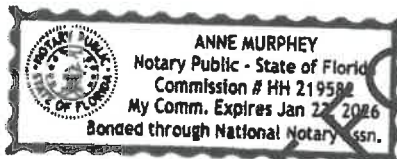
(SEAL)

COPY NOT FOR RECORDING PURPOSES

STATE OF FLORIDA       )  
                                      ) SS.  
COUNTY OF DUVAL       )

I, ANNE MURPHEY, a Notary Public of the State of Florida and the County of Duval, do certify that, on the date below, before me in said County came Christina W. Bottomley (X) to me known, and/or ( ) proven by satisfactory current evidence to be the person whose name is subscribed to the above instrument, who, being by me by means of (X) physical presence or ( ) online notarization first duly sworn, did make oath, acknowledge and say that: she is Vice President of Business Development and Real Estate of CSX Transportation, Inc., the corporation described in and which executed said instrument; she is fully informed of the contents of the instrument; she knows the seal of said corporation; the seal affixed to said instrument is such seal; it was so affixed by authority of the Board of Directors of said corporation; she signed her name thereto for said corporation pursuant to Board authority; and instrument is the free act and deed of said corporation; and the conveyance herein is not part of a transaction, sale, lease, exchange or other transfer or conveyance of all or substantially all of the property and/or assets of the Grantor.

IN WITNESS WHEREOF, I hereunto set my hand and official seal, this 17 day of JULY, 2024



Anne Murphey (SEAL)  
Notary Public

Print Name: ANNE MURPHEY

My

commission

expires

on:

1/23/2024

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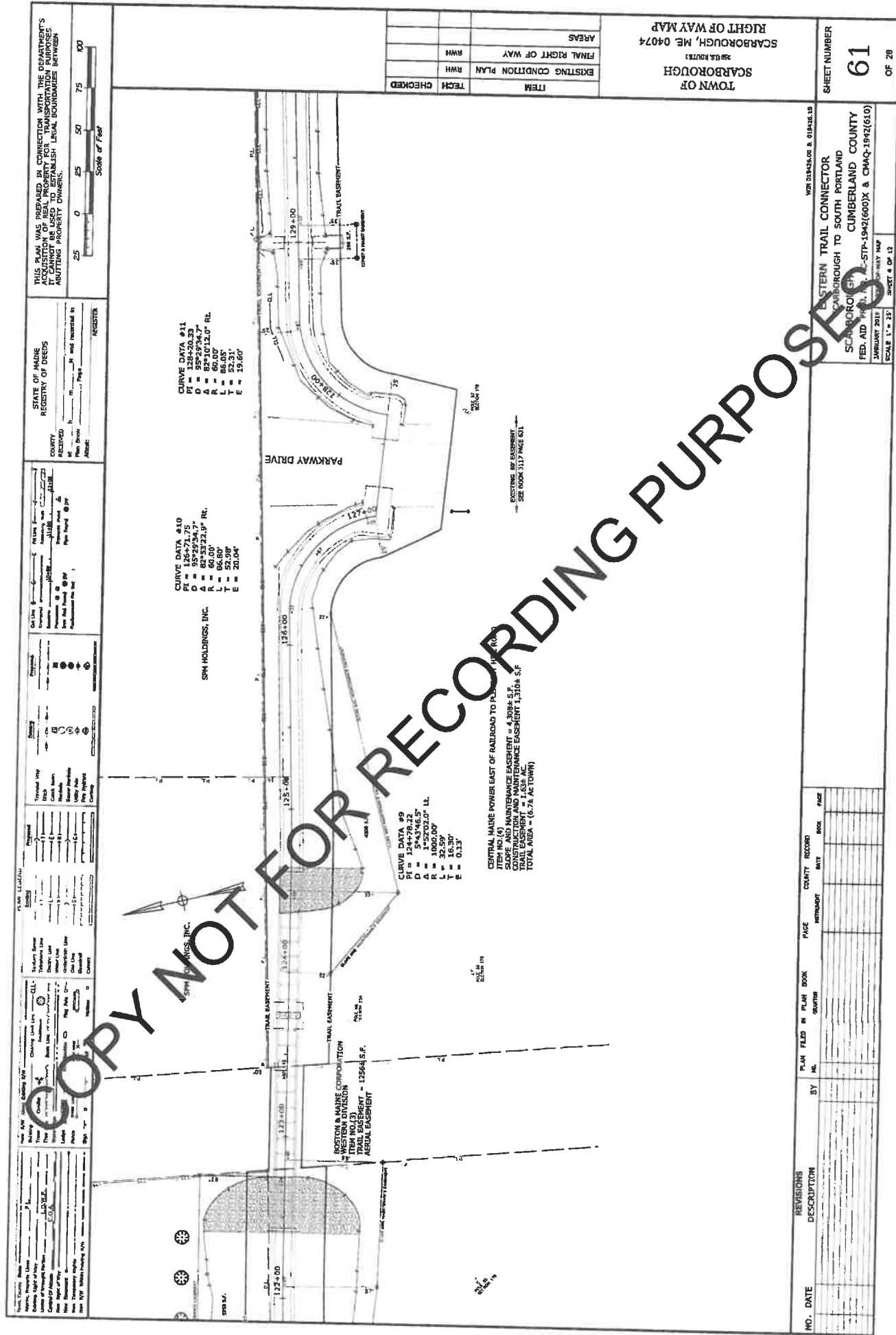
**EXHIBIT A**

Description of Easement at: Scarborough, Cumberland, ME  
To: Town of Scarborough  
CSXT Deed File No.: 2023-997036

LEGAL DESCRIPTION

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**From:** Wehbe, Sara <[Sara\\_Wehbe@csx.com](mailto:Sara_Wehbe@csx.com)>

**Sent:** Wednesday, July 17, 2024 8:43 AM

**To:** Judy Gates <[jugates@HNTB.com](mailto:jugates@HNTB.com)>

**Cc:** Tom Hall <[thall@scarboroughmaine.org](mailto:thall@scarboroughmaine.org)>; Peter J. Van Hemel <[pvanhemel@bernsteinshur.com](mailto:pvanhemel@bernsteinshur.com)>

**Subject:** EASEMENT - ME0033; Scarborough, Cumberland County, Maine; Eastern Trail OHB; New England Zone, Pan Am Railway Subdivision; FML-199.813; WIN 19426.00 & WIN 19426.10; CPP-062

External Email: Use caution when clicking on links, replying, or opening attachments.

Good Morning Tom,

I have attached a clean copy of the Eastern Trail deed with the added legal and plat, compensation, the redlines we agreed upon.

The only outstanding item is the signed construction agreement referenced in section 1 of the deed.

Please review and make sure all looks good before I route to execution.

Thanks

Sara

---

**From:** Judy Gates <[jugates@HNTB.com](mailto:jugates@HNTB.com)>

**Sent:** Monday, July 1, 2024 10:31 AM

**To:** Wehbe, Sara <[Sara\\_Wehbe@csx.com](mailto:Sara_Wehbe@csx.com)>

**Cc:** Tom Hall <[thall@scarboroughmaine.org](mailto:thall@scarboroughmaine.org)>; Peter J. Van Hemel <[pvanhemel@bernsteinshur.com](mailto:pvanhemel@bernsteinshur.com)>

**Subject:** [E] RE: EASEMENT - ME0033; Scarborough, Cumberland County, Maine; Eastern Trail OHB; New England Zone, Pan Am Railway Subdivision; FML-199.813; WIN 19426.00 & WIN 19426.10; CPP-062

**This Message Is From an External Sender**

This message came from outside your organization.

Hi Sara,

It's a beautiful summer day here in Maine.

We are developing the legal description; you should have by the end of the day tomorrow. On the use compensation, I'll defer to the town.

**Judy Gates**

Department Manager - Planning

Phone (207) 228-0933; Cell (207) 841-3791

Email [jugates@hntb.com](mailto:jugates@hntb.com)

**Celebrating 110 Years of Excellence**

---

**From:** Wehbe, Sara <[Sara\\_Wehbe@csx.com](mailto:Sara_Wehbe@csx.com)>

**Sent:** Monday, July 1, 2024 10:29 AM

**To:** Judy Gates <[jugates@HNTB.com](mailto:jugates@HNTB.com)>

**Subject:** RE: EASEMENT - ME0033; Scarborough, Cumberland County, Maine; Eastern Trail OHB; New England Zone, Pan Am Railway Subdivision; FML-199.813; WIN 19426.00 & WIN 19426.10; CPP-062

External Email: Use caution when clicking on links, replying, or opening attachments.

Hi Judy,

Hope things are going well !

There are two outstanding items I would like to discuss with you associated with ME0033.

- 1.) What is the status on the revised legal descriptions ?
- 2.) In regards to the offer of compensation for the use of the overhead pedestrian bridge, CSX would like to counteroffer in the amount of \$50,000. Let us know if this is an acceptable amount to the Town, then we can work on executing the deed and closing out this transaction.

Let me know if you have any questions or if you need anything else.

Thank you,  
Sara Wehbe

---

**From:** Wehbe, Sara

**Sent:** Tuesday, June 18, 2024 11:54 AM

## **Appendix A – Alternatives Analysis Report**



# Town of Scarborough, Maine Scarborough Eastern Trail Connector



**Alternatives Analysis in support of  
Section 404(b)(1) of the Clean Water Act &  
Maine Natural Resources Protection Act**

November 2015



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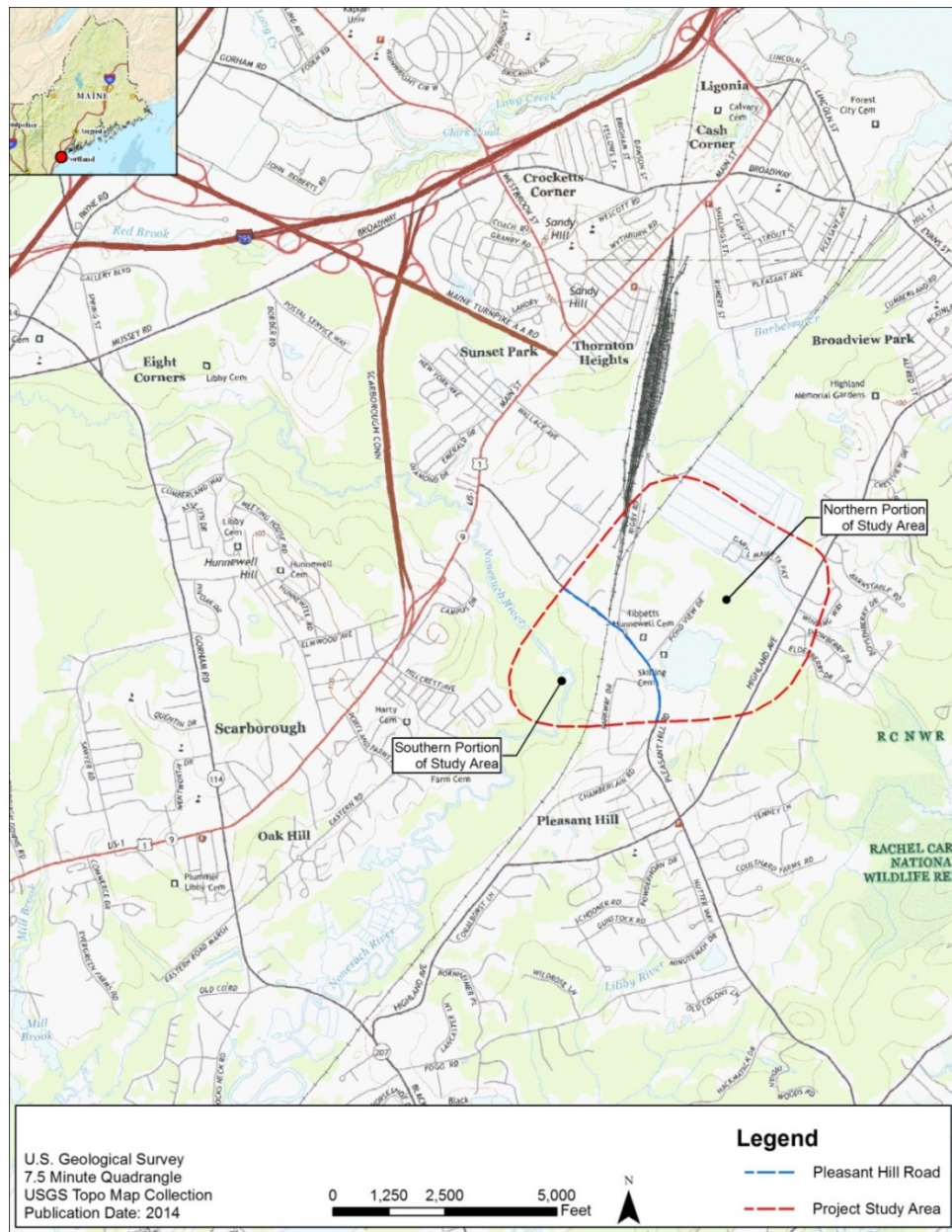
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# 1 Introduction

The Town of Scarborough, Maine proposes to construct an off-road multipurpose, transportation and recreation trail which will provide a connection on the Eastern Trail between the recently completed Eastern Trail segment on the west bank of the Nonesuch River in Scarborough and South Portland's southern terminus of the Eastern Trail/South Portland Greenbelt at the Wainwright Recreation Complex in South Portland. Figure 1-1 presents the project location and study area.



**Figure 1-1 Project Location**

As proposed, the off-road connector will affect wetlands and will require permits from the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act, 33 United States Code (USC) 1344, and the Maine Department of Environmental Protection (MaineDEP) in accordance with the

Natural Resources Protection Act (NRPA), 38 M.S.R.A. § 480-A to 480-BB. Hydric soils are concentrated along the floodplain of the Nonesuch River, tidally-influenced at this location, and in the vicinity of the Wainwright Recreation Complex, proximate to unnamed tributaries to Spurwink Creek (classified as both a perennial stream and intermittent stream, depending upon location). Portions of the freshwater wetlands in the project study are classified as Wetlands of Special Significance (WSS) under the NRPA, which include open water, freshwater wetlands which provide significant wildlife habitat, wetlands subject to flooding, and streams.

Pursuant to Section 404(b)(1) of the Clean Water Act, and Chapter 310 of the NRPA, an alternatives analysis is required to determine the practicable alternative with the least adverse impact to wetlands, provided that the alternative does not result in other significant adverse environmental impacts and meets the overall project purpose. The “practicable” alternative is defined as the alternative that is “available and feasible considering cost, existing technology and logistics based on the overall purpose of the project.”<sup>1</sup> This Alternatives Analysis has been prepared to meet the requirements of Section 404(b)(1) of the Clean Water Act and Chapter 310 of the NRPA.

## **1.1 Project Background**

The proposed project is an important link in the Eastern Trail and the East Coast Greenway project. Figure 1-2 presents a map of the Eastern Trail in Southern Maine. As shown in Figure 1-2, construction of the Scarborough Eastern Trail Connector will complete a missing gap in the off-road Eastern Trail between Scarborough and South Portland. It will provide a continuous trail system between Thornton Academy in Saco and Bug Light Park in South Portland, and a continuous 12-mile long off-road segment from Pine Point Road in Scarborough to Bug Light Park.

### **1.1.1 Eastern Trail**

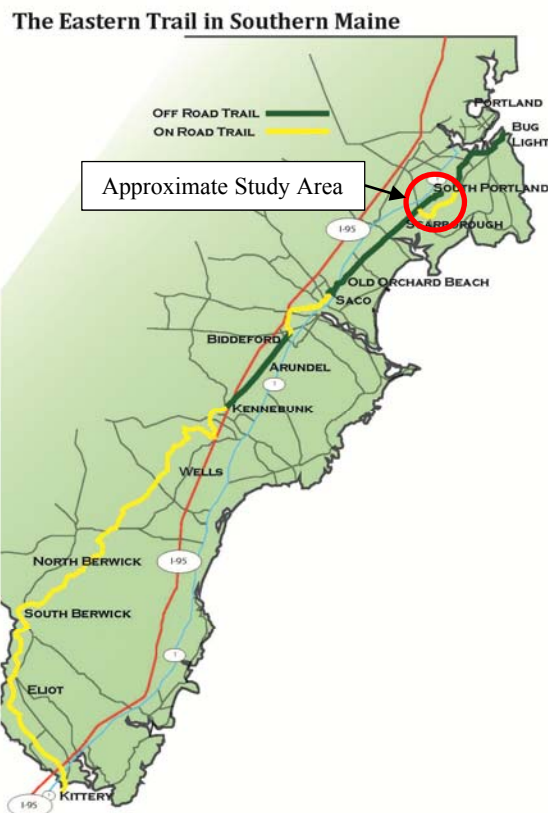
The Eastern Trail is a four-season 65+-mile non-motorized, multi-use, transportation and recreation corridor that is being created between Kittery and South Portland, Maine. It starts at the Maine state line on the Memorial Bridge over the Piscataqua River in Kittery and ends at Bug Light Park in South Portland. The Eastern Trail is considered a trail of statewide significance and is the southern Maine “gateway” segment of the East Coast Greenway project, a developing off-road bicycle trail system between Calais, Maine and Key West, Florida.

The idea of developing a bicycle trail in Maine dates to the early 1970s, when the Maine Bureau of Parks and Recreation published a study on the potential use of the Boston & Maine’s (B&M’s) Eastern Line’s abandoned railroad right-of-way (ROW) as a trail from South Berwick to Scarborough. As early as the 1990s, both the Maine Department of Transportation (MaineDOT) and the Maine Office of the National Park Service Rivers, Trails, and Conservation Assistance office (NPS-RTCA) endorsed the development of hiking trails on the abandoned rail corridor.

Two non-profit groups are fundamental to the development of the Eastern Trail: the Eastern Trail Alliance (ETA) and the Eastern Trail Management District (ETMD). Formed in 1998, the ETA is a coalition of trail groups, municipalities, government and other agencies, non-profit groups, and individuals that advocate for the development of the trail. The Eastern Trail is managed and maintained by the ETMD. Created in 2001 as a non-profit corporation, the ETMD is comprised of representatives from each of the twelve towns that the trail traverses.

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<sup>1</sup> 40 CFR 230.4; NRPA, Chapter 310, Wetlands and Waterbodies Protection.



**Figure 1-2 Eastern Trail in Southern Maine**

### 1.1.2 Project Need

Currently, the gap between the end of the existing off-road Eastern Trail at the Nonesuch River and the existing off-road Eastern Trail in South Portland represents a missing link in the Eastern Trail network. Providing a connection between the west bank of the Nonesuch River in Scarborough and South Portland's existing Eastern Trail/South Portland Greenbelt at the Wainwright Recreation Complex will fulfill the vision of the Town and MaineDOT to meet the need for a continuous, non-motorized, four-season off-road trail system between the communities of Scarborough and South Portland. Additionally, the project will further the goal of the Eastern Trail Alliance to provide a continuous off-road trail system between Portsmouth, New Hampshire and South Portland, Maine, as well as the long term goal of the East Coast Greenway project to establish a safe, traffic free continuous pathway along the eastern seaboard.

The ETA and ETMD have established purpose and need statements for the development of the Eastern Trail.<sup>2</sup> The purpose of the Eastern Trail is to:

- Establish a four-season, non-motorized, multipurpose, transportation and recreation trail between Portsmouth, New Hampshire and South Portland, Maine, serving as the southern Maine portion of the East Coast Greenway; and

<sup>2</sup> <http://www.easterntail.org/documents/purpneed.pdf>

- Promote trail-associated economic development in York and Cumberland Counties by providing a trail directly serving the recreational, commercial, and social activities of residents and visitors to the southern Maine region.

Per the Eastern Trail Alliance<sup>3</sup>, the needs of the Eastern Trail include the following:

- Joining the network of multi-use trails in the United States and Canada and providing the route for the East Coast Greenway in southern Maine.
- Incorporating the trail into MaineDOT's vision of a continuous multi-modal route from Boston to Portland, Portland to the New Hampshire White Mountains, and north to trails and related routes in Brunswick and in the mid-coast and Downeast regions;
- Providing a multi-use trail connection among areas of historical and natural significance, including existing local trail systems, the beach areas and inland plains and municipalities both on and near the trail;
- Utilizing the former railroad and current utility corridor rights-of-way and other public lands and easements in such a way as to minimize the cost of the trail;
- Providing, where possible, an off-road transportation and recreation trail for access to areas of scenic beauty, as well as a quiet and safe transportation alternative for all ages and abilities;
- Forming connections between towns as a thread to promote regional cooperation in tourism development plans; and
- Providing direct connections and transportation loops to towns and special attractions using both on-road and off-road alternatives.

In 2001, MaineDOT and the Eastern Trail Alliance produced the *Eastern Trail Engineering Feasibility Study*, which used field observations and secondary source information to assess the potential feasibility of trail development, using both off-road trails and on-road route alternatives.<sup>4</sup> The corridor was divided into 22 segments for planning purposes, with each segment wholly within a single municipality and of a length that could be implemented at a manageable cost. The former Eastern Railroad corridor, the first railroad line established in Maine in the 1800s, was selected to form the spine of the trail network from South Berwick to South Portland. Where the corridor disappeared or was unavailable, an on-road route was to be used to fill the gaps. The first 12 miles of the trail, from Route 1 in Kittery to the Jewett trailhead<sup>5</sup> in South Berwick, were designed as permanent on-road segments. For much of the trail, however, the goal is to temporarily use on-road trail segments until the off-road trail sections are built to replace them.<sup>6</sup>

Of the twelve communities in southern Maine connected by the Eastern Trail,<sup>7</sup> seven municipalities include off-road sections. As of 2014, 22 miles of the Eastern Trail are located off-road, completing more than 30 percent of the Eastern Trail.<sup>8</sup> Eighty-five percent of the Eastern Trail between Arundel and South Portland is located on off-road, non-paved sections. MaineDOT, together with the Eastern Trail Alliance,

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<sup>3</sup> <http://www.easterntail.org/documents/purpneed.pdf>

<sup>4</sup> MEDOT and Eastern Trail Alliance. *Eastern Trail Engineering Feasibility Study, Final Report*. Prepared by Wilbur Smith Associates and Terrence J. DeWan & Associates. 2001.

<sup>5</sup> Trailhead is the term used for the start of the off-road trail.

<sup>6</sup> MEDOT and Eastern Trail Alliance. *Eastern Trail Engineering Feasibility Study, Final Report*. Prepared by Wilbur Smith Associates and Terrence J. DeWan & Associates. 2001, page 2.

<sup>7</sup> The twelve communities connected by the Eastern Trail include Kittery, Eliot, South Berwick, North Berwick, Wells, Kennebunk, Arundel, Biddeford, Saco, Old Orchard Beach, Scarborough, and South Portland.

<sup>8</sup> Eastern Trail Alliance. *The Economic Benefits of the Eastern Trail in Southern Maine*. Based on a 2014 Survey.



has constructed sections of the trail in South Portland, Scarborough, Old Orchard Beach, Saco, Biddeford, Arundel and Kennebunk.

### 1.1.3 East Coast Greenway Project

While the Eastern Trail has independent utility as a system of community trails between Kittery and South Portland, it is also part of the East Coast Greenway (ECG), a long-distance, urban, shared-use trail system linking all the major cities of the eastern seaboard and serving non-motorized users of all abilities and ages. First conceived in 1991, the ECG and its organization, the East Coast Greenway Alliance (ECGA), have identified the 25 major cities that are essential designations along the 3,000-mile long spine route. Figure 1-3 presents a schematic plan of the ECG.

The overall goal of the ECGA is “to establish a safe *traffic free* pathway for muscle-powered users of all abilities as a connection between our eastern seaboard cities.”<sup>9</sup> The short-term goal of the ECGA is to make a continuous route from Calais, Maine to Key West, Florida available to the public. In the short term, the route will include on-road sections, some of which are busy with traffic. The on-road route is considered to be an interim route.



**Figure 1-3 The East Coast Greenway**

The long-term goal of the ECGA is to transition the on-road route to a Permanent Trail, which will maximize the amount of off-road, traffic-free sections. To accomplish this long-term goal, the ECGA developed “East Coast Greenway Route Selection Guidelines.” The ECGA provides the following permanent route criteria for the East Coast Greenway:<sup>10</sup>

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<sup>9</sup> [http://www.greenway.org/pdf/route\\_selection\\_guide.pdf](http://www.greenway.org/pdf/route_selection_guide.pdf)

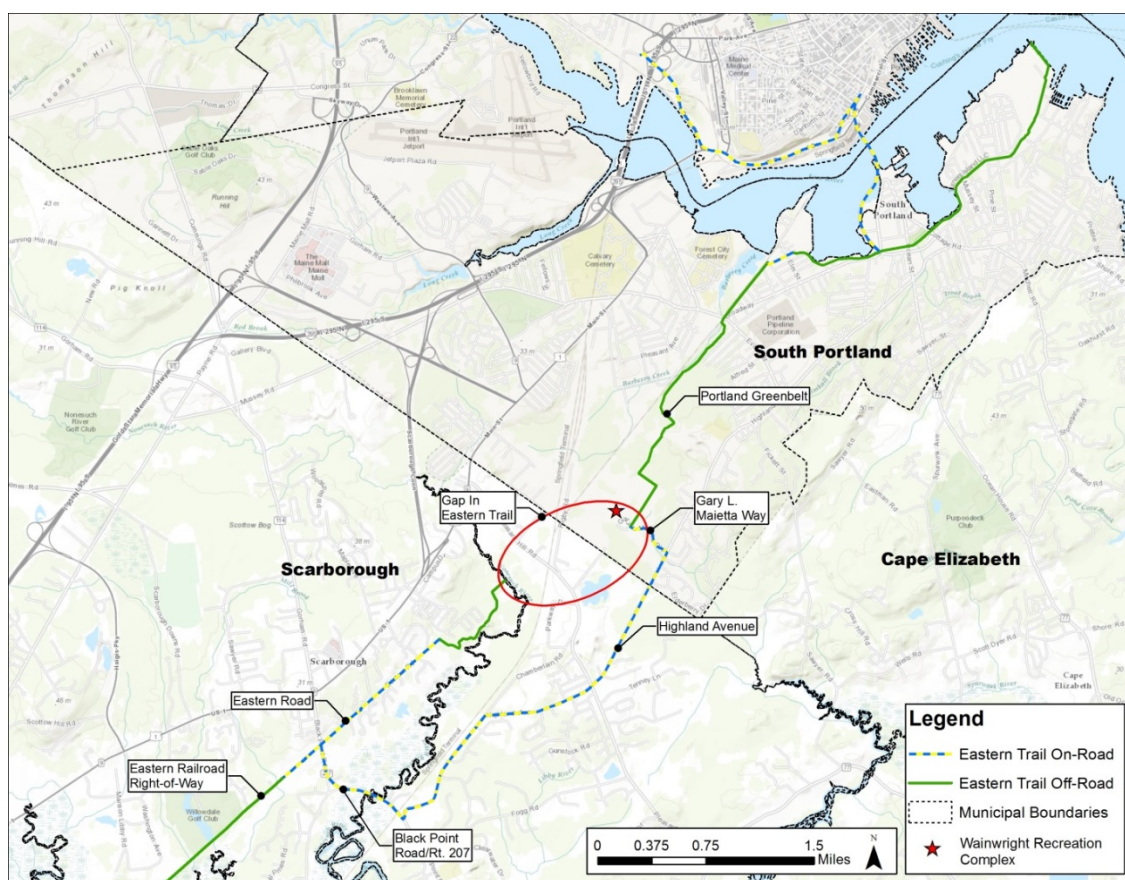
<sup>10</sup> [http://www.greenway.org/pdf/route\\_selection\\_guide.pdf](http://www.greenway.org/pdf/route_selection_guide.pdf)

- Provide off-road and traffic-free route;
- Provide firm surface, easily navigated by a touring bicycle or wheelchair;
- Provide publicly accessible route;
- Create a trail tread width of 12 feet;
- Avoid steep grades and steps that prohibit wheelchair access and make bicycle access difficult;
- Avoid areas that are unpleasant or uninteresting, in favor of a route that is pleasant, varied, and scenic.

## 1.2 Existing Conditions

### 1.2.1 Existing Eastern Trail between Scarborough and South Portland

Figure 1-4 presents the current Eastern Trail route between Scarborough and South Portland. As shown in Figure 1-4, there is a gap in the off-road trail between the two municipalities.



**Figure 1-4 Eastern Trail between Scarborough and South Portland**

Currently, Eastern Trail/East Coast Greenway users traveling on the existing off-road Eastern Trail (Eastern Railroad corridor) in Scarborough must leave the railroad corridor at Black Point Road (Maine Route 207), and travel approximately four miles via on-road segments on Highland Avenue and Gary L. Maietta Way, before reaching the South Portland Greenbelt, the existing off-road Eastern Trail, which terminates at the Wainwright Recreation Complex.

Highland Avenue and Gary L. Maietta Way, the on-road Eastern Trail segments, are shared roadways: the Eastern Trail occupies the paved roadway shoulders. The width of the paved shoulders varies along the approximate 4-mile route. Along Highland Avenue, the shoulder width varies from 1-foot on both sides of the roadway just east of Black Point Road; to a 6-foot shoulder width on both sides of the roadway at Weathervane Way; to a 6-foot shoulder width on the west side and an 8-foot shoulder width on the east side of the roadway at Crossmeadow Road. The shoulder width along Gary L. Maietta Way is generally 5-feet wide on both sides of the roadway. No roadways have bicycle pavement markings.

Highland Avenue consists of a 24-foot wide roadway, designated as a collector roadway.<sup>11</sup> Along the extent of the on-road Eastern Trail, the roadway has a posted 40 miles per hour (MPH) speed limit and 45 MPH speed limit. Highland Avenue carries approximately 6,220 vehicles per day. Within the City of South Portland, Highland Avenue is a designated truck route.<sup>12</sup> A 5-foot sidewalk exists on the eastern side of Highland Avenue in areas where the roadway traverses residential neighborhoods in Scarborough and South Portland. Gary L. Maietta Way consists of a 24-foot wide roadway, with 2-foot paved shoulders on both sides. A 10-foot wide sidewalk is located on one side of the roadway. The roadway has a posted 25 mph speed limit. Traffic data counts are not available, but traffic volumes are estimated to be less than 1,000 vehicles per day.

In 2006, a 4,200-linear foot off-road Eastern Trail extension in Scarborough was completed. The off-road segment is located on an easement granted by the Desfosses family (Hillcrest Retirement Community) to the Eastern Trail Alliance. The additional 8- to 12-foot-wide trail extends from the end of Eastern Road (Eastern Trail on-road portion) to the west bank of the Nonesuch River. From this terminus at the Nonesuch River, the Eastern Trail does not provide either an on-road or off-road connection to the South Portland Greenbelt.

## **1.2.2 Project Study Area**

As shown in Figure 1-1, the project study area consists of the land area and roadways between the existing off-road Eastern Trail segments in the Town of Scarborough and the Wainwright Recreation Complex in the City of South Portland.

For purposes of this Alternatives Analysis (and as shown in Figure 1-1), the project study area is divided into two sections, with Pleasant Hill Road as the dividing line between sections. The southern portion of the study area extends from the western abutment of the Nonesuch River northeast to, and including, Pleasant Hill Road in the Town of Scarborough. The northern portion of the study area extends from Pleasant Hill Road in Scarborough northeast to the Wainwright Recreation Center in South Portland.

### **1.2.2.1 Southern Portion of the Study Area**

The southern portion of the study is located wholly within the Town of Scarborough. Much of the land area is located within the Pleasant Hill Industrial District. Recreational facilities are an allowable use in the Industrial District. The Resource Protection District, which provides a 250-foot buffer surrounding the Nonesuch River, is located in the most southern and western portions of the study area. The Resource

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<sup>11</sup> Per the Town of Scarborough Master Plan, there are three different road designations based upon function and character: 1) arterial roadways, carrying high speed, long distance traffic; 2) collector roadways, collecting and distributing traffic to and from arterials and serving places of lower population densities; and 3) local roads, serving primarily adjacent land areas.

<sup>12</sup> City of South Portland. Comprehensive Plan 2012 Update. Adopted October 15, 2012.

Protection District includes significant natural resources, such as coastal and high value wetlands and rivers and the upland adjacent to these resources. Per the Town of Scarborough Comprehensive Plan, uses within the Resource Protection District are limited to low intensity, low impact uses that are compatible with the protection of the resource's natural values. These uses include limited natural resource uses and low intensity recreational uses.<sup>13</sup>

Pleasant Hill Road is a key roadway in the southern portion of the study area. Designated as a major/urban collector roadway, Pleasant Hill Road is 34 feet wide with paved shoulders varying between 2 and 5 feet in width on both sides. The average annual daily traffic (AADT) was approximately 11,000 vehicles in 2013. A portion of the roadway alignment within the study area is curved and includes a bridge with associated approaches over an active rail line. Several intersecting roadways and numerous industrial and commercial driveways are present. An 8.5-foot wide sidewalk exists along a portion of the north side of Pleasant Hill Road, extending between Pond View Drive and the CMP Transmission Corridor (approximately 1,000 linear feet). The majority of the sidewalk is separated from the road by a curb and esplanade.

MaineDOT motor vehicle crash data for Pleasant Hill Road was evaluated for the section of roadway located between Gibson Road and Chamberlain Road. Fourteen crashes were recorded during the three year period between 2012 and 2014.<sup>14</sup> A review of the accident reports determined that one accident involved a motor vehicle hitting a bicyclist from behind, resulting in personal injury to the bicyclist.

The Town of Scarborough's Town Wide Transportation Study<sup>15</sup>, completed in March 2005, identified Pine Point Road (Route 9) as the only road in Scarborough that is striped and signed as a bicycle lane. The Study assessed Scarborough's remaining major arterial and collector roads to determine their capacity for expanding the on-road bicycle network in Scarborough. MaineDOT's minimum standard for "on-road" bicycle routes are 4-foot paved shoulders on road sections without curb and 5-foot paved shoulders on road sections where curbing is present. The Study reported that only a limited number of roadways segments in Scarborough meet the MaineDOT bicycle route criteria. These roadways include a very short section of Route 114; somewhat lengthy sections of Payne Road, Route 1 and Black Point Road; and the entire length of Haigis Parkway. Currently, a short section of Pleasant Hill Road between Pond View Drive and the CMP transmission corridor meets these criteria. Upgrading the remaining portions of Pleasant Hill Road to meet MaineDOT's minimum standards would require roadway/shoulder widening, the installation of closed drainage systems (curbed roadway sections with catch basins, pipes and underdrain to capture and direct stormwater runoff) and utility relocations.

#### **1.2.2.2 Northern Portion of the Study Area**

The northern portion of the study area is located in the Town of Scarborough and the City of South Portland. Within the Town of Scarborough, the majority of the land area is located within the Pleasant Hill Industrial District. With the exception of a low density residential district located along Pond View Drive, the Industrial District extends from Rigby Rail Yard, a large railroad terminal and switching yard, to a 33-acre pond (commonly referred to as Prout's Pond) and the CMP substation. Prout's Pond is not regulated by MaineDEP as a natural lake or pond; it was identified as a borrow pit on 1945 maps.<sup>16</sup> As

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<sup>13</sup> Town of Scarborough. 2006 Update of the Comprehensive Plan, July 19, 2006.

<sup>14</sup> MaineDOT. Traffic Engineering, Crash Records Section. Crash Summary Report, Pleasant Hill Road from Gibson Road to Chamberlain Road in Scarborough, 2012-2014.

<sup>15</sup> <http://docs.google.com/viewer?a=v&pid=sites&srcid=c2NhcmJvcn9lZ2htYWluZS5vcmd8dG93bnxneDo0ODVhNzU1M2Y2ZDIzNGMz>

<sup>16</sup> NewEarth Ecological Consulting, LLC. Wetland Delineation and Waterbody Identification Report, Eastern Trail Connector Project, Scarborough and South Portland, Maine. Final, November 26, 2013, page 17.



previously cited, recreational facilities are an allowable use in the Industrial District. The Scarborough Comprehensive Plan notes that in low density residential districts, “provisions for pedestrian and bicycle facilities should be provided both within the neighborhood and to link the neighborhood to existing and planned trails.”

In South Portland, the land area is located within two designated high growth areas for suburban residential development and industrial development on the City of Portland’s Future Land Use Plan.<sup>17</sup> The Highland Avenue area experienced extensive residential growth from 2000 to 2010, including condominium developments along Gary L. Maietta Way and Old Bog Road (in South Portland). Located at the western-most boundary of the study area, and the destination point of the Scarborough Eastern Connector, is the Portland Greenbelt, a 5.7-mile long paved, off-road trail which extends to Bug Light Park, and the Wainwright Recreation Complex, 140-acres sports complex with multiple maintained athletic fields.

Key roadways in the northern portion of the study area include the following.

- **Rigby Road.** Rigby Road is a local road which services an area of mixed commercial and industrial development and leads to Rigby Rail Yard. The approximate 24-foot wide roadway is not striped and does not have shoulders or sidewalks. Numerous tractor trailers are frequently parked on both sides of the travelway along sections of this roadway. The Rigby Road ROW is approximately 40 feet wide.
- **Pond View Drive.** Pond View Drive is a local road which services approximately 20 housing units abutting it to the east and west. Pond View Drive is located in a Low Density Residential District.<sup>18</sup> The approximate 18-foot wide roadway is not striped, and does not have shoulders or sidewalks. The paved roadway is approximately 1,700 linear feet in length, and transitions into Old Bog Road, a “paper street” that was never built. The Pond View Drive ROW is approximately 66-feet wide; however, on both sides of the roadway, the ROW is grassed and appears as an extension of existing lawns. In three instances, existing structures directly abut or extend into the ROW. Problems reported by residents include car parking and litter dumping along the end of the street, and an increased amount and speed of traffic along the street.<sup>19</sup>
- **Old Bog Road.** Old Bog Road was a planned roadway that was never built in the Town of Scarborough. This paper street was to extend north from Pond View Drive into South Portland toward the Wainwright Recreation Complex. No state or Town ROW exists for this paper street, which currently extends approximately 1,300 feet across private property. A substantial portion of this paper street is located immediately adjacent to an existing stream.

## **1.3 Regulatory Background**

### **1.3.1 Section 404 of the Clean Water Act**

Section 404 of the Clean Water Act authorizes the USACE to issue permits for the discharge of dredged or fill materials into waters of the United States (waters of the U.S.), including wetlands (33 United States Code [USC] 1344). Waters of the U.S. are defined in 33 Code of Federal Regulations (CFR) 328 as coastal and inland waters, lakes, rivers, and streams, including adjacent wetlands and tributaries.

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<sup>17</sup> City of South Portland, Comprehensive Plan 2012 Update, page 6-53.

<sup>18</sup> Town of Scarborough. 2006 Update of the Comprehensive Plan.

<sup>19</sup> ETMD. *Eastern Trail: Scarborough to South Portland Connector. Final Report.* Prepared by Wilbur Smith Associates, Portland, Maine. September 2006.

The U.S. Environmental Protection Agency (USEPA) Section 404(b)(1) Guidelines (Guidelines) (40 CFR 230 *et seq.*) are the substantive environmental criteria used by the USACE to evaluate permit applications. Under these guidelines, an analysis of practicable alternatives is the primary tool the USACE uses to determine whether it can authorize a proposed discharge.

The Guidelines prohibit discharges of dredged or fill material into waters of the U.S. if a practicable alternative to the proposed discharge exists that would have less adverse impacts on the aquatic ecosystem, including wetlands, as long as the alternative does not have other significant adverse environmental impacts (40 CFR 230[a]). An alternative is considered practicable if it is *available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purpose* (40 CFR 230[a][2]).

The Guidelines present a sequential approach to project planning that considers mitigation measures only after the project proponent shows that no practicable alternatives are available to achieve the overall project purposes with less environmental impacts. Using this screening approach, a permit applicant must demonstrate that the proposed discharge is unavoidable and is the least environmentally damaging practicable alternative (LEDPA).

This Alternatives Analysis provides the substantive documentation and screening of alternatives for determination of the LEDPA, which is a key step in the permitting process for the Scarborough Eastern Trail Connector between the South Portland Greenbelt, terminating at the Wainwright Recreation Complex, and the off-road Eastern Trail, terminating at the Nonesuch River.

### 1.3.2 NRPA, 38 M.S.R.A. § 480

The Natural Resources Protection Act requires that each applicant evaluate, minimize and avoid the impacts a project will have on areas of natural resources. Each applicant must then document that the proposed alteration of freshwater wetlands has been avoided to the extent feasible considering cost, existing technology and logistics based on overall purpose of the project. The applicant is required to evaluate alternatives to determine whether a less environmentally damaging practicable alternative exists by using other sites; reducing the size, scope, configuration or density of the activity; developing alternative designs to reduce the wetland impact; and demonstrating the need for the proposed wetland alteration. In addition, the applicant is required to demonstrate that the area of wetland to be altered will be limited to the minimum amount necessary to complete the project.

An alternatives analysis conducted in conformance with the Section 404(b)(1) Guidelines will also meet NRPA alternatives evaluation and screening requirements. Therefore, this Alternatives Analysis will provide sufficient information to the MaineDEP to demonstrate that the proposed project meets the above criteria and to help facilitate future agency permit approvals of the Scarborough Eastern Trail Connector between the South Portland Greenbelt, terminating at the Wainwright Recreation Complex, and the off-road Eastern Trail, terminating at the Nonesuch River.

## 1.4 Organization of the Alternatives Analysis Report

This report is organized to be consistent with the Guidelines and with NRPA guidelines for the development of an Alternatives Analysis. Section 1 presents the **Introduction**, which includes an overview of the history of the development of the Eastern Trail and the Scarborough Eastern Trail Connector project; the need for the project; regulatory background for the Alternatives Analysis; and organizational format of the Alternatives Analysis. Section 2 provides the **Basic and Overall Project Purpose**. Section 3 discusses the **Proposed Project**, including design definitions, anticipated project

permits, and project phasing. Section 4 presents the **Alternatives Considered**, including the initial screening of alternatives and the detailed evaluation of alternatives. Section 5 describes the **Environmental Effects of the Alternatives**, including a description of the Section 404(b)(1) and NRPA evaluation criteria and a factual determination of the alternatives with respect to the criteria. Section 6 describes the **Minimization Efforts** that are proposed for the preferred alternative. Section 7 includes the **References** used to develop this report. The Appendices provide **supplemental data**. Appendix A provides an excerpt from an early analysis of the Scarborough Eastern Trail Connector prepared by MaineDOT in 2001. Appendix B and C provide the previously prepared wetland delineation reports that have been used for this Alternatives Analysis.

## 2 Project Purpose

Section 2 describes the basic project purpose and the overall project purpose for the Scarborough Eastern Trail Connector, as established by the Town of Scarborough. The project purpose frames the scope of the alternatives analysis. The Guidelines [40 CFR 230.10(a)] discuss both the project purpose in terms of both its “basic project purpose” and its “overall project purpose.” As described in *The Highway Methodology Workbook*, the U.S. Army Corps of Engineers (USACE) defines the overall/basic project purpose broadly to ensure that a reasonable range of alternatives is examined in the Section 404(b)(1) Alternatives Analysis.<sup>20</sup> The purpose statements for the Scarborough Eastern Trail Connector are similar to the purpose and need statements for the overall Eastern Trail, as established by the Eastern Trail Alliance (ETA) and the Eastern Trail Management District (ETMD). The purpose statements also are similar to the goal of the East Coast Greenway project, which is a catalyst for the development of the Scarborough Eastern Trail Connector.

### 2.1 Basic Project Purpose

Per the USACE’s Alternatives Analysis Guidance,<sup>21</sup> the basic project purpose comprises the fundamental, essential purpose of the proposed project and is used by the USACE to determine whether the project is water-dependent. According to the Guidelines, a project is water-dependent if it requires access or proximity to, or siting within, water,<sup>22</sup> in order to fulfill its basic purpose. If an activity associated with the discharge proposed for a water body does not require access or proximity to, or siting within, water (including wetlands) to fulfill its basic purpose, then the activity is not water-dependent.

In accordance with the Guidelines, non-water-dependent activities that would impact special aquatic sites are subject to a more rigorous level of evaluation. The USACE defines special aquatic sites as “geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values.” The Guidelines specifically identify sanctuaries and refuges, wetlands, mud flats, vegetated shallows, coral reefs, and riffle and pool complexes as special aquatic sites. Special aquatic sites, consisting of wetlands, occur within the USACE’s geographic jurisdiction at the site of the proposed Scarborough Eastern Trail Connector.

*The basic project purpose of the Scarborough Eastern Trail Connector is to provide a four-season multi-purpose, transportation and recreation route that connects the communities of Scarborough and South Portland and enhances the use of the existing off-road Eastern Trail network.*

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<sup>20</sup> USACE, New England District. *The Highway Methodology Workbook*. NEDEP-360-1-30. October 1993.

<sup>21</sup> USACE Seattle District, “Alternative Analysis Guidance,” 23 October 2003.

<sup>22</sup> Waters that are regulated under Section 404 of the Clean Water Act include rivers, streams, lakes, ponds, and wetlands.

Per the Guidelines, since the project could be achieved without requiring access or proximity to or siting within a special aquatic site to fulfill its basic project purpose, the project is not considered to be water dependent.

## 2.2 Overall Project Purpose

Per the USACE's Alternatives Analysis Guidance,<sup>23</sup> the overall project purpose is specific to the applicant's project, and serves as the basis for the Section 404(b)(1) Alternatives Analysis. The overall project purpose is determined by further refining the basic project purpose in a way that more specifically describes the applicant's goals, and which allows for a reasonable range of alternatives to be analyzed.

*The overall project purpose of the Scarborough Eastern Trail Connector is to create a non-motorized, four-season, multi-use trail connection between the existing Eastern Trail segments at the Nonesuch River and the Wainwright Recreation Complex, which maximizes off-road connections and alignments, and which provides a quiet and safe route for users of all ages and abilities, access to areas of natural significance and scenic beauty, connectivity among neighborhoods, and a quality experience to its users.*<sup>24</sup>

## 3 Project Description

### 3.1 Design Definitions

The following definitions of bicycle and shared-use paths are applicable to the development of the Scarborough Eastern Trail Connector:

**Bicycle Lane.** A portion of roadway that has been designated for preferential or exclusive use by bicyclists by pavement markings, and if used, signs. It is intended for one-way traffic, usually in the same direction as the adjacent traffic lane.

**Off-Road Shared Use Path.** A bikeway within an independent ROW that is not located along a roadway. Off-road shared use paths may also be used by pedestrians, skaters, wheelchair users, joggers, and other non-motorized users. Most shared use paths are designed for two-way travel.

**On-Road Separated Shared Use Path.** A bikeway adjacent to, but physically separated from, motor vehicle traffic by an open space or barrier, and that is located within the highway ROW. On-road shared use paths may also be used by pedestrians, skaters, wheelchair users, joggers, and other non-motorized users. Most shared use paths are designed for two-way travel.

**Right-of-Way (ROW).** A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to transportation purposes.

**Roadway.** The portion of the highway, including shoulders, intended for vehicle use.

**Shared Roadway.** A roadway that is open to both bicycle and motor vehicle travel.

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<sup>23</sup> USACE Seattle District, "Alternative Analysis Guidance," 23 October 2003.

<sup>24</sup> Daniel Stewart, MaineDOT. Correspondence to Timothy Cote, HNTB Corporation, 8 Jul. 2015. TS



**Shoulder.** The portion of the roadway contiguous with the traveled way that accommodates stopped vehicles, emergency use, and lateral support of subbase, base, and surface courses. Shoulders, where paved and of sufficient width, are often used by bicyclists.

**Sidepath.** A shared use path located immediately adjacent and parallel to a roadway. For the purposes of this report sidepaths consist of widened roadway shoulders with no physical separation from traffic.

**Sidewalk.** The portion of a street or highway ROW, beyond the curb or edge of roadway pavement, which is intended for use by pedestrians.

**Traveled Way.** The portion of the roadway intended for the movement of vehicles, exclusive of shoulders and any bike lane immediately inside of the shoulder.

For this Alternatives Analysis, the following design terms apply:

- An on-road trail is considered to be a bicycle lane, a separated shared use path along a roadway, a shared roadway, or a sidepath.
- An off-road trail is considered an off-road shared use path in an independent right-of-way.

## 3.2 Overview of Trail Design

The proposed project consists of a multi-purpose bicycle and pedestrian path located within and between the communities of Scarborough and South Portland, Maine. The route will include the construction of trail segments, roadway crossings, and new bridges spanning the Nonesuch River and Pan Am Railway corridor.

The American Association of State Highway and Transportation Officials' (AASHTO's) *Guide for the Development of Bicycle Facilities (AASHTO Guide)*<sup>25</sup> provides design guidance on bicycle facilities that are accepted and used by MaineDOT. The AASHTO Guide provides information on how to accommodate bicycle travel and operations in most riding environments. In some sections of the guide suggested minimum dimensions are provided. These are recommended only where further deviation from desirable values could increase crash frequency or severity. These guidelines will be used in the development of the Scarborough Eastern Trail Connector.

The proposed trail will generally consist of a paved or stone dust trail 10-feet to 12-feet wide, with a 2-foot-wide grass shoulder on each side. The AASHTO Goodie recommends trail widths of 10 to 12 feet to minimize the potential for bicycle collisions since facilities with less width provide marginal passing room for trail users. In selected locations the trail width will be reduced to 8 feet wide to minimize natural resource impacts. Pavement is proposed where trail grades exceed 3 percent to resist erosion, where the trail passes through the Nonesuch River floodplain and, at the City's request, for all portions of the trail located within South Portland. With the exception of the bridge crossings, the trail along the project corridor generally will follow the existing ground surface. In wet areas the trail surface will be elevated up to two feet above existing ground so that a dry trail surface is maintained. The trail will be designed to provide full accommodation for pedestrian and bicycle use, including Americans with Disabilities Act (ADA) standards for accessible design. The project has been designed primarily for a design speed of 18 miles per hour (MPH).

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<sup>25</sup> American Association of State Highway and Transportation Officials. *Guide for the Development of Bicycle Facilities*. 2012. Fourth Edition.

The horizontal alignment for the trail was derived as a balance between ROW, natural resource impacts, cost and the design standards presented in the American Association of State Highway and Transportation Officials' (AASHTO's) *Guide for the Development of Bicycle Facilities (Guide)*.<sup>26</sup> Where natural resources are present the trail was routed around wetland areas and existing features by considering local topography and ROW to minimize project impacts and to reduce construction cost to the extent possible.

A proposed vertical profile was developed only at the bridge approaches to the Nonesuch River and Pan-Am Railroad crossings. The vertical alignment design is based upon guidance presented in the AASHTO *Guide*. The AASHTO recommendation for a maximum profile grade of 5 percent could not be achieved at the Pan-Am railroad crossing. The required 22-foot, 6-inch under clearance for this crossing, together with the natural topography west of the river and the proximity of the Parkway Drive crossing to the east, required grades of 8.33 percent. Given these steep grades, resting intervals will be provided every 200 feet as required by ADA standards.

### 3.3 Project Permits

In addition to a Section 404 permit from the USACE and NRPA (or Permit by Rule) from MaineDEP for anticipated wetland impacts, the proposed off-road Scarborough Eastern Trail Connector is anticipated to require the following permits and approvals:

- Water Quality Certification, per Section 401 of the Clean Water Act;
- General Permit for Stormwater Discharges associated with Construction Activities, per the National Pollutant Discharge Elimination System (NPDES) program (Section 402 of the Clean Water Act); and,
- Minor revisions/modifications to Site Location of Development (Site Law), per 38 M.R.S.A. §§ 481-490.
- Certification, per Maine Stormwater Management Law, 38 M.R.S.A. § 420-D.

### 3.4 Project Phasing

The Scarborough Eastern Trail Connector will be designed and constructed in two phases, consisting of the southern and northern portions of the trail (as shown on Figure 1-1). The first phase consists of the northern portion of the trail, which extends from the Wainwright Recreation Complex southwest to Pleasant Hill Road. The second phase of the Scarborough Eastern Trail Connector consists of the southern portion of the trail which extends from the west bank of the Nonesuch River northeast to (and including if applicable) Pleasant Hill Road. This Alternatives Analysis addresses both phases of the Eastern Trail Connector. Following USACE and MaineDEP approvals of the Alternatives Analysis and selection of the LEDPA, permit applications will be submitted for the first phase of the Scarborough Connector. The second phase of the Connector will be permitted at a future date.

The first phase of the Scarborough Eastern Trail Connector is currently funded for construction and is included in the MaineDOT *Work Plan for Calendar Years 2015, 2016, 2017* (January 2015) and in the Maine Statewide Transportation Improvement Program (STIP), Federal Fiscal Years (FYs) 2014-2017.

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<sup>26</sup> American Association of State Highway and Transportation Officials. *Guide for the Development of Bicycle Facilities*. 2012. Fourth Edition.

## 4 Alternatives Considered

Section 4 presents the alternatives considered for the Scarborough Eastern Trail Connector. The proposed project is not considered to be water-dependent, per the Guidelines; the Guidelines therefore presume that less environmentally-damaging practicable alternatives exist. The burden is on the Town of Scarborough, the permit applicant, to demonstrate that a less environmentally-damaging practicable alternative does not exist for the Scarborough Eastern Trail Connector.

The USACE and MaineDEP consider the applicant's goals and objectives in identifying the overall project purpose, which establishes the range of alternatives to be developed and evaluated pursuant to the Guidelines. The first step is the development and consideration of alternative methods that meet the overall project purpose.

### 4.1 No Build Alternative

The No Build (No Action) Alternative presents the conditions which would be anticipated to exist without a USACE or MaineDEP permit.

The No Build Alternative consists of utilizing the existing interim on-road connection between the Town of Scarborough and City of South Portland as the Eastern Trail, as previously described in Section 1.2.1 and shown on Figure 1-4. For this Alternatives Analysis, the No Build Alternative represents the baseline conditions against which other (build) alternatives are compared and evaluated. The No Build Alternative would have no Section 404-related effects on the aquatic resources, as it would not include any discharges of dredge or fill material into waters of the U.S.

While the No Build Alternative would be less environmentally damaging, would be practicable as an interim solution, and would meet the basic project purpose in part,<sup>27</sup> it would not meet the overall project purpose. The current route, which primarily serves bicyclists, was established as an interim measure to provide connectivity between trail segments until a permanent off-road trail network could be constructed.<sup>28</sup> The route is not suitable as an all-season facility since winter road maintenance operations make the roadway shoulders incompatible with typical winter uses of the trail (primarily cross-country skiing and snowshoeing).

The current on-road route is not multipurpose; it does not provide a safe and inviting facility for all skill levels and uses. The existing route does not satisfy current ADA guidelines for accessibility, does not provide a direct and efficient link between existing off-road trail segments, and does not provide a continuous off-road trail network consistent with the goals of the Eastern Trail Alliance, the East Coast Greenway, the local communities and MaineDOT. Therefore, the selection of this alternative would be contrary to the public interest because it would perpetuate an unsafe condition and would not equitably serve all users or demographics. Additional information regarding these evaluation criteria is provided in Section 4.3.3.

### 4.2 Previous Evaluations of Build Alternatives

In the past fifteen years, there have been a number of studies on the Eastern Trail, including the development of build alternatives for the Scarborough Eastern Trail Connector. Section 4.2 provides an

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<sup>27</sup> The No Build Alternative does not meet the multipurpose recreation aspects of the project.

<sup>28</sup> Wilbur Smith, "Eastern Trail Engineering Feasibility Study: Final Report, Page 12.

overview of these previous studies. These previous studies, which were prepared on behalf of MaineDOT, ETMD, and the Town of Scarborough, form the basis for both the alternatives screening and more detailed assessment presented in this Alternatives Analysis.

#### **4.2.1 Eastern Trail Engineering Feasibility Study**

In 2001, MaineDOT commissioned the *Eastern Trail Engineering Feasibility Study*, which examined connections between Kittery and South Portland with the goal of advancing the vision for a continuous multipurpose, transportation and recreation trail between Portsmouth and South Portland. The *Study* recommended a newly created, off-road, multi-use trail for most of the corridor length. The *Study* also identified interim on-road trail routes, recognizing that construction of the off-road trail would take decades to complete and that temporary on-road routes would be needed as a stop-gap measure until off-road facilities could be constructed:

*The interim on-road trails have been selected to be used ‘as-is’ to provide a continuous Eastern Trail corridor. As more detailed implementation plans are developed by the ETA and the municipalities, it may be desirable to make improvements to those routes that may be used for more than five years. Phasing the construction of off-road trails should take into account the level of accommodation provided by the interim trail. Off-road trail segments that have interim roads that provide poorer conditions for trail users should be considered for higher priority implementation. In the long term, these routes may also serve as feeder routes to the off-road segments of the Eastern Trail and may warrant improvement.*

The first twelve miles of the trail, from Route 1 in Kittery to the Jewett trailhead in South Berwick, were expected to be permanent on-road routes due to the lack of a feasible off-road corridor, primarily relating to ROW constraints. For these areas, recommendations for roadway improvements were made. From Jewett trailhead northward, potential off-road routes were identified for further study and a continuous interim on-road route was designated as the Eastern Trail. This provided an identifiable route for cyclists to use until the off-road segments could be developed.

In the *Eastern Trail Engineering Feasibility Study*, the project study area is included within Segment #20, 2.2 miles from Black Point Road/Route 207 to Scarborough/South Portland Town Line, and Segment #21, 1.5 miles from the Scarborough/South Portland Town Line to Ball Fields (Wainwright Recreation Complex). Appendix A contains the conceptual plans of the segments from the 2001 study. The report recommended an interim on-road route as well as two possible off-road connections. The *Feasibility Study* determined that the development of an off-road trail following the abandoned Eastern Railroad Corridor would not be feasible within the study area due to restrictions and/or constraints associated with the corridor being repurposed in some areas, and the fact that the corridor passes through areas with substantial land use conflicts including Rigby Yard, a very active industrial rail yard for the Maine Central Railroad Mainline (now Pam Am Railways Mainline).<sup>29</sup> However, the study did identify two potential off-road alignments for consideration that did not follow the abandoned railroad corridor.

#### **4.2.2 Eastern Trail: Scarborough to South Portland Connector, Final Report**

In 2006, the ETMD commissioned an additional planning study of the Eastern trail connection between Scarborough and South Portland.<sup>30</sup> The purpose of the study was to make the connection from the

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<sup>29</sup>MaineDOT, Eastern Trail Alliance. *Eastern Trail Engineering Feasibility Study, Final Report*, page 12.

<sup>30</sup>Eastern Trail Management District. *Eastern Trail: Scarborough to South Portland Connector*. Prepared by Wilbur Smith Associates, September 2006.



Nonesuch River to the Wainwright Recreation Complex. The study objectives were, to the extent feasible, to replace the interim on-road route with an off-road link and to provide a connection between existing trails that would provide trail users with a high-quality experience and encourage the community to use the corridor as a transportation alternative. Eight potential trail segments, including four segments with two variations each, were initially evaluated based on the following criteria:

- Trail characteristics – considering whether the segment would be on-road or off-road;
- Directness, convenience, functionality, users – considering whether the segment would be a direct and convenient route, and the level of skill required to use the segment;
- Attractiveness, quality – considering whether the segment would traverse a natural setting;
- Environmental considerations (e.g., wetlands, habitat) – considering whether the segment would impact waters and wetlands and habitat;
- Structures, road and rail crossings;
- Number and type of parcels involved; and
- Construction costs (planning level/order of magnitude).

The study assumed the typical off-road trail would require a 22-foot cleared width and a 20-foot easement. The trail surface would be 12-feet wide, with a 2-foot loamed and seeded shoulder on each side. The trail would maintain existing wooded buffers to the greatest extent practicable. Where clearing and grubbing trees would be required, remaining trees would be limbed to provide a 10-foot clearance.

The typical on-road trail, if necessary, would be constructed as either a separated shared-use path facility or sidepath facility. Separated shared use paths would require the same width, shoulders and clearances as the off-road trail. Consistent with the AASHTO Guide they would be located at least 5-feet from the pavement edge within the public ROW to the greatest extent possible. Sidepath facilities would consist of a path within a 5-6 foot wide roadway shoulder.

The trail segments were grouped to create a continuous trail between the Nonesuch River and the Wainwright Recreation Complex. Following public review and additional evaluation, including consideration of construction costs, environmental considerations, and complexities associated with land use negotiations, a preferred alignment trail was selected. The preferred alignment included a primarily off-road alignment with a short section of separated shared use path at a proposed crossing of the Pan Am Rail Corridor alongside the existing Pleasant Hill Road Bridge. This alignment was subsequently adopted by the ETMD Board with the caveat that “the ETMD acknowledges that this selection was based on current realities and that any changes in future circumstances may warrant a modification of the adopted route.”<sup>31</sup> Obtaining ROW to construct the project was a major challenge and consideration for this route.

#### **4.2.3 Alternatives Analysis, Eastern Trail Nonesuch River Crossing; Scarborough, Maine**

Following the 2006 report, the ETMD and the Town of Scarborough started discussions with several landowners regarding the possibility of locating the Eastern Trail on their parcels with the goal of moving the entirety of the proposed trail to an off-road setting consistent with the overall purpose of the Eastern Trail. Landowners, including Central Maine Power (CMP), abutters to the CMP corridor, and abutters to

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<sup>31</sup> Eastern Trail Management District. *Eastern Trail: Scarborough to South Portland Connector*. Prepared by Wilbur Smith Associates, September 2006, page 7 of 8.

the abandoned Eastern Railroad Corridor, were contacted. Based on positive discussions with these landowners, and the development of a tentative co-location agreement with CMP, the Town of Scarborough commissioned an additional Alternatives Analysis for the Eastern Trail Connector in 2010.<sup>32</sup> This analysis involved on-site resource evaluations and a further assessment of segments proximate to the east bank of the Nonesuch River (the Sanborn parcels). In keeping with the overall goal of the ETMD, the goal of the analysis was to develop a viable off-road trail segment that would “provide an opportunity for both local residents and visitors to safely travel by walking or bicycling while enjoying the natural resources of the area.”<sup>33</sup> A primary focus of the analysis was to avoid and minimize impacts to wetlands.

The Alternatives Analysis focused solely on the southern portion of the trail, extending from the west bank of the Nonesuch River to Pleasant Hill Road, and identified four route alternatives/refinements of previously identified routes in this area. The assessment included a preliminary estimate of wetland impacts assuming a 10-foot wide crossing within wetland areas and provided recommendations for an alignment through the Sanborn parcels that avoided and minimized natural resource impacts to the extent practical.

### **4.3 Initial Alternatives Identification and Screening**

In 2012 the Town of Scarborough, working in cooperation with the MaineDOT, advanced the Scarborough Eastern Trail Connector project through the selection of a final trail alignment and preliminary design. In conjunction with the preliminary design, the Town is preparing this Alternatives Assessment to be consistent with Section 404(b)(1) guidelines and NRPA guidelines for alternatives analyses.

#### **4.3.1 Alternative Trail Segments and Alignments**

Nineteen alternative alignments were identified for the Scarborough Eastern Trail Connector project and represent the total extent of the Connector, extending from the western bank of the Nonesuch River northeast to the Wainwright Recreation Complex. The alignments were derived from previous reports and assessments and additional evaluations completed as part of this study.

From the 19 alignments, a total of 17 unique trail segments were identified for the Scarborough Eastern Trail Connector. Generally, the start and end points of these segments were established to allow screening based on unique aspects of the trail segment (e.g. on-road or off-road), and to reflect areas where the possible alignments share a common location. Consideration was also given to the likely design and construction of the Scarborough Eastern Trail Connector in two phases, consisting of the southern and northern portions of the trail. Eleven segments were identified for the southern portion of the study area (S-1 through S-11) and six segments were identified for the northern portion of the study area (N-1 through N-6). The end points of the southern segments at Pleasant Hill Road determined the logical terminus points for the connecting to northern segments.

Figure 4-1 and Figure 4-2 present the segments that were identified based on the 19 alignments for the Scarborough Eastern Trail Connector project. Both figures present schematic diagrams of the proposed segments for illustrative purposes; they are not representative of engineered designs. On-road (side path) segments are shown in red while segments involving the construction of off-road shared use path and separated shared use path facilities are shown in blue.

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<sup>32</sup> Town of Scarborough. *Alternatives Analysis for the Eastern Trail Nonesuch River Crossing, Scarborough, Maine*. Prepared by Normandeau Associates, Inc. November 2010.

<sup>33</sup> *Ibid.*, page 1.

Figure 4-1 presents the eleven segments in the southern portion of the study area, extending from the west bank of the Nonesuch River east to, and including, Pleasant Hill Road. Segments S-2/S-3, S-4/S-5, S-6/S-7, and S-10/S-11 are located along Pleasant Hill Road and represent either a separated shared use path option or a side path option. In both cases the trail would be located in close proximity to the roadway.

Figure 4-2 presents the six segments in the northern portion of the study area, extending from Pleasant Hill Road east to the Wainwright Recreation Complex.

#### **4.3.2 Screening Process**

Each trail segment was screened based on the evaluation metrics presented in Table 4-1 and further described in Section 4.3.3. A determination was then made regarding whether each segment would satisfy the purpose and need of the project, as described in Section 1.1.2 and Section 2, and whether construction of the segment would be feasible.

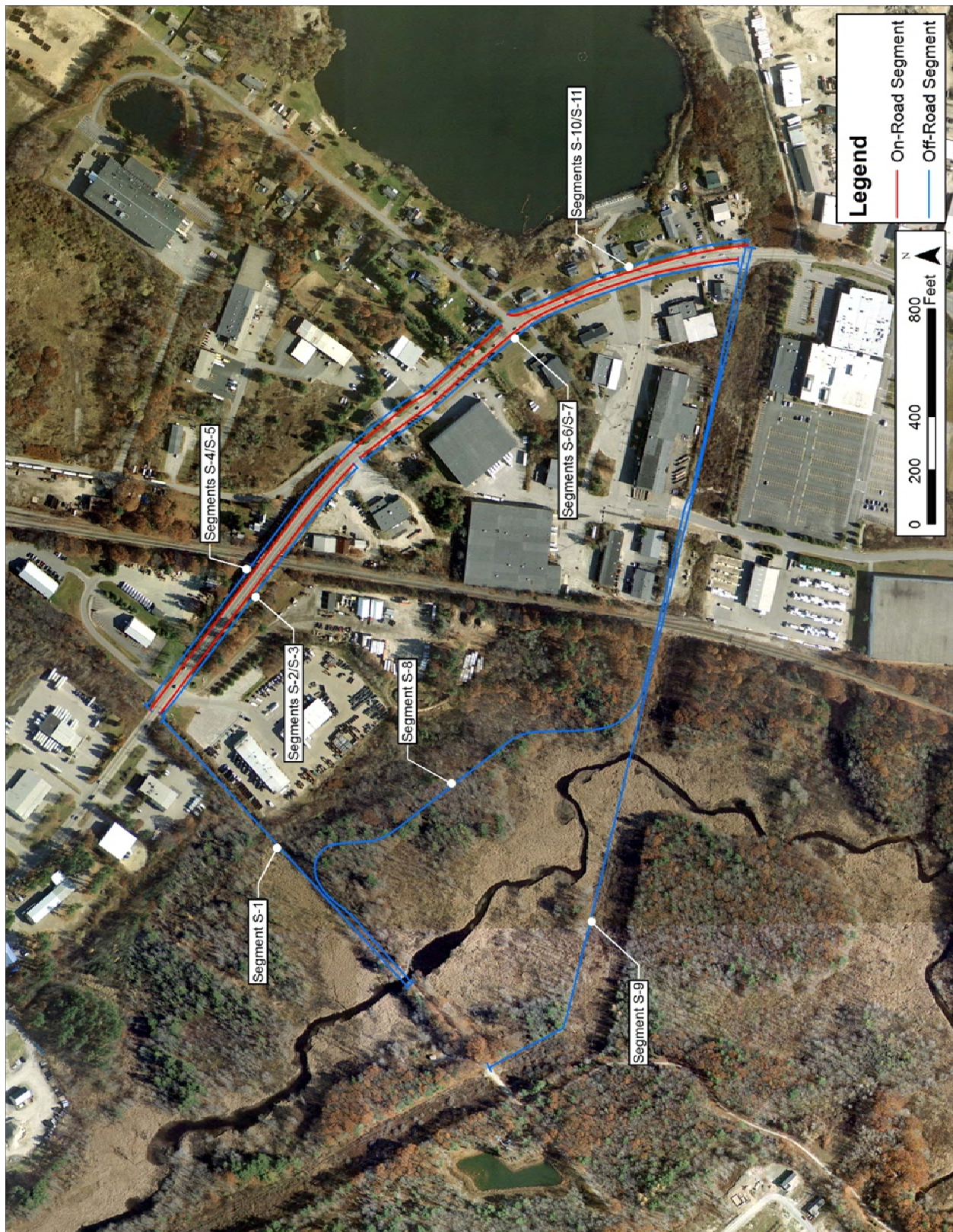
Following the initial screening process, alignments (including trail segments) that did not meet the project purpose and need, or that were judged not feasible from an engineering or construction perspective, were eliminated from further consideration. The remaining alignments were advanced through a more detailed alternatives analysis.

#### **4.3.3 Screening Criteria and Discussion**

Screening criteria were developed to evaluate alternative segments according to the overall project purpose:

*The overall project purpose of the Scarborough Eastern Trail Connector is to create a non-motorized, four-season, multi-use trail connection between the existing Eastern Trail segments at the Nonesuch River and the Wainwright Recreation Complex, which maximizes off-road connections and alignments, and which provides a quiet and safe route for users of all ages and abilities, access to areas of natural significance and scenic beauty, connectivity among neighborhoods, and a quality experience to its users.*





Note: Segment lines are schematic only; they are not representative of engineered designs.

**Figure 4-1 Alternative Trail Segments in the Southern Portion of the Study Area**





Note: Segment lines are schematic only; they are not representative of engineered designs.

**Figure 4-2 Alternative Trail Segments in the Northern Portion of the Study Area**

The criteria used for the initial alternatives screening include:

- Public Safety;
- Waters and Wetlands,
- Engineering and Construction Feasibility
- Trail Characteristics, Quality and Usage
- Accessibility/ ADA Compliance
- Critical Wildlife Habitat
- Functionality / Suitability for all users

Table 4-1 presents the screening factors, including evaluation metrics and impact measures, applied to the initial alternatives screening.

**Table 4-1 Initial Alternatives Analysis Screening Criteria**

Screening Factor	Evaluation Metric	Measurement
Public Safety	Considering the safety of the segment, focusing on the potential for accidents with motor vehicles, including whether the segment would be adjacent to roadway traffic and whether road, rail, and driveway crossings would be required.	Length (linear feet) of trail alongside traffic; length of roadway and driveway crossings; speed and volume of traffic
Accessibility / ADA compliance	Considering whether the segment would satisfy ADA accessibility criteria	Pass/Fail - Will the facility meet ADA requirements
Waters and Wetlands	Considering whether the segment would impact waters, and wetlands including wetland type, function and value, and state designation as a wetland of special significance (WOSS).	Acres (Ac.) of potential wetland impact, including type; number of stream crossings; number of vernal pools impacted.
Notable Wildlife Habitat	Considering whether the segment would impact areas designated as critical wildlife habitat.	Acres (Ac.) of potential habitat impacted.
Engineering & Construction Feasibility	Considering whether the segment would have engineering and construction feasibility, including complexity of design and construction, and whether adequate ROW exists. Also includes preliminary construction cost of proposed bridges.	Overall feasibility based on: complexity; availability of ROW; bridge construction cost
Functionality / Suitability for all modes & users	Considering whether the segment would consist of a four-season facility suitable for use by multiple modes and users of all ages, experience and abilities (Note: This evaluation metric does not consider suitability for disabled trail users whereas this metric is evaluated separately).	Acceptability of segment for four-season use, user age and user experience.
Trail Characteristics / Quality / Usage	Considering whether the segment would consist of an off-road facility that maximizes off-road connections and traverses natural areas.	Linear feet (and %) of segment off-road and in natural areas; overall user experience.



#### **4.3.3.1 Public Safety**

Public Safety considers the segment's potential for accidents, including its adjacency to roadway traffic and the need for roadway crossings.

##### **4.3.3.1.1 Background and Discussion of Screening Factor**

The most common and potentially deadly user conflict related to pedestrian and bicycle networks involve motor vehicles. This assessment is supported by FHWA's position that roadway shoulders are not substitutes for well-designed pedestrian facilities.<sup>34</sup> The agency has sought to minimize pedestrian exposure and reduce collisions between pedestrians/bicyclists and motor vehicles through encouraging the design of dedicated pedestrian and bicycle facilities such as bicycle lanes, sidewalks, separated shared use paths and off-road shared use paths. This position is supported by extensive research and crash statistics which reveal important insights into the risks related to placing trail users in close proximity to motor vehicle traffic.

In 2013 a total of 742 bicyclists were killed, and 48,000 were injured, in traffic crashes with motor vehicles in the United States. Furthermore, the data show the number of bicyclists killed increased 19 percent between 2010 and 2013, the last year for which data is available.<sup>35</sup>

Annually, around 4,500 pedestrians are killed, and 66,000 are injured, in traffic crashes with motor vehicles in the United States. In 2013, 14 percent of all traffic fatalities, and an estimated 3 percent of those injured in traffic crashes, were pedestrians.<sup>36</sup> Five to nine year-olds have the highest crash involvement rates, and over 20 percent of accidents involving older pedestrians result in death. The data also suggest that September through January is the time period in which the highest number of pedestrian fatalities occurs due to less daylight and more dangerous weather conditions.

Vehicle speeds have a substantial effect on the crash survival rates for pedestrians and bicyclists with the chances of a fatality increasing exponentially as vehicle speeds increase. At 20 miles per hour (mph), a pedestrian or bicyclist has a 2 percent chance of being killed; at 30 mph, a 20 percent chance of being killed; and at 40 mph, a 70 percent chance of being killed.<sup>37</sup> This reality is reflected in MaineDOT's design policies for crosswalks which are intended to maximize pedestrian safety and minimize the potential for accidents with motor vehicles. This policy limits the installation of crosswalks to areas where the speed limit is 40 mph or less unless the intersection is controlled by a fully actuated traffic signal.<sup>38</sup>

Pedestrians killed while "walking along the roadway" (on a sidepath/roadway shoulder) account for almost 8 percent of pedestrian deaths.<sup>39</sup> The FHWA has determined that providing walkways separated from the travel lanes could help to prevent up to 88 percent of these "walking along roadway" crashes.<sup>40</sup>

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<sup>34</sup> FHWA, FHWA Safety Program, "Pedestrian Countermeasure Policy Best Practice Report", Report No. FHWA-SA-11-017, undated.

<sup>35</sup> NHTSA National Center for Statistics and Analysis, "Traffic Safety Facts – Bicyclists and other Cyclists, 2013 Data", May 2015.

<sup>36</sup> NHTSA National Center for Statistics and Analysis, "Traffic Safety Facts – Pedestrians, 2013 Data", February 2015.

<sup>37</sup> Petro, J. Ganson, L., "Vision Zero: How Safer Streets in New York City Can Save More Than 100 Lives a Year." Drum Major Institute for Public Policy, Transportation Alternatives, 2001.

<sup>38</sup> MaineDOT, *Engineering Instruction C6 – MaineDOT Guidelines on Crosswalks*, March 6, 2013.

<sup>39</sup> FHWA, "Pedestrian and Bicycle Crashes of the Early 1990's", Publication No. FHWA-RD-95-163, FHWA, 1995

<sup>40</sup> FHWA, "An Analysis of Factors Contributing to "Walking Along Roadway" Crashes: Research Study and Guidelines for Sidewalks and Walkways", Report No. FHWA-RD-01-101, FHWA, 2001

While separated shared paths have the potential to improve traffic safety through the reduction of “along the roadway” crashes, intersecting driveways and roadways remain a substantial potential crash risk due to the conflict between turning motor vehicles and through bicyclists and pedestrians.

A 2014 study completed for FHWA evaluated 17 sites where sidepaths were converted into separated facilities and yielded mixed results. In approximately half the locations the separated bike lane and comparison site saw similar trends in the number of bicycle crashes. At the remaining locations, differences between the pre and post-construction crash rates either increased or decreased.<sup>41</sup> Because separated facilities have a greater percentage of accidents occurring at intersections and driveways, and a lower percentage of “along the roadway” crashes, the probability of severe injury or death would presumably decrease since the accidents involve vehicles traveling at a slower speed. However, conflicts between pedestrians/bicyclists and motor vehicles remain a major consideration for separated facilities.

#### **4.3.3.1.2 Evaluation Criteria and Discussion of Initial Screening Results**

Locating shared-use paths in an independent off-road corridor away from traffic minimizes the number of conflict points with motor vehicles and results in facilities with fewer injuries and fatalities caused by crashes with motor vehicles.

The use of sidepaths, or locating a two-way shared-use path located immediately adjacent to a roadway, results in operational and safety problems. The AASHTO *Guide* strongly cautions designers regarding safety hazards associated with separated multi-use facilities on roadways that include many driveways and street crossings. The *Guide* enumerates potential problems and safety issues that need to be given serious consideration when planning or designing a pedestrian/bicycle facility adjacent to a roadway, several of which are presented in Figure 4-3. For these reasons the AASHTO recommends paths located in independent rights-of-way.

For instance, at intersections, motorists entering or crossing the roadway often will not notice bicyclists coming from their right, as they are not expecting contraflow vehicles. Even bicyclists coming from the left often go unnoticed, especially when sight distances are poor. In addition, although the shared-use path should be given the same priority through intersections as the parallel highway, motorists falsely expect bicyclists to stop or yield at all cross-streets and driveways. The extent of these problems, and others, depends on the context and layout of the roadway, number and nature of cross-streets, driveways, traffic volumes, and adjacent motor vehicle travel speeds.

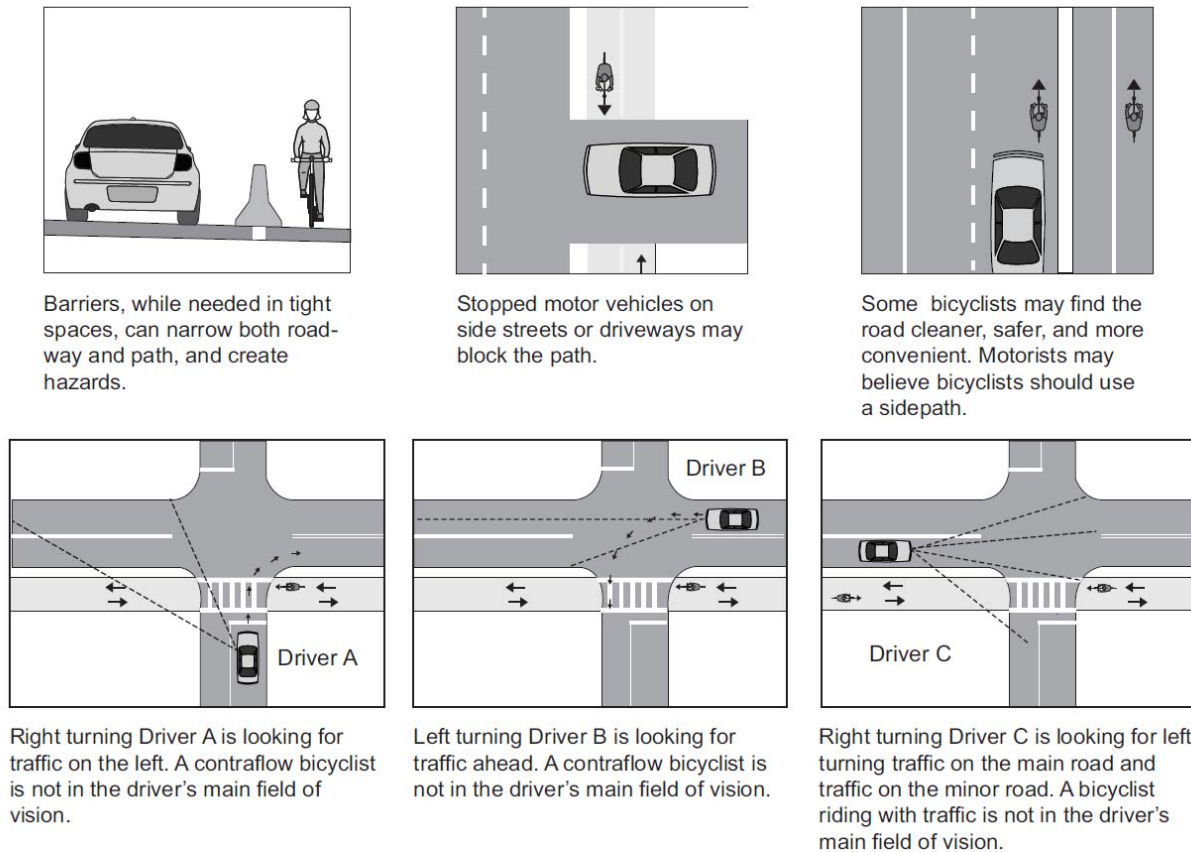
Several on-road segments of trail have been evaluated as part of this Alternatives Analysis. These roadways include Pond View Drive, Rigby Road and Gary L. Maietta Way. Each of these roadways have relatively low volume and low speed traffic.

Trail segments along Pleasant Hill Road and Highland Avenue have also been considered. Pleasant Hill Road passes through a heavily developed industrial area carrying approximately 11,900 vehicles per day with a posted speed limit of 35 mph. Highland Avenue carries approximately 6,200 vehicles per day and has posted speeds in the study area ranging between 40 mph and 45 mph. On both roadways, anecdotal evidence indicates vehicles regularly exceed the posted speeds, especially along Highland Avenue. Driveway and roadway crossings would be required for any facility located along Pleasant Hill Road or Highland Avenue.

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<sup>41</sup> FHWA, “Separated Bike Lane Planning and Design Guide”, Appendix C-Crash Analysis, Page C-28, May 2015





**Figure 4-3 Sidepath Conflicts** (*excerpted Taken from AASHTO Guide*)

The safety of each trail segment has been evaluated based on the potential conflict between trail users and motorists. For sidepath facilities, where trail users are placed in a widened roadway shoulder, total length of trail (inclusive of intersecting roadways and driveway) has been quantified. For separated shared-use facilities the number of roadway and driveway crossings has been quantified. The traffic volume and posted speed limit of the roadway have also been included as evaluation metrics. Accident rates, and the probability for significant injury or death, increase as traffic volumes and vehicle speeds increase.

#### 4.3.3.2 Accessibility / ADA Compliance

Accessibility considers the segment's ability to satisfy ADA accessibility criteria.

##### 4.3.3.2.1 Background and Discussion of Screening Factor

Because shared-use paths provide a transportation function, and because the proposed facility will be federally funded, it must accommodate people with disabilities. Key issues for accessibility include safety, trail access points, grade, cross-slope, street crossings, curb ramp design, railings, and signage. For example:

- **Trail surfaces.** Surfaces can be paved or unpaved (crushed aggregate or stone dust), but should be firm, stable, and slip-resistant. This provides a trail surface that can be reasonably traversed by wheelchair users, or those with crutches, walkers or other mobility aids.

- **Grade.** People with mobility impairments have a difficult time negotiating steep grades because of the additional effort required to travel over sloped surfaces. Therefore, running grades on shared-use paths should generally be 5 percent or less. Slopes up to 12.5 percent are allowed for short distances if level landings or rest areas are provided at appropriate intervals on grades steeper than five percent.
- **Cross slopes.** Severe cross slopes can make it difficult for wheelchair users and other pedestrians to maintain their lateral balance because they must work against the force of gravity. Cross slopes can cause wheelchairs to veer downhill and create problems for individuals using crutches who cannot compensate for the height differential that cross slopes create. The impacts of cross slopes are compounded when combined with steep grades or surfaces that are not firm and stable. For asphalt and concrete, a cross slope of 2 percent should be adequate. For non-paved surfaces, such as crushed aggregate, the maximum recommended cross slope is 5 percent.
- **Street crossings.** At roadway and driveway crossings proper tip-down ramps with detectable warning strips must be provided.

#### **4.3.3.2.2 Evaluation Criteria and Discussion of Initial Screening Results**

The Accessibility and ADA compliance of each trail segment has been evaluated on a pass/fail basis using the preceding criteria.

Each of the proposed segments will consist of trail constructed using surface materials such as pavement or stone dust that meet requirements for accessibility. In addition, the longitudinal grade of the trail will also meet ADA criteria.

However, several significant differences exist between sidepaths and either separated or off-road shared use path facilities. Because sidepaths are simply widened portions of the roadway shoulder designated for pedestrian and bicycle use, they do not provide an acceptable environment for trail users with disabilities. First, winter roadway maintenance activities makes the installation of tactile warning strips at intersecting roadway or driveway locations impractical; they would be damaged or pulled out of place during roadway plowing. Secondly, shoulder cross slopes exceeding 2 percent are commonly required to accommodate roadway drainage. In addition, because no curb or other separating feature is provided between the shoulder and the travelway, users with visual impairments are unable to distinguish between the designated pedestrian area in the shoulder and the active travelway of the road. This presents significant safety concerns for users with impaired sight. Therefore, sidepath facilities would not provide a facility that would be fully compliant with ADA guidelines.

All separated shared use path options, and all off-road shared use path facilities would be designed and constructed to meet current requirements for Accessibility and ADA compliance.

#### **4.3.3.3 Waters and Wetlands**

Waterways and wetlands as a screening criterion considers the segment's potential to adversely impact waters and wetlands and includes consideration of the overall quality of each in the project site.

##### **4.3.3.3.1 Background and Discussion of Screening Factor**

Per Section 404(b)(1) and NRPA, waters and wetlands require special protection because of their ecological significance and contributions to the overall health or vitality of an ecosystem of a region. Both

federal and state directives require proponents to first avoid adverse impacts to wetlands. In the event that impacts are unavoidable, proponents must demonstrate that they have minimized impacts to the maximum extent possible. Mitigation is then required for the impact, including restoring the affected environment and providing compensation. NRPA defines compensation as replacement of a lost or degraded wetland function with a function of equal or greater value.

Both the USACE and MaineDEP identify the following functions and values as indicators of the quality of wetland: flood water storage, flood water conveyance, ground water recharge and discharge, erosion control, wave attenuation, water quality protection, scenic and aesthetic use, food chain support, fisheries, wetland plant habitat, aquatic habitat, and wildlife habitat. The value of the wetland is defined with respect to the individual or collective functions that it provides.<sup>42</sup>

#### 4.3.3.3.2 Evaluation Criteria and Discussion of Initial Screening Results

Potential impacts to the aquatic ecosystem have been developed based on both remote sensing and wetland field delineations.<sup>43</sup> The field delineations were performed in 2010,<sup>44</sup> 2013,<sup>45</sup> and 2015.<sup>46</sup> Figure 4-4 and Figure 4-5 present the southern and northern segments shown on the U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) database. Figure 4-6 and Figure 4-7 present the southern and northern segments shown on the U.S. Department of Agriculture Natural Resource Conservation Service (USDA NRCS) soils database. The NWI and soils mapping (showing poorly and very poorly drained soils) indicate potential wetland resources in the project study area. Based on a vernal pool habitat assessment (2010), and vernal pool surveys performed on the project site in 2014 and 2015, no vernal pools or potential vernal pool habitat were identified in the project area. Additionally, per the Maine Department of Inland Fish and Wildlife (MaineIFW), there are currently no Significant Vernal Pools mapped along this project corridor; however, a comprehensive statewide inventory for Significant Vernal Pools has not been completed.

The approximated wetland resource mapping (Figures 4-4 through 4-7) indicates that on-road segments would not affect wetlands, nor would they require stream crossings. Additionally, the No Build Alternative (the existing on-road Eastern Trail) would not impact wetlands. However, impacts to wetlands would be unavoidable if a complete, or primarily, off-road trail connection were constructed for the Scarborough Eastern Trail Connector, as stated in the overall project purpose. These off-road segments also would require waterbody crossings.

Based on an assessment of the functions and values of project area wetlands, those in the southern portion of the project exhibit high functions and values; primarily because they are relatively large areas, undisturbed, well-vegetated, and associated with stream floodplains. In the area of Prout's Pond along the CMP corridor, wetland functions and values range from low to moderate; primarily due to small size, sparse or impacted vegetation, and ongoing or past site disturbance. In the area immediately west of the Wainwright Recreation Complex, wetlands exhibit high functions and values for the same reasons as those in the southern portion of the project. Additional information regarding wetland functions and values is provided in Appendix B.

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<sup>42</sup> NRPA Chapter 310w

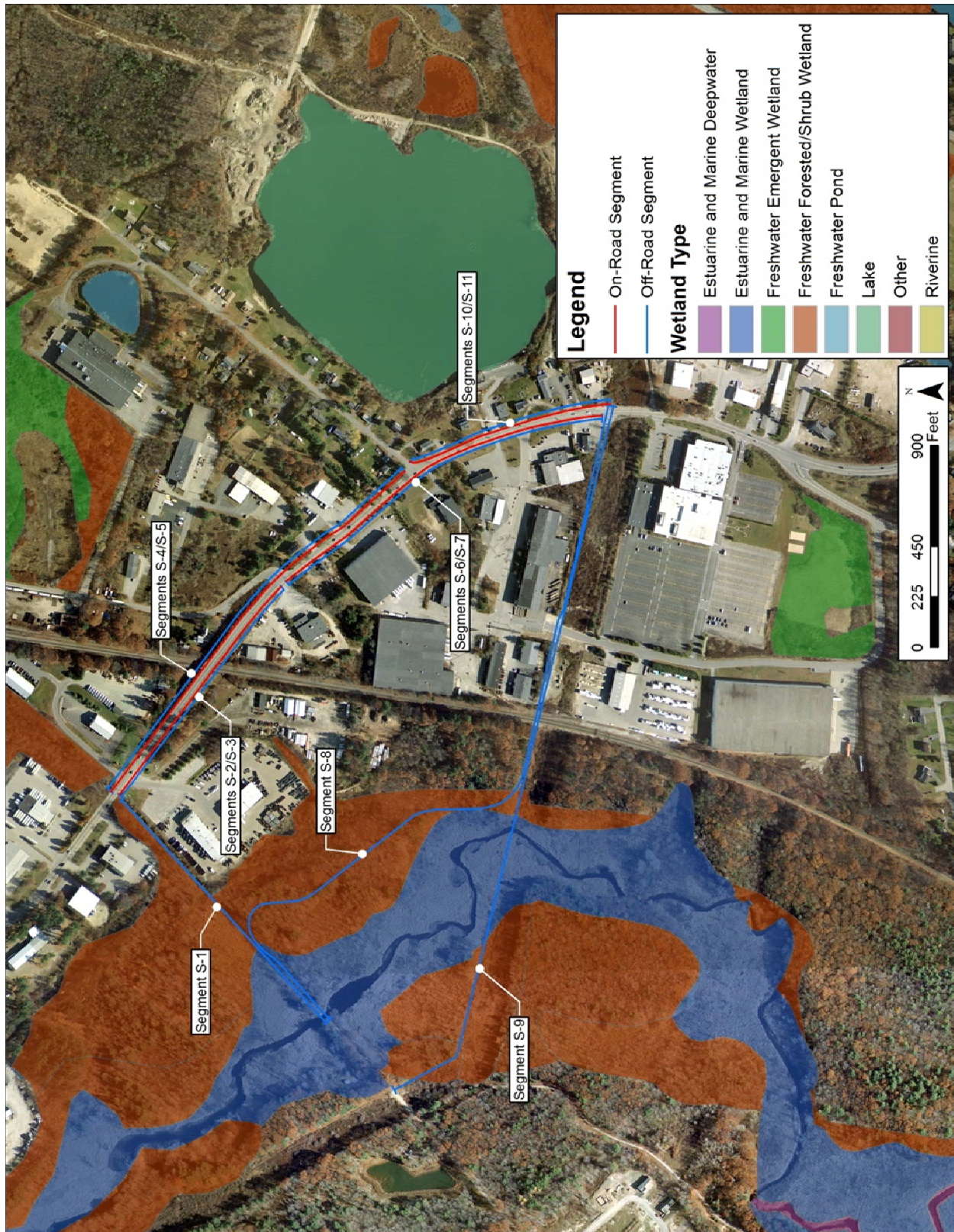
<sup>43</sup> This effort did not characterize the wetland impacts by WSS or TWWH.

<sup>44</sup> Town of Scarborough. *Alternatives Analysis for the Eastern Trail Nonesuch River Crossing, Scarborough, Maine*. Prepared by Normandeau Associates, Inc. November 2010.

<sup>45</sup> Stacie Grove, NewEarth Ecological Consulting, LLC. *Wetland Delineation and Waterbody Identification Report, Eastern Trail Connector Project, Scarborough and South Portland, Maine*. November 26, 2013

<sup>46</sup> Stacie Grove, NewEarth Ecological Consulting, LLC, "ET - cursory winter wetland assessment", January 27, 2015.

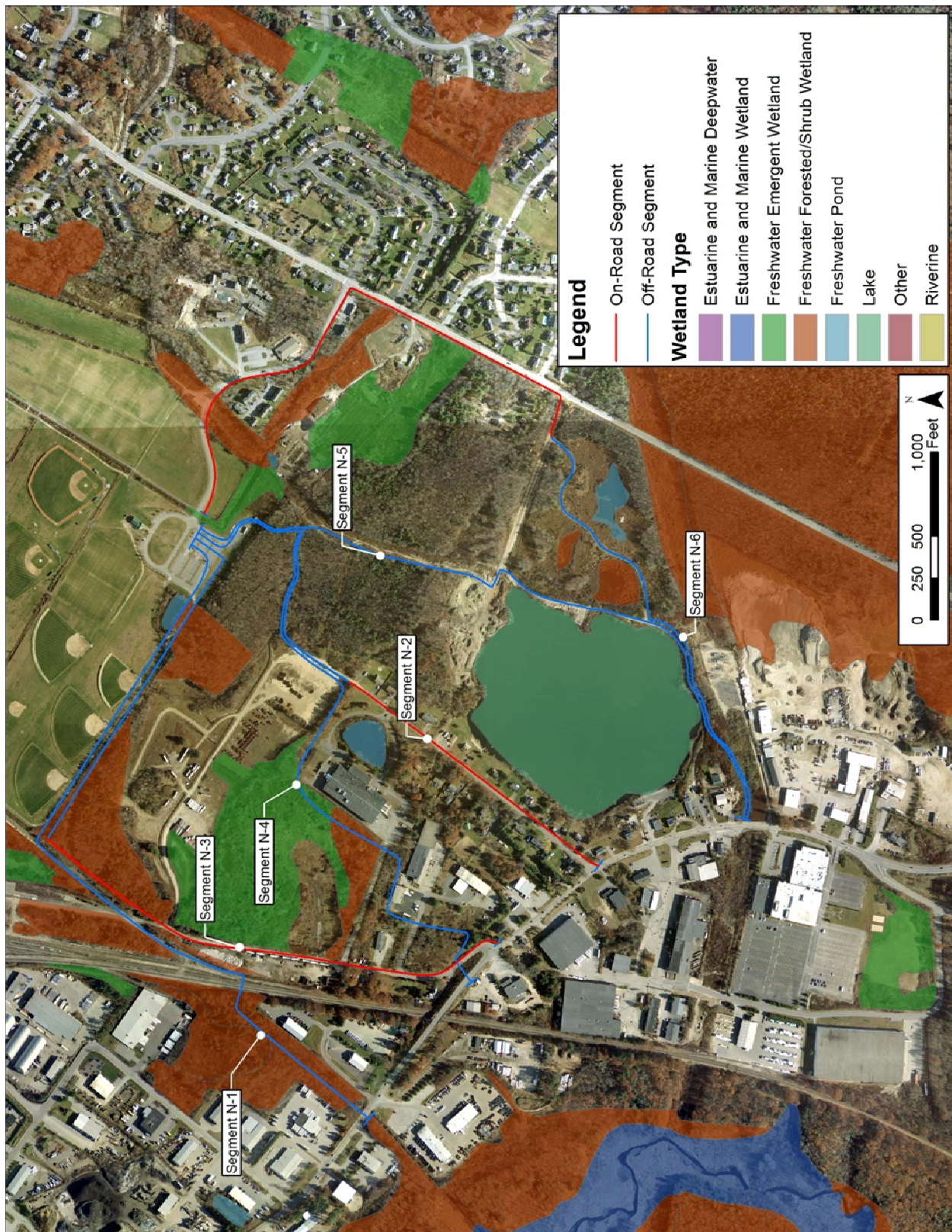




Note: Segment lines are diagrammatic only and do not represent engineered, scaled plans.

**Figure 4-4 NWI-Approximated Wetlands in the Southern Portion of the Study Area**

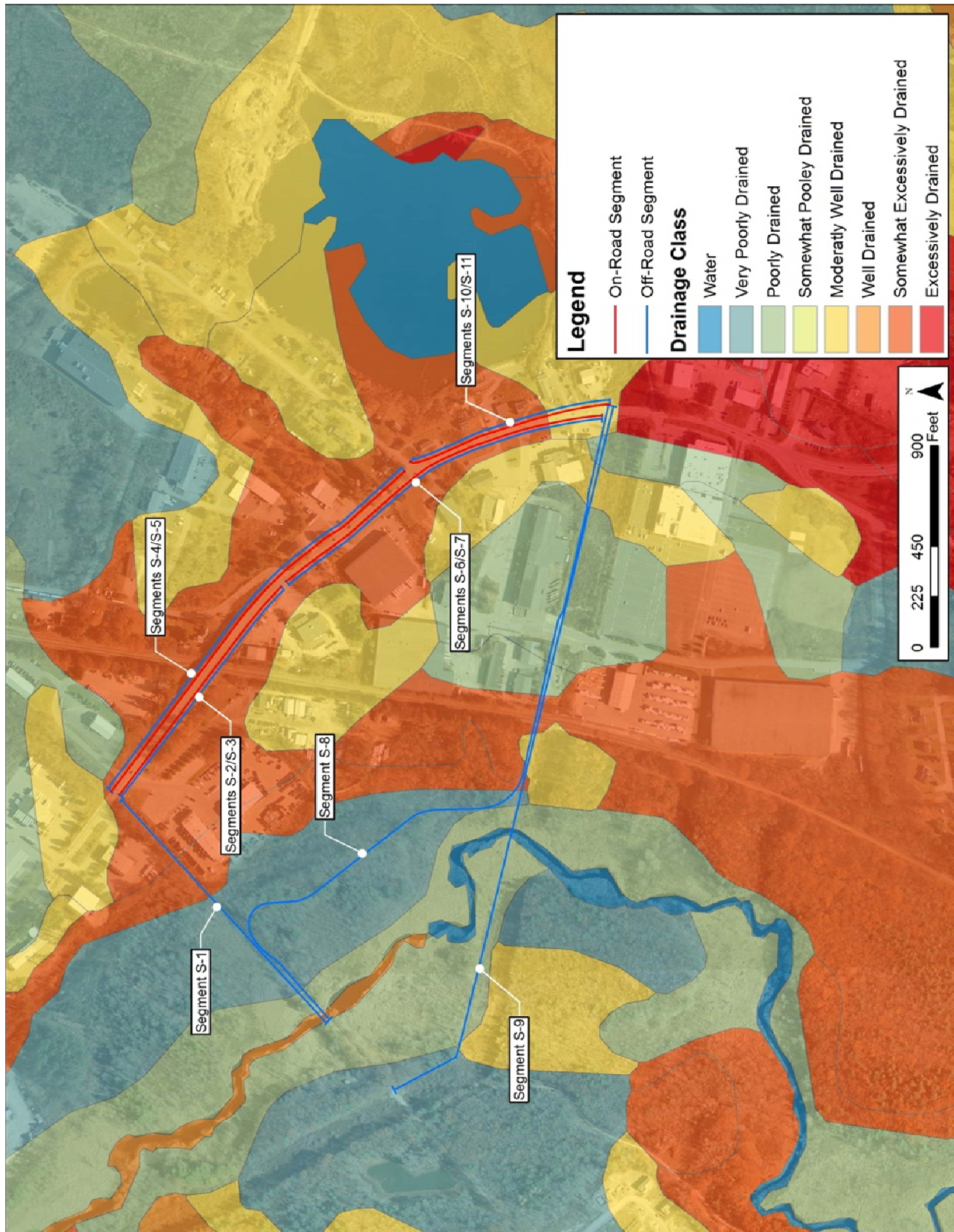




Note: Segment lines are diagrammatic only and do not represent engineered, scaled plans.

**Figure 4-5 NWI-Approximated Wetlands in the Northern Portion of the Study Area**

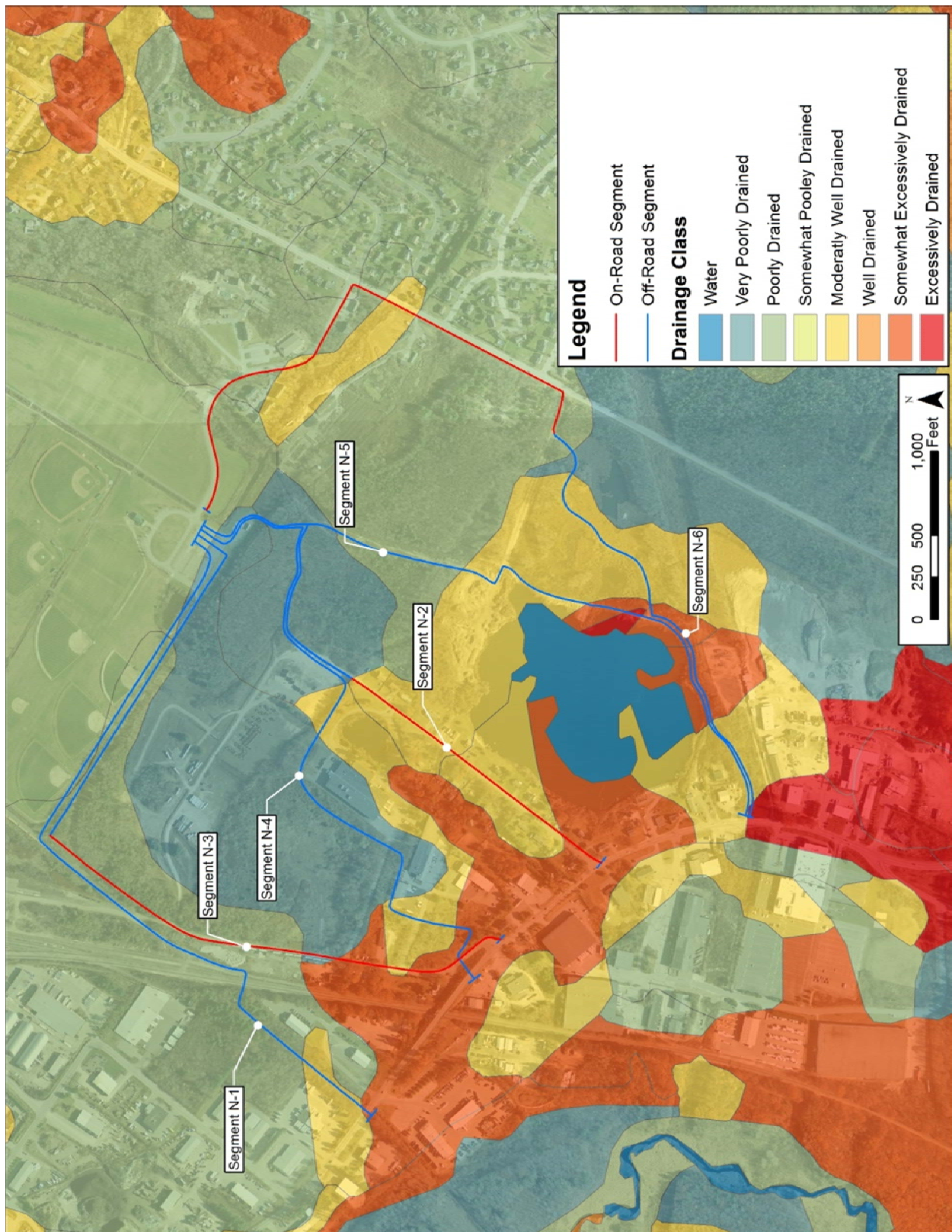




Note: Segment lines are diagrammatic only and do not represent engineered, scaled plans.

**Figure 4-6 Soil Drainage classifications in the Southern Portion of the Study Area**





Note: Segment lines are diagrammatic only and do not represent engineered, scaled plans.

**Figure 4-7 Soil Drainage Classifications in the Northern Portion of the Study Area**

#### **4.3.3.4 Notable Wildlife Habitat**

Notable wildlife habitat considers the segment's potential to impact habitats likely to support state or federally-listed species and areas designated as significant wildlife habitat, per USFWS, Maine Natural Areas Program (MNAP), and MaineIFW.

##### **4.3.3.4.1 Background and Discussion of Screening Factor**

Per consultation with state and federal natural resource agencies, it was determined that the project area falls within the range of two federal or state-listed species, and that potential habitat exists within the proposed project area for each: New England Cottontail (NEC), a State-listed endangered species; and, Northern Long Eared Bat (NLEB), a Federally-listed threatened species. Additionally, Tidal Waterfowl and Wading Bird Habitat, a MaineIFW-designated significant wildlife habitat, is associated with the floodplain of the Nonesuch River.<sup>47</sup> No federally-designated critical wildlife habitats occur in the project area.

NEC prefer dense shrubby thickets, with good interspersed of herbaceous vegetation, sapling trees (generally less than 10 feet tall), and shrub species (USFWS 2006). Based on a 2012 site visit with MaineIFW staff, most of habitat within the Central Maine Power utility corridor located to the south of Prout's Pond and to the east of Pleasant Hill Road contains what MaineIFW considers to be high to moderate quality habitat for NEC. Other areas of the site were evaluated and determined to be of low to moderate quality. A pellet survey was conducted by MaineIFW in the project area approximately five years ago. Preliminary results indicated that, while the project area includes habitat suitable for NEC, none were observed within the limits of the Scarborough Eastern Trail Connector Project.<sup>48</sup>

Forested areas of the project study area contain habitat potentially suitable as roosting habitat for NLEB. Suitable roost sites include snags and trees that are alive or dying with a diameter at breast height (DBH) of 3 inches or greater, and that exhibit any of the following characteristics: exfoliating bark, crevices, cavity, or cracks (USFWS 2014, 2015). Acoustical monitoring completed by biologists from the Maine Department of Transportation in 2015 found that, while the project area includes habitat suitable for NLEB, the monitoring did not record any bat calls attributed to the NLEB.

##### **4.3.3.4.2 Evaluation Criteria and Discussion of Initial Screening Results**

For each segment, the impact to potential NEC wildlife habitat was quantified by calculating the total area of shrub habitat clearing occurring within suitable NEC habitat areas (i.e., shrubby areas within the CMP utility corridor).

Similarly, for each segment the impact to potential habitat for the NLEB was quantified by calculating the area of clearing occurring within suitable roosting habitat for NLEB.

For each segment the impact to MaineIFW-designated significant wildlife habitat was quantified by calculating the area of potential clearing within the designated Tidal Waterfowl and Wading Bird Habitat area along the Nonesuch River area.

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<sup>47</sup> MaineIFW, Environmental Review of Fish and Wildlife Observations and Priority Habitat, Eastern Trail Scarborough to South Portland, 6/29/2012.

<sup>48</sup> Dan Bacon, Town of Scarborough, Personal E-mail Communication to Tim Cote, HNTB. September 25, 2013.



Similar to the results for wetland impact assessment, on-road segments would not affect habitats likely to support state or federally-listed species or areas designated by MaineIFW as significant wildlife habitat. Additionally, the No Build Alternative (the existing on-road Eastern Trail) would also not affect these habitats. Several proposed alignments include off-road segments which would affect areas of potentially suitable habitat for the NEC, NLEB, or are within areas designated as Tidal Waterfowl and Wading Bird Habitat.

#### **4.3.3.5 Engineering & Construction Feasibility**

Engineering and construction feasibility considers whether the segment would be feasible with respect to complexity of engineering design and construction, including the availability of adequate ROW. This factor also considers the construction cost of proposed bridge structures.

##### **4.3.3.5.1 Background and Discussion of Screening Factor**

Preliminary evaluations were completed to evaluate the feasibility of designing and constructing each trail segment. Since the construction of multi-use trail or widened shoulders at-grade would be feasible from an engineering and construction standpoint, this screening factor assessed the availability of ROW to construct the at-grade portions of the trail.

This screening factor also assessed the feasibility of designing and constructing bridge structures required for each segment, including whether additional ROW would be required for each structure and approach embankment. For each proposed bridge structure, conceptual and preliminary evaluations were completed to determine structure type, size and location. Where subsurface marine deposits were anticipated, considerations were given to the structural support of bridge foundations and approach embankments, as well as the potential for differential settlement of adjacent roadways and rail lines. Construction access and complexity, together with maintenance of traffic requirements, were also evaluated to assess the overall constructability of each structure. These preliminary evaluations were then used to develop preliminary quantities and construction cost estimates for each structure.

##### **4.3.3.5.2 Evaluation Criteria and Discussion of Initial Screening Results**

**Trail Construction.** Generally, the design and construction of off-road multi-use paths, separated multi-use paths, and sidepath facilities located on-grade would be feasible from an engineering and construction perspective. Adequate ROW exists for sidepath options. Additional ROW would be required for multi-use path options.

In cases where no additional ROW would be required, or where preliminary discussions with potentially effected landowners indicate additional ROW can be obtained easily in exchange for the fair market value of the property, “ROW Available” is noted in Tables 4-2 and 4-3. In the remaining locations, either no discussions with private landowners have taken place, or preliminary discussions have indicated that property rights would need to be acquired using eminent domain. These cases have been noted in Tables 4-2 and 4-3 as “Addtl ROW Req’d.”

The trail segments would include the construction of several small stream crossings that would likely include the installation of oversized and partially sunken culverts to provide a natural stream bottom. These crossings would not be complicated or complex, could be easily constructed, and would be cost-effective solutions. Therefore, they are determined to be feasible.

**Nonesuch River Crossing.** A proposed structure over the Nonesuch River would be required regardless of which alignment is selected. Two options were considered. For most alignments, the proposed crossing would be located where the abandoned Eastern Railroad corridor intersects with the Nonesuch River utilizing the former rail embankment and bridge abutments. For several alignments, the crossing would be located where CMP transmission line corridor intersects with the Nonesuch River and there is no former crossing or embankment available for re-use.

Option #1: Crossing at Eastern Railroad Corridor. At the crossing within the Eastern Railroad corridor, the original granite abutments for the previous railroad bridge remain in place, are in good condition, and are suitable for reuse with minimal modifications. The proposed crossing would consist of minor abutment modifications and construction of a new prefabricated pedestrian bridge atop the abutments. The northerly approach embankment would also be reconstructed. The required work would not be significantly complicated or complex, could be reasonably constructed, and would be a cost-effective solution. Therefore, the crossing of the Nonesuch River within the Eastern Railroad corridor was determined to be feasible.

Option #2: Crossing within CMP Corridor. At the crossing within the CMP transmission corridor no structures exist. A substantial structure would be required to span the Nonesuch River and its floodplain. Compared to Option #1, this crossing would be substantially larger, more complex, and would likely cost in excess of \$2.0 million to engineer and construct. This is significantly greater than the proposed crossing location which has an engineering and construction cost of approximately \$110,000. Therefore, the crossing of the Nonesuch River within the CMP transmission corridor was determined to be not feasible.

**Pan Am Railways Crossing.** A proposed structure over Pan Am Railways would be required regardless of which alignment is selected. Three options were considered. For most alignments, the proposed crossing would occur either at the railroad's intersection with the CMP transmission corridor, or at the railroad's intersection with Pleasant Hill Road where a roadway bridge exists today. For a few alignments, the crossing would be located near the railroad corridor's intersection with Rigby Road.

Option #1: Crossing within CMP Corridor. At the crossing within CMP's transmission corridor, preliminary discussions with CMP indicate that a structure would be allowed within a 15-foot-wide area located along the northern side of the CMP ROW. This will provide an approximate clearance of 35 feet between the proposed bridge and the nearest distribution line in CMP's corridor. An approximately 325 foot-long three-span prefabricated pedestrian bridge would be required. The approach embankments would be supported mainly by retaining walls to minimize ROW impacts. Soft marine deposits are present at the bridge site but, considering the approach embankments will be relatively small, no special design or construction measures would be required to mitigate the potential for slope instability or post-construction settlement. Utilities on site include aerial distribution and transmission lines that are not expected to pose a significant problem during construction.

The estimated construction cost for this crossing option would be \$1.66 million. The required work would not be significantly complicated or complex, could be reasonably constructed, and would be a relatively cost-effective solution, especially considering the other Pan-Am Railways crossing options. Therefore, crossing Pan Am Railways within the CMP transmission corridor was determined to be a feasible alternative.

Option #2: Crossing alongside Pleasant Hill Road. At the crossing alongside the existing Pleasant Hill Road Bridge, a stand-alone structure would be constructed adjacent to the south side of the existing roadway. An approximately 130 foot-long single-span prefabricated pedestrian bridge would be required.

The proposed bridge will include relatively long, steep approaches with grades of 5 to 8 percent. Bicyclists descending the approaches could reach high rates of speed but would not normally be required to stop at driveway crossings. Vehicles entering or exiting the adjacent driveways at either end of the approaches will be required yield to bicyclist. Failure to do so could result in collisions between bicyclists and trial users. As noted in the AASHTO Guide, drivers often have the false expectation that bicyclists are required to stop at driveway openings, or do not see contraflow bicyclists, which leads to collisions. This common safety problem is noted in the AASHTO Guide as a potential operational and safety issue that requires careful consideration (see Figure 4-3). The steep grade associated with the bridge approaches serve to worsen this already common safety problem.

The approach embankments for the proposed bridge would be supported mainly by retaining walls to minimize ROW impacts. Construction of the trail and associated retaining walls would require relocating eight utility poles, each supporting a significant number of aerial lines, prior to the start of work. These aerial lines would need to be relocated to the opposite side of the roadway where an existing water main already exists (creating a conflict), or additional ROW would be required to place the utility lines adjacent to the new bridge and approaches.

Once the utilities are relocated temporary sheeting and shoring would be installed along the edge of roadway for nearly the full length of the approach embankment. Once installed, the existing side-slopes would be substantially excavated to provide the required clearances for construction of the retaining walls and associated reinforced soil mass. Given the expected depth of excavation the temporary earth support system would likely need to be supported by tie-backs into the existing embankment further complicating construction.

Subsurface marine deposits are also present at this location and, considering the proximity of the proposed construction to existing rail lines, structures, and active roadways, lightweight fill would likely be required at the west approach to mitigate the potential for slope instability and differential settlement.

At both ends of the bridge approaches the trail would be required to transition further away from the edge of roadway to provide necessary clearances to guardrail end treatments. This will push the trail into existing large commercial driveway entrances/parking areas and will require additional ROW for construction. At least one abutting landowner affected by the bridge work is strongly opposed to the trail crossing their commercial driveway citing safety concerns associated with conflicts between trial users and trucking operations.

The design and construction of this option would be complex. The project site presents significant constraints including adjacent buildings, the existing highway bridge, steep slopes, the rail corridor, aerial utility lines, and the busy roadway. Additionally, a large portion of the project would likely need to be constructed as night work since daytime traffic volumes on Pleasant Hill Road preclude the installation of daytime lane closures on the existing bridge and approaches. Lane closures on the bridge will likely be required for construction access during activities such as driving and pulling sheet piles, concrete placements, bridge erection, and some material deliveries. The large percentage of night work associated with this option, and the requirement to complete the work immediately adjacent to a busy roadway, causes this option to have an increases possibility of work zone accidents compared to other crossing alternatives.

The construction of the proposed pedestrian bridge immediately adjacent to the existing roadway bridge would also present increased risk to the contractor, owner, and the traveling public compared to other crossing alternatives. The existing bridge includes mechanically stabilized earth (MSE) retaining walls that rely on a reinforced soil mass to support the bridge abutments. The installation of the sheeting and shoring system required to construct this project, maintain the integrity of the existing MSE retaining walls, and support the active roadway embankment, will need to be field located, installed and braced

with significant care. Errors during layout or construction could potentially damage the existing bridge retaining walls or lead to loss of support of the bridge foundations and/or highway embankment.

Together, these factors result in substantial constructability challenges, concerns and risks for this crossing location. As a result, the construction of this option will take longer than the other crossing alternatives, the construction cost will be substantial, and contractors will likely inflate their bid prices to account for risk and potential construction delays.

The estimated construction cost for this crossing option would be \$2.04 Million. However, considering the construction risk associated with this option, actual bid pricing could vary from this initial estimate.

Considering the above a crossing of Pan Am Railways adjacent to the existing Pleasant Hill Road Bridge is judged to be not feasible.

Option #3: Crossing at Rigby Road. At the crossing near the intersection with Rigby Road, a preliminary evaluation determined that no reasonable design solution existed. At this location, two distinct bridge crossings would be required – one over Pan Am Railway’s mainline tracks, and a second structure over a separate spur line. The two structures would also need to be connected by a linking bridge structure or an approach embankment supported by retaining walls. As a result, constructing a crossing at this location would be significantly more expensive than either of the other two potential crossing locations. Therefore, the crossing of Pan Am Railways near the intersection with Rigby Road was judged to be impractical.

#### **4.3.3.6      *Functionality / Suitability for all Modes and Users***

Functionality/Suitability for all Modes and Users considers whether the segment can be utilized by multiple user groups. In this evaluation, the functionality / suitability of the trail for all users does not consider trail users with physical disabilities since this metric is evaluated separately under the ADA compliance / accessibility screening factor.

##### **4.3.3.6.1    Background and Discussion of Screening Factor**

According to a FHWA report, user conflicts on trails are the result of differences in skill, movement patterns, and speed. The greater the differences, the more likely an accident will occur. Different user groups have dissimilar movement patterns (i.e., rollerbladers need more space for their movements than bicyclists and walkers). Issues related to shared-use paths and safety incidents include: (1) collisions or users attempting to avoid potential collisions, (2) unsafe user behavior, (3) low-level user skill or poor user judgment, (4) dangerous conditions on the trail such as rain, snow, or physical obstacles (5) poor trail design, construction, or maintenance, and (6) speed of bike users.

To meet the purpose and need of the project, the proposed trail design will be developed with consideration given to the full spectrum of trail user age and ability, while accommodating four-season use (bicyclists, pedestrians, snowshoeing, cross-country skiers, etc.).

Basic conflicts will be reduced by ensuring that the shared-use path provides sufficient width and an appropriate surface for all users. FHWA guidance recommends a trail width of 10 feet, preferably 12 feet. Additionally, shared use paths should also have 2-foot graded areas on either side of the path.



#### **4.3.3.6.2 Evaluation Criteria and Discussion of Initial Screening Results**

The functionality and suitability of the proposed trail segment for all modes and users will be evaluated based on how well the resulting facility would accommodate all users and minimize the user conflicts noted above.

Generally, the nature of sidepath facilities does not allow them to accommodate all modes and users. These facilities are relatively narrow in width (5-6 feet proposed for this project, and oftentimes, trail users need to enter the adjacent roadway travelway to pass one another. In addition, bicyclists are required to travel with the direction of traffic, while pedestrians typically travel against the direction of traffic, which creates additional movement conflicts. Considering these conflicts, and the requirement for trail users to walk immediately adjacent to traffic, sidepath facilities are not well suited for users who cannot quickly respond to changes in their surroundings, which would include users with young children, users with reduced mobility, and the elderly.

Winter roadway maintenance activities will affect the functionality of sidepath facilities and, to a lesser degree, separated multi-use path facilities. The resulting plowed surfaces and windrows of snow resulting from plowing operations create conditions that are not suitable for some modes such as cross-country skiing and snowshoeing. Reduced shoulder widths and snow banks result in additional challenges for pedestrians.

Therefore, sidepaths would not provide a functional and suitable facility for all modes and users.

New separated and off-road shared use path facilities would be designed and constructed to accommodate all modes and users to the extent practical. However, roadway and driveway crossings will present challenges for winter users and those with children or mobility impairments. Therefore, for each segment, a qualitative assessment has been made regarding how well it would meet the project purpose of providing a facility that is suitable for all users and modes.

#### **4.3.3.7 Trail Characteristics / Quality / Usage**

##### **4.3.3.7.1 Background and Discussion of Screening Factor**

This screening factor is a measure of how well each segment would meet the overall project purpose of providing a multi-use trail connection that provides a quiet and safe route for users, access to areas of natural significance and scenic beauty, and a quality experience to its users. This screening factor also assesses the relative usage of each trail segment considering the preceding factors.

##### **4.3.3.7.2 Evaluation Criteria and Discussion of Initial Screening Results**

Each segment was evaluated quantitatively with respect to the portion of the segment located along a roadway, adjacent to a roadway, or in a natural setting. Qualitative assessments were then made regarding the resulting user experience and the overall usage each segment would be expected to receive. Generally, trail segments located off-road in natural settings would receive the highest usage while trail segments located along roadways would receive the lowest usage.

#### 4.3.4 Screening Results

Table 4-2 and Table 4-3 present the screening of the initial alternative segments, as summarized from the previous studies<sup>49</sup> and this most recent evaluation. Table 4-2 presents the screening summary for Segments S-1 through S-11. Table 4-3 presents the screening summary for Segments N-1 through N-6.<sup>50</sup>

Following the initial screening of the 17 segments for consistency with the overall project purpose, seven segments were found to meet the overall project purpose. The remaining ten segments, which do not meet the overall project purpose, are identified with red text in Table 4-2 and Table 4-3. Alignments which would include any of these ten segments were dismissed from further consideration because they would not meet the overall project purpose.

Table 4-4 lists the 19 alternative alignments that can be developed from the 17 individual southern and northern segments. The table includes the individual segments that make up each alignment, and presents a summary evaluation of each alignment based on its feasibility and whether it meets the overall project purpose. A review of these 19 overall trail alignments was completed based on the ten trail segments meeting the overall project purpose. This review determined that two of the 19 alignments included only segments that were determined to meet the overall project purpose. These two alignments were advanced through a more detailed analysis.

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<sup>49</sup> ETMD. Eastern Trail: Scarborough to South Portland Connector, Final Report. Prepared by Wilbur Smith Associates, September 2006.

<sup>50</sup> Table 4-2 and Table 4-3 present approximated impacts.

Table 4-2 Summary of Initial Alternatives Screening – Southern of Trail

Segment Description				Evaluation Criteria							
I.D.	From - To	Length	Facility Type	Public Safety	Accessibility / ADA Compliance	Waters and Wetlands	Notable Wildlife Habitat	Engineering & Construction Feasibility	Functionality / Suitability for all modes and users*	Trail Characteristics / Quality / Usage	Meets Overall Project Purpose?
S-1	Nonesuch River to Pleasant Hill Road via old Eastern Railroad Corridor	1,400 LF	Off-Road Shared Use Path	Length in Rdwy Shoulder (L.F): 0 Road Vol./Speed (vpd/mpg): N/A No. Roadway Crossings: 0 No. Driveway Crossings: 0	ADA compliant facility	Wetland Impacts (Acres): 0.11 New stream crossings: 0 Modify Exist stream crossing: 1 No. vernal pools impacted: Unknown	NLEB Suitable Habitat Impacts (Acres): 0.34 NEC Suitable Habitat Impacts (Acres): 0 TWWH Habitat Impacts (Acres): 0	Feasibility: Good Bridge Constr. Cost: \$0.10 M Complexity: Low Right-of-Way: Available	Suitable for all modes.  Suitable for all users.	Mostly located within a natural setting Entirely off-road facility Good user experience High segment usage expected	Yes
S-2	Old Eastern RR Corridor to Rigby Road via Pleasant Hill Road	1,200 LF	Separated Shared Use Path Located along Pleasant Hill Road	Length in Rdwy Shoulder (L.F): 0 Road Vol./Speed (vpd/mpg): 11,850 / 35 No. Roadway Crossings: 1 No. Driveway Crossings: 2	ADA compliant facility	Wetland Impacts (Acres): 0 New stream crossings: 0 Modify Exist stream crossing: 0 No. vernal pools impacted: 0	NLEB Suitable Habitat Impacts (Acres): 0 NEC Suitable Habitat Impacts (Acres): 0 TWWH Habitat Impacts (Acres): 0	Feasibility: Not Feasible Bridge Constr. Cost: \$2.04 M Complexity: High Right-of-Way: Add'l ROW Req'd	Suitable for most modes. Roadway and driveway crossings not ideal for winter use.  Suitable for all users. Young children will require close supervision at crossings	Located alongside roadway Separated on-road facility Moderate user experience Moderate segment usage expected	Yes
S-3	Eastern RR ROW to Rigby Road via Pleasant Hill Road	1,200 LF	Sidepath Located in shoulders of Pleasant Hill Rd	Length in Rdwy Shoulder (L.F): 1,200 Road Vol./Speed (vpd/mpg): 11,850 / 35 No. Roadway Crossings: 1 No. Driveway Crossings: 2	Does not meet ADA standards	Wetland Impacts (Acres): 0 New stream crossings: 0 Modify Exist stream crossing: 0 No. vernal pools impacted: 0	NLEB Suitable Habitat Impacts (Acres): 0 NEC Suitable Habitat Impacts (Acres): 0 TWWH Habitat Impacts (Acres): 0	Feasibility: Good Bridge Constr. Cost: N/A Complexity: Low Right-of-Way: Available	Not suitable for all modes.  Not suitable for young or inexperienced users	Located in a roadway setting Entirely on-road facility Poor user experience Very low segment usage expected	No
S-4	Eastern RR ROW to Pond View Drive via Pleasant Hill Road	2,000 LF	Sidepath Located in shoulders of Pleasant Hill Rd	Length in Rdwy Shoulder (L.F): 2,000 Road Vol./Speed (vpd/mpg): 11,850 / 35 No. Roadway Crossings: 2 No. Driveway Crossings: 6	Does not meet ADA standards	Wetland Impacts (Acres): 0 New stream crossings: 0 Modify Exist stream crossing: 0 No. vernal pools impacted: 0	NLEB Suitable Habitat Impacts (Acres): 0 NEC Suitable Habitat Impacts (Acres): 0 TWWH Habitat Impacts (Acres): 0	Feasibility: Good Bridge Constr. Cost: N/A Complexity: Low Right-of-Way: Available	Not suitable for all modes.  Not suitable for young or inexperienced users	Located in a roadway setting Entirely on-road facility Poor user experience Very low segment usage expected	No
S-5	Eastern RR ROW to Pond View Drive via Pleasant Hill Road	2,000 LF	Separated Shared Use Path Located along Pleasant Hill Road	Length in Rdwy Shoulder (L.F): 0 Road Vol./Speed (vpd/mpg): 11,850 / 35 No. Roadway Crossings: 2 No. Driveway Crossings: 6	ADA compliant facility	Wetland Impacts (Acres): 0 New stream crossings: 0 Modify Exist stream crossing: 0 No. vernal pools impacted: 0	NLEB Suitable Habitat Impacts (Acres): 0 NEC Suitable Habitat Impacts (Acres): 0 TWWH Habitat Impacts (Acres): 0	Feasibility: Not Feasible Bridge Constr. Cost: \$2.04 M Complexity: High Right-of-Way: Add'l ROW Req'd	Suitable for most modes. Roadway and driveway crossings not ideal for winter use.  Suitable for all users. Young children will require close supervision at crossings	Located alongside roadway Separated on-road facility Moderate user experience Moderate segment usage expected	Yes
S-6	Rigby Road to Central Maine Power (CMP) ROW via Pleasant Hill Road	1,600 LF	Separated Shared Use Path Located along Pleasant Hill Road	Length in Rdwy Shoulder (L.F): 0 Road Vol./Speed (vpd/mpg): 11,850 / 35 No. Roadway Crossings: 2 No. Driveway Crossings: 14	ADA compliant facility	Wetland Impacts (Acres): 0 New stream crossings: 0 Modify Exist stream crossing: 0 No. vernal pools impacted: 0	NLEB Suitable Habitat Impacts (Acres): 0 NEC Suitable Habitat Impacts (Acres): 0 TWWH Habitat Impacts (Acres): 0	Feasibility: Good Bridge Constr. Cost: N/A Complexity: Low Right-of-Way: Add'l ROW Req'd	Suitable for most modes. Roadway and driveway crossings not ideal for winter use.  Suitable for all users. Young children will require close supervision at crossings	Located alongside roadway Separated on-road facility Moderate user experience Moderate segment usage expected	Yes
S-7	Rigby Road to CMP ROW via Pleasant Hill Road	1,600 LF	Sidepath Located in shoulders of Pleasant Hill Rd	Length in Rdwy Shoulder (L.F): 1,600 Road Vol./Speed (vpd/mpg): 11,850 / 35 No. Roadway Crossings: 2 No. Driveway Crossings: 4	Does not meet ADA standards	Wetland Impacts (Acres): 0 New stream crossings: 0 Modify Exist stream crossing: 0 No. vernal pools impacted: 0	NLEB Suitable Habitat Impacts (Acres): 0 NEC Suitable Habitat Impacts (Acres): 0 TWWH Habitat Impacts (Acres): 0	Feasibility: Good Bridge Constr. Cost: N/A Complexity: Low Right-of-Way: Available	Not suitable for all modes.  Not suitable for young or inexperienced users	Located in a roadway setting Entirely on-road facility Poor user experience Very low segment usage expected	No
S-8	North of Nonesuch River to Pleasant Hill Road via Sanborn parcel & CMP utility ROW	3,800 LF	Off-Road Shared Use Path	Length in Rdwy Shoulder (L.F): 0 Road Vol./Speed (vpd/mpg): N/A No. Roadway Crossings: 2 No. Driveway Crossings: 0	ADA compliant facility	Wetland Impacts (Acres): 0.37 New stream crossings: 0 Modify Exist stream crossing: 1 No. vernal pools impacted: 0	NLEB Suitable Habitat Impacts (Acres): 0.80 NEC Suitable Habitat Impacts (Acres): 0.19 TWWH Habitat Impacts (Acres): 0	Feasibility: Moderate Bridge Constr. Cost: \$1.66 M Complexity: Low Right-of-Way: Available	Suitable for all modes.  Suitable for all users.	Mostly located within a natural setting Entirely off-road facility Good user experience High segment usage expected	Yes
S-9	South of Nonesuch River to Pleasant Hill Road via CMP utility ROW	3,300 LF	Off-Road Shared Use Path	Length in Rdwy Shoulder (L.F): 0 Road Vol./Speed (vpd/mpg): N/A No. Roadway Crossings: 2 No. Driveway Crossings: 0	ADA compliant facility	Wetland Impacts (Acres): 1.01 (est.) New stream crossings: 1 Modify Exist stream crossing: 0 No. vernal pools impacted: Unknown	NLEB Suitable Habitat Impacts (Acres): 0.43 NEC Suitable Habitat Impacts (Acres): 1.08 TWWH Habitat Impacts (Acres): 0	Feasibility: Not Feasible Bridge Constr. Cost: > \$2.0 M Complexity: High Right-of-Way: Add'l ROW Req'd	Suitable for all modes.  Suitable for all users.	Mostly located within a natural setting Entirely off-road facility Good user experience High segment usage expected	Yes
S-10	Pleasant Hill Road @CMP ROW to Pond View Drive via Pleasant Hill Road	1,000 LF	Sidepath	Length in Rdwy Shoulder (L.F): 1,000 Road Vol./Speed (vpd/mpg): 11,850 / 35 No. Roadway Crossings: 8 No. Driveway Crossings: 0	Does not meet ADA standards	Wetland Impacts (Acres): 0 New stream crossings: 0 Modify Exist stream crossing: 0 No. vernal pools impacted: 0	NLEB Suitable Habitat Impacts (Acres): 0 NEC Suitable Habitat Impacts (Acres): 0 TWWH Habitat Impacts (Acres): 0	Feasibility: Good Bridge Constr. Cost: N/A Complexity: Low Right-of-Way: Available	Not suitable for all modes.  Not suitable for young or inexperienced users	Located in a roadway setting Entirely on-road facility Poor user experience Very low segment usage expected	No
S-11	Pleasant Hill Road @ CMP ROW to Pond View Drive via Pleasant Hill Road	1,000 LF	Separated Shared Use Path Located along Pleasant Hill Road	Length in Rdwy Shoulder (L.F): 0 Road Vol./Speed (vpd/mpg): 11,850 / 35 No. Roadway Crossings: 8 No. Driveway Crossings: 0	ADA compliant facility	Wetland Impacts (Acres): 0 New stream crossings: 0 Modify Exist stream crossing: 0 No. vernal pools impacted: 0	NLEB Suitable Habitat Impacts (Acres): 0 NEC Suitable Habitat Impacts (Acres): 0 TWWH Habitat Impacts (Acres): 0	Feasibility: Good Bridge Constr. Cost: N/A Complexity: Low Right-of-Way: Available	Suitable for most modes. Roadway and driveway crossings not ideal for winter use.  Suitable for all users. Young children will require close supervision at crossings	Located alongside roadway Separated on-road facility Moderate user experience Moderate segment usage expected	Yes

More Desirable

Less Desirable

Table 4-3      Summary of Initial Alternatives Screening – Northern Portion of Trail

Segment Description				Evaluation Criteria							
I.D.	From - To	Length	Facility Type	Public Safety	Accessibility / ADA Compliance	Waters and Wetlands	Notable Wildlife Habitat	Engineering & Construction Feasibility	Functionality / Suitability for all modes and users*	Trail Characteristics / Quality / Usage	Meets Overall Project Purpose?
N-1	Pleasant Hill Road to Wainwright Rec. Complex (WRC) via RR Corridor and Water District ROW	4,800 LF	Off-Road Shared Use Path	Length in Rdwy Shoulder (L.F): 0 Road Vol. / Speed (vpd / mph): N/A No. Roadway Crossings: 2 No. Driveway Crossings: 0	Does not meet ADA standards	Wetland Impacts (Acres): Unknown New stream crossings: 1 Modify Exist stream crossing: 0 No. vernal pools impacted: Unknown	NLEB Suitable Habitat Impacts (Acres): 1.06 NEC Suitable Habitat Impacts (Acres): 0 TWWH Habitat Impacts (Acres): 0	Feasibility: Good Bridge Constr. Cost: >\$2.00 M Complexity: High Right-of-Way: Not Available	Suitable for all modes.  Suitable for all users.	Partially located within a natural setting Entirely off-road facility Moderate user experience Moderate segment usage expected	Yes
N-2	Pleasant Hill Road @ Pond View Drive to WRC via Pond View Drive & Old Bog Road	3,700 LF	Sidepath at Pond View Drive for 1,900 ft. Off-Road Shared Use Path at Old Bog Road	Length in Rdwy Shoulder (L.F): 1,900 Road Vol. / Speed (vpd / mph): <1,000 / 25 No. Roadway Crossings: 1 No. Driveway Crossings: 14	Does not meet ADA standards	Wetland Impacts (Acres): 0.17 New stream crossings: 2 Modify Exist stream crossing: 0 No. vernal pools impacted: 0	NLEB Suitable Habitat Impacts (Acres): 0.65 NEC Suitable Habitat Impacts (Acres): 0 TWWH Habitat Impacts (Acres): 0	Feasibility: Good Bridge Constr. Cost: N/A Complexity: Low Right-of-Way: Add'l ROW Req'd	Not suitable for all modes.  Not suitable for young or inexperienced users	Partially located in a roadway setting 1,900 L.F. (53%) is on-road facility Moderate user experience Moderate segment usage expected	No
N-3	Pleasant Hill Road @ Rigby Road to WRC via Rigby Road	5,200 LF	Sidepath at Rigby Road and along active RR line for 2,250 ft. Off-Road Shared Use Path Elsewhere	Length in Rdwy Shoulder (L.F): 2,250 Road Vol. / Speed (vpd / mph): <1,000 / 25 No. Roadway Crossings: 2 No. Driveway Crossings: 3	Does not meet ADA standards	Wetland Impacts (Acres): Unknown New stream crossings: 1 Modify Exist stream crossing: 0 No. vernal pools impacted: Unknown	NLEB Suitable Habitat Impacts (Acres): 0.55 NEC Suitable Habitat Impacts (Acres): 0 TWWH Habitat Impacts (Acres): 0	Feasibility: Good Bridge Constr. Cost: N/A Complexity: Low Right-of-Way: Add'l ROW Req'd	Not suitable for all modes.  Not suitable for young or inexperienced users	Partially located in an industrial setting 2,250 L.F. (43%) is on-road facility Poor user experience Poor segment usage expected	No
N-4	Pleasant Hill Road @ Rigby Road to WRC via industrial properties and Old Bog Road	4,400 LF	Off-Road Shared Use Path	Length in Rdwy Shoulder (L.F): 0 Road Vol. / Speed (vpd / mph): N/A No. Roadway Crossings: 4 No. Driveway Crossings: 0	ADA compliant facility	Wetland Impacts (Acres): ≥0.17 New stream crossings: 2 Modify Exist stream crossing: 0 No. vernal pools impacted: Unknown	NLEB Suitable Habitat Impacts (Acres): 0.64 NEC Suitable Habitat Impacts (Acres): 0 TWWH Habitat Impacts (Acres): 0	Feasibility: Good Bridge Constr. Cost: N/A Complexity: Low Right-of-Way: Add'l ROW Req'd	Suitable for all modes.  Suitable for all users.	Mostly located within a natural setting Entirely off-road facility Good user experience High segment usage expected	Yes
N-5	Pleasant Hill Road @ CMP Corridor to WRC via CMP ROW east and north of Prout's Pond	4,300 LF	Off-Road Shared Use Path	Length in Rdwy Shoulder (L.F): 0 Road Vol. / Speed (vpd / mph): N/A No. Roadway Crossings: 1 No. Driveway Crossings: 1	ADA compliant facility	Wetland Impacts (Acres): 0.15 New stream crossings: 3 Modify Exist stream crossing: 1 No. vernal pools impacted: 0	NLEB Suitable Habitat Impacts (Acres): 0.23 NEC Suitable Habitat Impacts (Acres): 0.68 TWWH Habitat Impacts (Acres): 0	Feasibility: Good Bridge Constr. Cost: N/A Complexity: Low Right-of-Way: Available	Suitable for all modes.  Suitable for all users.	Mostly located within a natural setting Entirely off-road facility Good user experience High segment usage expected	Yes
N-6	Pleasant Hill Road @ CMP Corridor to WRC via CMP ROW, Maine Turnpike ROW, and Highland Avenue	6,300 LF	Separated Shared Use Path along Highland & Maletta for 3,650 ft. Off-Road Shared Use Path Elsewhere	Length in Rdwy Shoulder (L.F): 0 Road Vol. / Speed (vpd / mph): 6,220 / 45 No. Roadway Crossings: 6 No. Driveway Crossings: 3	ADA compliant facility	Wetland Impacts (Acres): 0.09 New stream crossings: 0 Modify Exist stream crossing: 1 No. vernal pools impacted: 0	NLEB Suitable Habitat Impacts (Acres): 0.44 NEC Suitable Habitat Impacts (Acres): 0.62 TWWH Habitat Impacts (Acres): 0	Feasibility: Good Bridge Constr. Cost: N/A Complexity: Low Right-of-Way: Available	Suitable for most modes. Roadway and sidewalk usage not ideal for winter use.  Suitable for all users. Young children will require close supervision at crossings	Partially located in a roadway setting 3,650 L.F. is separated on-road facility Moderate user experience Moderate segment usage expected	Yes
<div> <div>More Desirable</div> <div>Less Desirable</div> </div>											



**Table 4-4 Potential Alternative Alignments**

Alignment Description		Are all Segments Feasible and Meet Project Purpose?	Proceed to Detailed Analysis?
I.D.	End-to-End Segments		
A	S-1→N-1	No. A feasible crossing of Pan-Am's rail lines does not exist on this alignment.	No
B	S-1→S-2→N-3	No. Constructing a separated multi-use trail over Pan-Am's rail lines and alongside Pleasant Hill Road is not feasible. In addition, sharing the travel lane on Riby Road with heavy industrial usage and on-street truck parking is incompatible for trail users and results in a facility that is not entirely ADA compliant.	No
C	S-1→S-2→N-4	No. Constructing a separated multi-use trail over Pan-Am's rail lines and alongside Pleasant Hill Road is not feasible.	No
D	S-1→S-3→N-3	No. Locating the trail in the shoulders of Pleasant Hill Road, and in the travel way of Rigby Road, presents significant safety concerns, results in a facility that is not ADA compliant, and is incompatible for all trail uses and modes.	No
E	S-1→S-3→N-4	No. Locating the trail in the shoulders of Pleasant Hill Road presents significant safety concerns, results in a facility that is not ADA compliant, and is incompatible for all trail uses and modes.	No
F	S-1→S-2→S-6→N-5	No. Constructing a separated multi-use trail over Pan-Am's rail lines and alongside Pleasant Hill Road is not feasible.	No
G	S-1→S-3→S-7→N-5	No. Locating the trail in the shoulders of Pleasant Hill Road presents significant safety concerns, results in a facility that is not ADA compliant, and is incompatible for all trail uses and modes.	No
H	S-1→S-2→S-6→N-6	No. Constructing a separated multi-use trail over Pan-Am's rail lines and alongside Pleasant Hill Road is not feasible.	No
I	S-1→S-3→S-7→N-6	No. Locating the trail in the shoulders of Pleasant Hill Road presents significant safety concerns, results in a facility that is not ADA compliant, and is incompatible for all trail uses and modes.	No
J	S-4→N-2	No. Locating the trail in the shoulders of Pleasant Hill Road presents significant safety concerns, results in a facility that is not ADA compliant, and is incompatible for all trail uses and modes. In addition, sharing the travel lane on Pond View Drive is incompatible for most trail users and modes and results in a facility that is not entirely ADA compliant.	No
K	S-5→N-2	No. Constructing a separated multi-use trail over Pan-Am's rail lines and alongside Pleasant Hill Road is not feasible. In addition, sharing the travel lane on Pond View Drive is incompatible for most trail users and modes and results in a facility that is not entirely ADA compliant.	No
L	S-8→N-5	Yes. However, wetland impacts for this alignment are higher than most others.	Yes
M	S-8→N-6	Yes. However, the two crossings of Highland Avenue (a high-volume roadway with posted speed of 40 mph), and locating the trail alongside Highland Avenue, presents a hazard to trail users. However, wetland impacts for this alignment are higher than most others.	Yes
N	S-8→S-10→N-2	No. Locating the trail in the shoulders of Pleasant Hill Road presents significant safety concerns, results in a facility that is not ADA compliant, and is incompatible for all trail uses and modes. In addition, sharing the travel lane on Pond View Drive is incompatible for most trail users and modes and results in a facility that is not entirely ADA compliant.	No
O	S-8→S-11→N-2	No. Sharing the travel lane on Pond View Drive is incompatible for most trail users and modes and results in a facility that is not entirely ADA compliant.	No
P	S-9→N-5	No. A feasible crossing of the Nonesuch River and associated marsh areas does not exist on this alignment.	No
Q	S-9→N-6	No. A feasible crossing of the Nonesuch River and associated marsh areas does not exist on this alignment.	No
R	S-9→S-10→N-2	No. A feasible crossing of the Nonesuch River and associated marsh areas does not exist on this alignment.	No
S	S-9→S-11→N-2	No. A feasible crossing of the Nonesuch River and associated marsh areas does not exist on this alignment.	No

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Table 4-5 Comparison of Potential Alternative Alignments Advanced for Detailed Analysis

Alignment L Segment Summary				Evaluation Criteria							
I.D.	From - To	Length	Facility Type	Public Safety	Accessibility / ADA Compliance	Waters and Wetlands	Notable Wildlife Habitat	Engineering & Construction Feasibility	Functionality / Suitability for all modes and users*	Trail Characteristics / Quality / Usage	Meets Overall Project Purpose?
S-8	North of Nonesuch River to Pleasant Hill Road via Sanborn parcel & CMP utility ROW	3,800 LF	Off-Road Shared Use Path	Length in Rdwy Shoulder (L.F): 0 Road Vol./Speed (vpd/mph): N/A No. Roadw ay Crossings: 2 No. Drivew ay Crossings: 0	ADA compliant facility	Wetland Impacts (Acres): 0.37 New stream crossings: 0 Modify Exist stream crossing: 1 No. vernal pools impacted: 0	NLEB Suitable Habitat Impacts (Acres): 0.80 NEC Suitable Habitat Impacts (Acres): 0.19 TWWH Habitat Impacts (Acres): 0	Feasibility: Moderate Bridge Constr. Cost: \$1.66 M Complexity: Low Right-of-Way: Available	Suitable for all modes.  Suitable for all users.	Mostly located w ithin a natural setting Entirely off-road facility Good user experience High segment usage expected	Yes
N-5	Pleasant Hill Road @ CMP Corridor to WRC via CMP ROW east and north of Prout's Pond	4,300 LF	Off-Road Shared Use Path	Length in Rdwy Shoulder (L.F): 0 Road Vol. / Speed (vpd / mph): N/A No. Roadw ay Crossings: 1 No. Drivew ay Crossings: 1	ADA compliant facility	Wetland Impacts (Acres): 0.15 New stream crossings: 3 Modify Exist stream crossing: 1 No. vernal pools impacted: 0	NLEB Suitable Habitat Impacts (Acres): 0.23 NEC Suitable Habitat Impacts (Acres): 0.68 TWWH Habitat Impacts (Acres): 0	Feasibility: Good Bridge Constr. Cost: N/A Complexity: Low Right-of-Way: Available	Suitable for all modes.  Suitable for all users.	Mostly located w ithin a natural setting Entirely off-road facility Good user experience High segment usage expected	Yes
Alignment L Totals		8,100 LF	100% Off-Road Shared Use Path	Length in Rdwy Shoulder (L.F): 0 Road Vol. / Speed (vpd / mph): N/A No. Roadw ay Crossings: 3 No. Drivew ay Crossings: 1	ADA compliant facility	Wetland Impacts (Acres): 0.52 New stream crossings: 3 Modify Exist stream crossing: 2 No. vernal pools impacted: 0	NLEB Suitable Habitat Impacts (Acres): 1.03 NEC Suitable Habitat Impacts (Acres): 0.87 TWWH Habitat Impacts (Acres): 0	Feasibility: Moderate Bridge Constr. Cost: \$1.66 M Complexity: Low Right-of-Way: Available	Suitable for all modes.  Suitable for all users.	Mostly located w ithin a natural setting Entirely off-road facility Good user experience High alignment usage expected	Yes

More Desirable

Less Desirable

Alignment M Segment Summary				Evaluation Criteria							
I.D.	From - To	Length	Facility Type	Public Safety	Accessibility / ADA Compliance	Waters and Wetlands	Notable Wildlife Habitat	Feasibility	Functionality / Suitability for all modes and users	Trail Characteristics / Quality / Usage	Meets Overall Project Purpose?
S-8	North of Nonesuch River to Pleasant Hill Road via Sanborn parcel & CMP utility ROW	3,800 LF	Off-Road Shared Use Path	Length in Rdwy Shoulder (L.F): 0 Road Vol./Speed (vpd/mph): N/A No. Roadw ay Crossings: 2 No. Drivew ay Crossings: 0	ADA compliant facility	Wetland Impacts (Acres): 0.37 New stream crossings: 0 Modify Exist stream crossing: 1 No. vernal pools impacted: 0	NLEB Suitable Habitat Impacts (Acres): 0.80 NEC Suitable Habitat Impacts (Acres): 0.19 TWWH Habitat Impacts (Acres): 0	Feasibility: Moderate Bridge Constr. Cost: \$1.66 M Complexity: Low Right-of-Way: Available	Suitable for all modes.  Suitable for all users.	Mostly located w ithin a natural setting Entirely off-road facility Good user experience High segment usage expected	Yes
N-6	Pleasant Hill Road @ CMP Corridor to WRC via CMP ROW, Maine Turnpike ROW, and Highland Avenue	6,300 LF	Separated Shared Use Path along Highland & Maietta for 3,650 ft. Off-Road Shared Use Path Elsew here	Length in Rdwy Shoulder (L.F): 0 Road Vol. / Speed (vpd / mph): 6,220 / 45 No. Roadw ay Crossings: 6 No. Drivew ay Crossings: 3	ADA compliant facility	Wetland Impacts (Acres): 0.09 New stream crossings: 0 Modify Exist stream crossing: 1 No. vernal pools impacted: 0	NLEB Suitable Habitat Impacts (Acres): 0.44 NEC Suitable Habitat Impacts (Acres): 0.62 TWWH Habitat Impacts (Acres): 0	Feasibility: Good Bridge Constr. Cost: N/A Complexity: Low Right-of-Way: Available	Suitable for most modes. Roadw ay and sidew alk usage not ideal for w inter use.  Suitable for all users. Young children w ill require close supervision at crossings	Partially located in a roadw ay setting 3,650 L.F. is separated on-road facility Moderate user experience Moderate segment usage expected	Yes
Alignment M Totals		10,100 LF	100% Off-Road Shared Use Path	Length in Rdwy Shoulder (L.F): 0 Road Vol. / Speed (vpd / mph): 6,220 / 45 No. Roadw ay Crossings: 8 No. Drivew ay Crossings: 3	ADA compliant facility	Wetland Impacts (Acres): 0.46 New stream crossings: 1 Modify Exist stream crossing: 1 No. vernal pools impacted: 0	NLEB Suitable Habitat Impacts (Acres): 1.24 NEC Suitable Habitat Impacts (Acres): 0.81 TWWH Habitat Impacts (Acres): 0	Feasibility: Moderate Bridge Constr. Cost: \$1.66 M Complexity: Low Right-of-Way: Available	Suitable for most modes. Roadw ay and sidew alk usage not ideal for w inter use.  Suitable for all users. Young children w ill require close supervision at crossings.	Partially located in a roadw ay setting 3,650 L.F. is separated on-road facility Moderate user experience Moderate alignment usage expected	Partially Meets Overall Project Purpose

More Desirable

Less Desirable

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## 4.4 Description of Screened Alternative Alignments

The detailed alternatives analysis focuses on the two alternative alignments that would meet the overall project purpose to varying degrees. Both of the alternatives would consist of off-road trails with road crossings or on-road separated shared use paths with road crossings. Each alternative would provide varying degrees of user safety and adequacy for all modes and skill levels. To meet the overall project purpose, discharge of fill to wetlands would be unavoidable with each of the two alternative alignments selected for detailed analysis.

### 4.4.1 Alignment L: Eastern RR ROW → Sanborn Parcel → CMP ROW → Wainwright Complex (Segment S8 → N5)

#### Route Description

Alignment L would be approximately 8,100 linear feet, or 1.53 miles, in total length. This is the shorter of the two alignments advanced for detailed study. The trail would be 100 percent off-road. In the southern portion of the study area, Alignment L would cross the Nonesuch River within the Eastern Railroad ROW. It would then exit the ROW, and continue through a wooded parcel owned by a private landowner (the Sanborn parcel) located east of the river for approximately 3,800 linear feet. In this area, the trail would traverse an area of intact mature mixed forest. Preliminary discussions with the landowner of the Sanborn parcel indicate that an easement could be obtained easily from the landowners in exchange for fair market value of the property.

The trail alignment would then enter the CMP-owned transmission corridor. The trail would be constrained to a 15-foot wide area along the corridor's northern ROW line, a requirement established by CMP as a condition for co-locating the trail within its corridor. Most of the corridor is regularly maintained in a sapling tree/shrub height community due to utility line safety requirements. The trail would cross the Pan Am Railways-owned rail corridor via a new three-span pedestrian bridge. East of the railroad crossing, Alignment L would continue along the CMP corridor and pass through/about a highly developed industrial area. Within the industrial area this alignment would cross Parkway Drive before intersecting with, and crossing, Pleasant Hill Road to remain within the CMP transmission corridor.

In the northern portion of the study area, this alignment would continue from Pleasant Hill Road following the CMP transmission corridor for several hundred feet before transitioning onto an existing gravel access road running adjacent to, and southeast of, Prout's Pond. Portions of this section of trail would be located on property owned in fee by a private landowner and portions owned in fee by the Town of Scarborough. Preliminary discussions with the private landowner indicate that an easement could be obtained easily from the landowners in exchange for fair market value of the property.

The trail would follow the existing gravel access road until intersecting with an industrial driveway to a small wood waste processing facility located west of the trail and north of Prout's Pond. Per planning discussions with MaineDEP, to avoid impacts to a forested wetland located on the east side of a modified stream, the trail would cross over the stream by following the edge of the driveway to the industrial processing area, resulting in culvert widening and minor stream impacts. The alignment would then follow the edge of another disturbed utility line easement on property owned in fee by a private landowner. Preliminary discussions with this landowner also indicate that an easement could be obtained easily from the landowners in exchange for fair market value of the property.

For most of its length, the alignment within the CMP easement would follow informal access paths created by CMP maintenance crews and public use of off-road-vehicles on the corridor. In some locations

the trail location would be altered to accommodate CMP requirements, or to maintain a minimum 25-foot setback from a stream that flows roughly parallel to the CMP easement.

After following the utility line easement for approximately 1,100 feet, the alignment would exit the CMP corridor and would turn slightly to the northwest, where it would traverse a parcel of privately owned property before reaching the Wainwright Recreation Complex. In this area the trail would traverse an area of intact mature mixed forest and forested wetland. Two stream channels, measuring approximately 8-feet and 12-feet in width, would be crossed in this parcel, by using oversized and partially sunken culverts. Exiting the CMP corridor allows the proposed design to avoid more significant wetland impacts while also minimizing the number and scale of stream crossings required. Additionally, this route would minimize impact upon the landowner's ability to develop the parcel in the future. Preliminary discussions with this landowner indicate that an easement could be obtained easily from the landowner in exchange for fair market value of the property.

After crossing through the privately-owned property, Alignment L would enter the Wainwright Recreation Complex. The alignment would traverse a grassed area and either circumvent, or cross over, a stream, where it would then tie into the existing Portland Greenbelt, an existing segment of the Eastern Trail system at Gary L. Maietta Way.

### Discussion

The entire length of this Alignment would be located off-road and would require a fewer number of roadway and driveway crossings than would Alignment M. A total of two roadway and one driveway crossing would be required. As a result, this alignment would have a lower potential for collisions between trail users and motor vehicles making this alignment preferable with respect to user safety. The facility would also be designed and constructed to be compliant with ADA accessibility requirements and guidelines.

Alignment L would result in approximately 0.52 acres of impacts to wetlands, as determined through wetland field delineation. These wetland impact totals include approximately 0.15 acres of temporary construction-related impacts and approximately 0.37 acres of permanent impacts. These wetland totals also include impacts to wetlands of special significance (WSS). The total anticipated impact to WSS is approximately 0.40 acres including approximately 0.12 acres of temporary impact and approximately 0.28 acres of permanent impact. In addition, five stream crossings would be required.

The project would impact approximately 1.03 acres of suitable NLEB habitat and approximately 0.87 acres of suitable NEC Habitat. No impacts to Tidal Waterfowl and Wading Bird Habitat (TWWH) are anticipated for this alignment.

The design and construction of this alignment would require bridges over the Nonesuch River and over Pan Am Railways. In addition, preliminary discussions with each private landowner affected by this alignment indicate that easements could be obtained easily from the landowners in exchange for fair market value of the property.

The off-road nature of this option, combined with the minimal number of roadway and driveway crossings, results in a facility that would be functional and suitable for all modes, user types and skill levels. In addition, this alignment would provide a facility located primarily in a quiet and safe setting away from vehicular traffic, with visual access to areas of natural significance and scenic beauty. While a short segment of trail located east of the railroad crossing would abut an industrial area with views reflecting the nature of the industrial area, the overall trail setting would provide an excellent user experience that would maximize this facility's use as a recreational and transportation corridor.

Additionally, Alignment L would connect the two existing off-road portions of the Eastern Trail; without such a connection, the recent extension of the off-road portion of the Eastern Trail to the Nonesuch River would go unused. In summary, this alignment would be consistent with the overall project purpose of the Scarborough Eastern Trail Connector.

#### **4.4.2 Alignment M: Eastern RR ROW → Sanborn Parcel → CMP Corridor → Town of Scarborough Property → Highland Ave → Gary L. Maietta Way → Wainwright Complex (Segment S8 → N6)**

##### Route Description

Alignment M would be approximately 10,100 linear feet, or 1.91 miles, in total length and would share the same alignment as Alignment L for the southern portion of the study area. This alignment would be approximately 25 percent longer than Alignment L.

After crossing Pleasant Hill Road into the northern portion of the study area, this alignment initially would share the same route as Alignment L for approximately 1,400 feet, until reaching the approximate midpoint of Prout's Pond. From this point, the alignment would veer east and follow a gravel maintenance road through a wetland mitigation site developed by the Maine Turnpike Authority and now owned by the Town of Scarborough. In this area, the existing gravel road would be reestablished for use as a recreational trail by clearing existing shrub growth on the roadway and resurfacing the proposed trail surface. Construction of a non-motorized recreational trail through this site is specifically noted as an allowed activity in the permits for the mitigation site.

The trail would follow the maintenance path road through the wetland mitigation site for approximately 1,100 feet, until intersecting with the industrial driveway to the small wood waste processing facility located north of Prout's Pond. Here the alignment would turn southwest and follow alongside the driveway as a separated shared use trail for approximately 125 feet. The south side of the existing driveway would be widened approximately 13 feet to the south to allow for this facility to be constructed. The required widening would result in impacts to a wetland area located south of the driveway at its intersection with Highland Avenue.

At the end of the driveway the alignment would intersect with, and cross to the east side of Highland Avenue.

A preliminary evaluation of locating Alignment M on the west side of Highland Avenue was completed in an effort to avoid the need to cross Highland Avenue twice. However, a substantial length of the west side of the roadway includes wetland areas and a deep ditch that is typically filled with water (potentially one of the streams flowing from the Wainwright Complex). Due to these natural features, combined with a narrow ROW, and the presence of utilities that would require relocation, constructing the trail on the west side of Highland Avenue was dismissed. Such an alignment would result in significant cost increase, require extensive utility relocations, and require the acquisition of additional right-of-way to allow for trail construction.

After crossing Highland Avenue the path would continue to the northeast along Highland Avenue, where approximately 200 linear feet of sidewalk would be constructed along the east side of the roadway. The alignment would then transition onto an existing 1,300 foot-long length of 4-foot-wide sidewalk, approximately half of which would be located behind a 3-foot-wide grassed esplanade. The entirety of the existing sidewalk would be increased to 8-foot wide located behind a 3-foot-wide grassed esplanade, the minimum widths recommended by AASHTO for this type of facility. Minimal ROW east of Highland Avenue exists and the proposed shoulder modifications would extend to the current ROW line.

Temporary construction rights likely would be required at all of the 11 abutting residential properties. At some properties, stockade fences, trees and other plantings would be removed to allow for the required construction activities.

Along the existing sidewalk, Alignment M would cross four intersecting roadways serving large residential developments before reaching the intersection of Gary L. Maietta Way. Here the alignment would cross to back to the west side of Highland Avenue and onto an existing sidewalk on the north side of Maietta Way.

After crossing onto Maietta Way the alignment would follow along the north side of Maietta Way on an 8-foot-wide sidewalk/multi-use trail located behind the curb, but with no esplanade. No improvements to this section of sidewalk would be proposed since it is located along a relatively low volume, low speed roadway and it meets AASHTO minimum requirements for trail width. The alignment would follow the sidewalk for approximately 1,800 feet and cross two additional mixed-use commercial and residential driveways.

After following Maietta Way, Alignment M would enter the Wainwright Recreation Complex where it ties into the existing Portland Greenbelt.

### Discussion

The majority of Alignment M would be located off-road with approximately 3,650 feet of trail, or 36 percent located along a roadway. The full length of the proposed facility would be designed and constructed to be compliant with ADA accessibility requirements and guidelines. The proposed improvements along Highland Avenue would make it substantially different than the no-build alternative since a dedicated 8-foot-wide multi-use trail would be constructed along the existing roadway. Within the planned trail route Highland Avenue is a designated truck route within the City of South Portland which contributes to a higher volume of trucks on this roadway and which is not conducive to co-location with a multi-use trail facility.

Alignment M would include eight roadway crossings servicing large residential developments and two mixed-use commercial and residential driveway crossings. In addition, the proposed southerly crossing of Highland Avenue would present specific challenges with respect to user safety. At this location, an informal driveway/field entrance to a private residence exists, creating a potential conflict point, and the proposed trail crossing would be located within a section of roadway with a posted speed of 45 mph. MaineDOT has developed design policies for crosswalks intended to maximize pedestrian safety and minimize the potential for accidents with motor vehicles. This policy limits the installation of crosswalks to areas where the speed limit is 40 mph or less, unless the intersection is controlled by a fully actuated traffic signal.<sup>51</sup> No such signal exists in the vicinity of the proposed project. Further, anecdotal evidence suggests vehicles often exceed 45 mph through this area. This crossing, combined with the remaining nine roadway and driveway crossings would present substantial additional hazards to trail users, especially to young children and those with impaired mobility or senses.

Alignment M would result in approximately 0.46 acres of impacts to wetlands, as determined through wetland field delineation. These wetland impact totals include approximately 0.13 acres of temporary construction-related impacts and approximately 0.33 acres of permanent impacts. These wetland totals also include impacts to wetlands of special significance (WSS). The total anticipated impact to WSS is

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<sup>51</sup> MaineDOT, *Engineering Instruction C6 – MaineDOT Guidelines on Crosswalks*, March 6, 2013.



approximately 0.35 acres including approximately 0.10 acres of temporary impact and approximately 0.24 acres of permanent impact. In addition, two stream crossings would be required

The project would impact approximately 1.24 acres of suitable NLEB habitat and approximately 0.81 acres of suitable NEC habitat. No impacts to TWWH are expected.

The design and construction of this alignment would require bridges over the Nonesuch River and over Pan Am Railways similar to Alignment L. Along Highland Avenue, one box culvert carrying a stream from the Wainwright Recreation Complex would require modifications, including the installation of a headwall and changes to the existing structure's side slopes.

Preliminary discussions with private landowners affected by this alignment, excluding 11 along the east side of Highland Avenue where the ROW would extend into the yards of 11 residential properties, indicate that easements could be obtained easily from the landowners in exchange for fair market value. To date, no preliminary discussions have occurred with the landowners of the 11 abutting properties and it is unknown whether they would cooperate with the project, or if alternate means of securing property would be required.

Approximately 36 percent of this alignment would be located along a busy roadway requiring multiple crossings of intersecting roadways and driveways. These features make this alignment less preferable than Alignment L with respect to user safety. Furthermore, these features are not consistent with the overall project purpose and need of providing a facility located primarily in a quiet and safe setting and providing access to areas of natural significance and scenic beauty. Additionally, the portions of Alignment M located along Highland Avenue and Gary L. Maietta Way would not provide a functional facility for all modes, particularly winter uses (skiing and snowshoeing) considering winter maintenance activities required along each roadway. In our judgment, this alignment, if constructed, would see substantially less use compared to Alignment L due to potential conflicts between the multi-use trail and the existing high-speed vehicle traffic present along Highland Avenue. Therefore, Alignment M does not fully meet the overall project purpose.

## **5 Environmental Effects of Alternatives**

Section 5 identifies the environmental evaluation criteria presented in the Guidelines and NRPA, and it describes the environmental effects of the two build alternative alignments relative to those criteria. These evaluation criteria described and discussed herein are also presented in Table 4-2 and Table 4-3.

### **5.1 Section 404(b)(1) Evaluation Criteria**

Under the Guidelines, special aquatic sites require special protection because of their ecological significance and contributions to the overall health or vitality of an ecosystem of a region. Special aquatic sites include sanctuaries and refuges (40 CFR 230.40), wetlands (40 CFR 230.41), mud flats (40 CFR 230.42), vegetated shallows (40 CFR 230.43), coral reefs (40 CFR 230.44), and riffle and pool complexes (40 CFR 230.45). The project study area does not contain sanctuaries and refuges, mud flats, vegetated shallows, or coral reefs. Pending further investigation, the rivers and streams could include riffles and/or pool complexes. Wetlands exist in the project study area. They are discussed in detail in Appendix A. Because the proposed Eastern Trail Connector Project is not water-dependent and proposes to discharge dredged or fill material into wetlands, it is subject to the requirements of the Guidelines, which states that the practicable alternative that is the least environmentally damaging to aquatic resources must be selected *unless* this alternative would have *other significant environmental consequences*.

While the alternatives analysis must consider the impact to Waters of the U.S. that would result from the alternative before compensatory mitigation, the alternatives selection process evaluates reasonable and prudent alternatives based on "net harm" (after mitigation) of the alternative to other environmental resources, such as Section 4(f) resources, water quality, or community resources. Therefore, if an alternative exists where the impacts to non-aquatic resources can be practicably mitigated, this alternative should generally be selected over one that would fill waters of the U.S.

The Guidelines also establish a mitigation sequence used by the USACE to ensure that environmental impacts of permitted actions are acceptable. Under this framework, there is a three-step sequence for mitigating potential adverse impacts associated with a proposed project: avoid, minimize, and compensate impacts.

#### **5.1.1 Wetlands and Other Waters of the U.S.**

The Section 404 process places a high priority on the *avoidance* of impacts to wetlands and other waters of the U.S. Where this resource cannot be avoided, the evaluation of practicable alternatives must consider the impact to jurisdictional wetlands and other waters of the U.S. that would result from the alternative *before compensatory mitigation is considered*. Specific factors considered in the LEDPA analysis included the amount of jurisdictional wetlands acreage lost, the functions and values affected, indirect impacts, and cumulative impacts. Quantitative measures include the number of jurisdictional areas crossed (with bridges and culverts), linear feet of impacts, and square feet of impacts. Qualitative measures include the quality of the functions and value provided by the wetlands.

#### **5.1.2 Water Quality Standards/Floodplain Encroachment**

The alternatives analysis must ensure that the LEDPA is consistent with Maine water quality regulations, including Chapter 310, Wetlands and Waterbodies Protection Rules. Additional quantitative measures include the linear feet of affected floodplain (which also include impacts to significant wildlife habitat).

#### **5.1.3 Sensitive Species/Habitat**

The Guidelines place a high priority on the avoidance of impacts to associated sensitive species, including threatened and endangered species and other species of special concern. Impacts to wildlife habitat, including NEC upland scrub-shrub habitat, NLEB forest habitat, and habitat designated by MaineIFW as significant wildlife habitat, were evaluated. Additionally, avoidance or minimization of impacts was considered in determining the LEDPA.

#### **5.1.4 Section 4(f) and Other Environmental Resources**

Public parklands and recreational resources, wildlife and waterfowl refuges, and historic properties listed on or eligible for listing on the National Register of Historic Places, are protected under the U.S. Department of Transportation Act of 1966. As with aquatic resources, avoidance (or minimization where avoidance is not feasible) is required. Similar to the Guidelines, Section 4(f) allows the potential for other significant environmental impacts to override preservation of Section 4(f) resources. Impacts to non-aquatic resources are evaluated based on the "net harm" (after mitigation) of the alternative to Section 4(f) or other environmental resources.

### **5.1.5 Human Use Characteristics**

Under Section 404 (b)(1) Subpart F (Section 230.54), human use characteristics should be considered when making factual determinations and findings of compliance or non-compliance. These resources include parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves, that consist of areas designated under Federal and State laws or local ordinances to be managed for their aesthetic, educational, historical, recreational, or scientific value. The discharge of dredged or fill material into such areas may modify the aesthetic, educational, historical, recreational and/or scientific qualities thereby reducing or eliminating the uses for which such sites are set aside and managed.

## **5.2 NRPA Assessment Criteria**

NRPA has established standards for projects which affect wetlands, including wetlands of special significance which are present at the site, including open water, freshwater wetlands which provide significant wildlife habitat, wetlands subject to flooding, and streams. The standards focus first on avoidance of the impact, followed by minimization where avoidance is not possible. Minimization includes reducing the size, scope, configuration or density of the project as proposed, and developing alternative project designs that avoid or lessen the wetland impact. When determining whether an impact is “unreasonable,” NRPA also considers direct and indirect effects; the wetland functions and values; the proposed compensation; cumulative effects of minor alterations on the wetland. For wetlands which contain threatened or endangered species, the proposed wetland alteration must not disturb the species and the project must not affect the continued use or habitation of the site by the species. Finally, NRPA directs MaineDEP to consider the “reasonableness” of the activity relative to the direct and cumulative wetland impacts. The reasonableness of the activity includes the “ability of the activity to perform as intended; public health or safety concerns addressed by the activity; and the type and degree of benefit from the activity (public, commercial or personal).”

## **5.3 Wetlands and Other Resources**

### **5.3.1 Wetlands Evaluations**

For the 2006 evaluation of the Scarborough Eastern Trail Connector, wetlands in the project area were identified through remote sensing. For the 2010 evaluation and in preparation for this Alternatives Analysis, wetlands in the project study area were assessed through remote sensing, field-approximation and field-delineation.

In October 2010, Normandeau Associates, Inc. conducted a wetland delineation and survey for potential vernal pools on two parcels in the southern portion of the project study area (Sanborn parcels). The wetlands evaluation, including documentation of agency coordination and USACE wetland determination data forms, is provided as Appendix A. Figure 2 in Appendix A presents the field-delineated wetlands.

In November 2013, NewEarth Ecological Consultants, Inc. prepared a *Wetlands Delineation and Waterbody Identification Report*, which included additional wetlands review and field-verified wetland and water resources in both the southern and northern portions of the project study area. The *Report*, including a wetlands functions and values assessment and USACE data forms, provides additional information on the wetlands affected by each of the alternative alignments. It is provided as Appendix B. Figures 4 through 9 in Appendix B present the field-verified wetland resources in the project study area.

### 5.3.2 Other Existing Resources

Federal and state resource agencies have conducted records searches and site visits in the project study area to assess the potential for protected resources.

The U.S. Fish and Wildlife Service (USFWS) conducted a records search of the project study area in June 2012 pursuant to Section 7 of the Endangered Species Act, the Bald and Golden Eagle Protection Act, and the Fish and Wildlife Coordination Act.<sup>52</sup>

The Maine Department of Inland Fisheries and Wildlife (MDIFW) conducted a records search for Rare, Threatened, and Endangered Species, designated Essential and Significant Wildlife Habitats, and fisheries habitat concerns within the project study area,<sup>53</sup> and conducted follow-up site evaluations in selected locations.<sup>54</sup>

The Maine Department of Conservation (MDC) conducted a records search for rare and exemplary botanical features in proximity in the project study area in 2012.<sup>55</sup> No rare botanical features have been documented in the southern portion of the project study area. Further evaluation by the MDC is needed to assess the presence of rare and unique botanical features and natural communities in the northern portion of the site.

**Rare, Threatened and Endangered Species.** Habitat for New England Cottontail, a State-listed Endangered species, has been mapped in the project study area, in proximity to the existing CMP utility corridor (as shown in Appendix B). NEC prefer dense shrubby thickets, with good interspersed of herbaceous vegetation, sapling trees (generally less than 10 feet tall), and shrub species (USFWS 2006). Most of the habitat within the CMP utility line corridor, which is continuously maintained in a young sapling-shrubby vegetated condition for utility line safety requirements, contains high to moderate quality habitat for NEC.

A site visit was conducted in 2010 and a subsequent site visit was conducted in June 2012 with MDIFW to determine whether the project would impact this species.<sup>56</sup> MDIFW determined that the specific areas adjacent to the proposed trail located west of the railroad crossing were moderate to low-quality habitat for NEC. Additionally, MDIFW determined that the forested portions of the study area to the northeast of Prout's Pond do not provide suitable habitat for NEC.

Forested areas of the project study area contain habitat potentially suitable as roosting habitat for NLEB. Acoustical monitoring completed by biologists from the Maine Department of Transportation in 2015 found that, while the project area includes habitat suitable for NLEB, the acoustical monitoring did not record any bat calls attributed to the NLEB.

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<sup>52</sup> Zicari, Laury, Field Supervisor, Maine Field Office, U.S. Department of Interior, Fish and Wildlife Service, to S. Grove, NewEarth Ecological Consulting, LLC, "Eastern Trail Connector Project – Scarborough and South Portland, Maine, Log Number 05E1ME00-2012-SL-0233," June 22, 2012.

<sup>53</sup> Walker, Steve, Acting Environmental Review Coordinator, Maine Department of Inland Fisheries and Wildlife, to S. Grove, NewEarth Ecological Consulting, Inc., "Re: Information Request, Eastern Trail Scarborough to South Portland Connector Project," July 1, 2012.

<sup>54</sup> Stacie Grove, NewEarth Ecological Consulting, Memorandum. "Site Visit Summary, Eastern Trail Connector Project – Assessment of Potential Eastern Cottontail Habitats," September 27, 2012

<sup>55</sup> Cameron, Dan, Ecologist, Maine Natural Areas Program, to S. Grove, NewEarth Ecological Consulting, LLC, "Re: Rare and exemplary botanical features in proximity to: Eastern Trail Scarborough to South Portland Connector Project, Scarborough and South Portland, Maine," June 22, 2012.

<sup>56</sup> Stacie Grove, NewEarth Ecological Consulting, Memorandum. "Site Visit Summary, Eastern Trail Connector Project – Assessment of Potential Eastern Cottontail Habitats," September 27, 2012.



**Other Protected Species.** Transient bald eagles occasionally may occur in the project area. While not on the Federal threatened list, the bald eagle is protected against any “take,” which includes disturbance, defined as agitation or bother by interfering with breeding, feeding or sheltering behavior which could lead to a decrease in its productivity or nest abandonment.

**Essential Habitat** is designated only for Piping Plovers, Least Terns, and Roseate Terns by MaineIFW, all of which are coastal breeding species which do not occur in the project study area.

**Significant Wildlife Habitat.** A Tidal Waterfowl and Wading Bird Habitat identified by Maine Inland Fisheries and Wildlife is associated with the Nonesuch River.

### **Significant Vernal Pools.**

Based on a vernal pool habitat assessment (2010), and vernal pool surveys performed on the project site in 2014 and 2015, no vernal pools or potential vernal pool habitat that meet the USACE or Maine DEP definitions of a vernal pool were identified in the project area. Additionally, per the Maine MaineIFW, there are currently no Significant Vernal Pools mapped along this project corridor; however, a comprehensive statewide inventory for Significant Vernal Pools has not been completed.

**Streams** Five waterbodies meet the NRPA definition of a stream, including the tidal Nonesuch River, two perennial unnamed tributaries to Spurwink Creek, and two intermittent unnamed tributaries to Spurwink Creek. Many of the streams associated with Spurwink Creek are known to support American Eel, a Species of Special Concern. However, numerous culverts and other alterations to the streams within the project site make them unsuitable as habitat for American Eel. Each of the streams which may or may not have originally been present in the project area, were created and/or reconfigured in the late 1940’s in order to drain the region for agricultural uses. Per a review by the Maine Department of Marine Resources (MDMR), the Nonesuch River adjacent to the project supports river herring (blueback herring and alewives); American shad; American eel; rainbow smelt; and sea lamprey. The MDMR indicated that the development of a trail would not have any effect on Atlantic salmon populations/habitat in the Nonesuch River and the project study area is located outside of the Gulf of Maine Distinct Population Segment of endangered Atlantic salmon.<sup>57</sup>

**Floodplain.** Per the Federal Emergency Management Administration (FIRM Panel # 2300520010D), areas adjacent to the Nonesuch River are designated as flood zone “A”. Lands in Zone A are considered high risk areas with at least a 1 in 4 chance of flooding during a 30-year period. Floodplains are protected under NRPA.

**Habitat Block.** Just north of the municipal line near Prout’s Pond, MDIFW has identified an unfragmented habitat block, defined as a large, contiguous area of natural woodland with little or no human disturbance essential for maintaining a diverse and healthy population of wildlife.<sup>58</sup>

## **5.4 Evaluation of Alternatives**

### **5.4.1 Effects Applicable to Both Alternatives L and M**

The following effects would be applicable to both Alignment L and Alignment M, and are therefore not further discussed in the following portions of this section:

<sup>57</sup> Normandeau Associates, Inc. *Wetland Delineation for the Town of Scarborough and the Eastern Trail Alliance, Sanborn Parcels, Scarborough, Maine*, Normandeau Project # 22213.000, December 15, 2010.

<sup>58</sup> City of South Portland, *Comprehensive Plan 2012 Update*, Appendix C, page C-13.

## **Section 4(f) Resources.**

The Wainwright Recreation Complex is a Section 4(f) resource. In both alternatives, in slightly different locations, the trail would tie into the Portland Greenbelt, an existing segment of the Eastern Trail system at Gary L. Maietta Way, just as it enters the Complex property. The trail tie-in with the Portland Greenbelt would complement the recreational use and purpose of the Section 4(f) resource.

## **Historic Resources.**

A review by the Maine Historic Preservation Commission indicates that no historic properties would be impacted by the project in the southern portion of the study area (from the Nonesuch River extending east to and including Pleasant Hill Road). Further evaluation by the Maine Historic Preservation Commission is needed to evaluate potential impacts in the northern portion of the study area. The Commission will be contacted for additional review during the preparation of permit applications.

A review by the Penobscot Indian Nation of the southern portion of the study area indicates that the project would not impact a structure or site of historic, archeological, or architectural significance to the Penobscot Nation, as defined by the National Historic Preservation Act of 1966. Further review will be required by the Nation for the northern portion of the study area. The Nation will be contacted for additional review during the preparation of permit applications.

## **Environmental Justice.**

Neither alternative would require the relocation of any residence. However, Alternative M would impact up to 11 residential properties on the east side of Highland Avenue. Temporary construction rights likely would be required on some, or all, of the 11 abutting properties. At some properties, stockade fences, trees and other plantings would require removal to allow for the required construction activities. Property owners would receive fair compensation for impacts to properties in accordance with state and federal requirements including FHWA's Uniform Act and MaineDOT's right-of-way manual.

## **Human Use Characteristics**

Neither alternative would adversely impact human use characteristics. Both Alignment L and Alignment M would occur within the Town of Scarborough's Resource Protection District: the Nonesuch River and its 250-foot buffer. Recreational facilities, such as a bike trail, are allowed activities within the Resource Protection District. Within the City of Portland, neither alternative is located within the Scenic Viewpoint Protection Overlay District, or other protection district.

### **5.4.2 Effects of Alternative L: Eastern RR ROW → Sanborn Parcel → CMP ROW → Wainwright Complex**

## **Wetlands and Waters of the U.S.**

Alternative L would have approximately 0.52 acres of impact to Wetlands and Waters of the U.S. as determined through field delineation. These wetland impact totals include approximately 0.15 acres of temporary construction-related impacts and approximately 0.37 acres of permanent impacts. These wetland totals also include impacts to wetlands of special significance (WSS). The total anticipated impact to WSS is approximately 0.40 acres including approximately 0.12 acres of temporary impact and approximately 0.28 acres of permanent impact. This is higher than Alternative M. Appendix A includes details on the wetland evaluations completed as part of this study.

In the southern portion of the alignment, impacts to wetlands and water resources would occur in the vicinity of the crossing of the Nonesuch River, which is identified as a perennial stream. The river is a tidally-influenced oligohaline (<0.5 ppt) to fresh water system. Water depth in the channel at the time of the survey ranged from 2.0 to 4.0 feet, depending on tidal flow. Within the project area the river is 25 feet wide, but nearby is up to 70 feet wide. At this location the former railroad bridge stone masonry abutments will be reused with minor modifications and the northerly approach embankment will be reconstructed. Currently, no in-water work at the Nonesuch River crossing is expected as part of this project.

The trail then extends approximately 500 feet north of the Nonesuch River crossing, on the existing Eastern Railroad ROW, where it then heads southeast through the Sanborn Parcels. Wetland habitats are found throughout the forest-dominated parcels and approximately 0.33 acres of a freshwater forested wetland would be eliminated/filled by the proposed trail in this area. This total consists of approximately 0.10 acres of temporary construction-related impacts and approximately 0.23 acres of permanent impacts. The wetland is of high quality primarily due to its large size, undisturbed site conditions, dense vegetation, and presence of significant wildlife habitat. Located adjacent to the Nonesuch River, the wetland would qualify as freshwater wetlands of special significance under NRPA since it is located a designated 100-year floodplain. Portions of the wetland along the Nonesuch River are also designated Tidal Waterfowl and Wading Bird Habitat, which is a state-designated significant wildlife habitat. Per Maine DEP guidance, the route alignment was adjusted in this location to avoid direct impacts to the significant wildlife habitat.

After crossing the Sanborn parcels north/northeast of the Nonesuch River, the route extends southeast/east along the CMP ROW utility easement. Alternative L would cross three small wetland pockets associated with a stormwater drainage ditch along the ROW. These wetlands share similar characteristics and are classified as palustrine scrub-shrub (PSS) wetlands with a secondary component of palustrine emergent wetland. The wetlands abut a commercial development along the south edge of the ROW and extend across the maintained CMP ROW. The area surrounding these wetlands is developed and hydrologic input is primarily from sheet flow off adjacent paved areas and numerous culverts which drain surface flow from roadways and parking lots. The wetlands appear to have been modified in the past as evidenced by young sapling trees, and portions are continuously maintained in a shrub-herb stratum as a result of mandatory utility line maintenance. Overall the wetlands are of low quality due to their small size, disturbed site conditions and adjacent development, and presence of trash and debris in the wetlands. In sum, in the southern portion of the alignment would impact approximately 0.04 acres of PSS wetlands including approximately 0.01 acres of temporary construction-related impacts and approximately 0.03 acres of permanent impacts.

In the northern portion of the alignment, Alternative L follows an existing 30 foot wide dirt road located to the west of Prout's Pond, crosses a 10 foot wide canal-like waterbody located at the northeast corner of Prout's Pond and entry way to a wood processing facility, extends northeast along an existing CMP utility ROW, passes northwest through undisturbed forest where it crosses two 5 to 8 foot wide waterbodies, then enters the open grassy areas of Wainwright Sports Complex where it crosses an 8 to 15 foot wide waterbody before tying into the existing trail. All stream crossings in this area meet the NRPA definition of streams, but appear to have been significantly modified in the past. Discussions with the landowner (Donald Prout) indicate that much of the entire area was excavated in the 1940's to drain wetlands for farming; a review of historic topographic maps supports this claim. The route in the northwest portion would impact approximately 0.15 acres of relatively undisturbed forested wetlands associated with the streams and channels northeast of Prout's Pond, and to wetlands in the vicinity of the Wainwright Recreation Complex, associated with unnamed tributaries to Spurwink Creek. The 0.15 acre total includes approximately 0.04 acres of temporary construction-related impacts and approximately 0.11 acres of

permanent impact. The wetlands are of high quality primarily due to their large size, undisturbed site conditions, dense vegetation, and presence of significant wildlife habitat. An unimproved off-road-vehicle trail bisects a small portion of the wetland complex, but impacts from the trail are relatively minor. Wetlands located within 25 feet of a river, stream or brook are considered wetlands of special significance under NRPA.

No vernal pools will be directly or indirectly impacted by the proposed alignment.

### **Water Quality/Floodplain**

In the southern portion of the alignment, approximately 85,500 cubic feet of fill would be placed within the 100-year floodplain during construction of the Eastern Trail Connector. The volume of flood storage loss associated with this project is negligible in the context of the entire floodplain and therefore not likely to affect flood characteristics in the area, and off site

Within the Sanborn Parcel the fill associated with the trail will cross three wetland pockets/drainage features. Culverts would be constructed at each of these locations to maintain drainage. Approximately 0.33 acres of wetlands would be impacted at this parcel and all are located within the 100-year floodplain. This total consists of approximately 0.10 acres of temporary construction-related impacts and approximately 0.23 acres of permanent impacts.

In the northern portion of the alignment one existing water crossing at the driveway to the wood waste processing facility would be widened. Additionally, three new water crossings would be required as the trail approaches the Wainwright Recreation Center: one intermittent channel crossing, and two perennial streams, all of which are tributaries to Spurwink Creek. Oversized and partially sunken culverts are proposed for all three crossings to provide a natural stream bottom. None of the northern portion of the alignment is located within a floodplain.

### **Sensitive Species/Habitat**

The wetland and adjacent upland forest areas within the Sanborn Parcels in the southern portion of the site are dominated by trees greater than 3 inches in diameter which would qualify as potential NLEB roost habitat and habitat for other bat species, which are of special concern in Maine. Of this 0.80 acres would be eliminated by the project. However, surveys completed in these areas by MaineDOT in August 2015 did not detect the presence of NLEB. MaineDOT is seeking concurrence on these findings from USFWS.

Additionally, based on site visits with Maine DIFW staff, some shrub-dominated portions of the route within the CMP ROW corridor are considered high to moderate quality habitat for NEC. The southern portion of the route would impact approximately 0.19 acres of this habitat. MDIFW has indicated that posting educational signs along the trail could compensate for NEC habitat impacts.

In addition, the northerly portion of this alignment near the Wainwright Sports Complex would also involve the removal of trees greater than 3 inches in size which would impact approximately 0.23 acres of suitable habitat for the NLEB, and would impact approximately 0.68 acres of high to moderate quality shrub habitat for the NEC along a section of CMP ROW.

Portions of the Nonesuch River are designated TWWH – a *significant wildlife habitat*; however, the trail alignment along the Eastern Railroad ROW would be located just outside of this habitat area.



## Other Environmental Factors

**Socio-economics and Land Use.** In the southern portion of the alignment, Alternative L would require two road crossings along the CMP corridor where the trail would abut an industrial area. The proposed crossing with Pleasant Hill Road is heavily traveled. The remaining roadway is lightly traveled.

In the northern portion of the alignment, as the trail would traverse the CMP corridor to the Wainwright Recreation Complex, Alternative L would require one driveway crossing.

The alignment would require approvals from CMP for co-location of the trail within the corridor; additionally, minimal distances from CMP transmission lines and/or fencing could be required as a safety precaution. Negotiations with three additional property owners would be required to obtain the required easements for this project.

### 5.4.3 Effects of Alternative M: Eastern RR ROW → Sanborn Parcel → CMP Corridor → Town of Scarborough Property → Highland Ave → Gary L. Maietta Way → Wainwright Complex

## Wetlands and Waters of the U.S.

Alternative M would have approximately 0.46 acres of impact to Wetlands and Waters of the U.S. as determined through field delineation. These wetland impact totals include approximately 0.13 acres of temporary construction-related impacts and approximately 0.33 acres of permanent impacts. These wetland totals also include impacts to wetlands of special significance (WSS). The total anticipated impact to WSS is approximately 0.35 acres including approximately 0.10 acres of temporary impact and approximately 0.24 acres of permanent impact. This is less than Alternative L. Appendix A includes details on the wetland evaluations completed as part of this study.

In the southern portion of the study area, this alternative follows the same route as alignment L and, therefore, would have the same impacts.

In the northern portion of the alignment, Alternative M follows the same alignment within the existing CMP ROW corridor as Alternative L for approximately 1,500 feet, then deviates from Alternative L near the southeast side of Prout's Pond where it heads northwest through the Maine DOT mitigation site. Although the mitigation site is dominated by wetlands, most impacts would remain within an existing trail through the mitigation site resulting in only approximately 0.09 acres of impact to Palustrine Forested (PFO) wetlands near the proposed southerly crossing of Highland Avenue including approximately 0.03 acres of temporary construction-related impacts and approximately 0.06 acres of permanent impacts. A review of available information found that this wetland could be associated with unnamed tributaries to Spurwink Creek and, therefore, could be considered a wetland of special significance.

No vernal pools will be directly or indirectly impacted by the proposed alignment.

## Water Quality/Floodplain

In the southerly portion of the study area the impacts associated with Alternative M are the same as Alternative L.

In the northern portion of the alignment, two water crossings over perennial streams are anticipated, all of which are tributaries to Spurwink Creek. Both crossings will consist of widening existing crossings.

### **Sensitive Species/Habitat**

In the southerly portion of the study area the impacts associated with Alternative M are the same as Alternative L.

In the northern portion of the alignment, the route follows the same CMP ROW and Alternative L and impacts to suitable NEC habitat are the same. Alternative M will also impact approximately 0.44 acres of forest habitat greater than 3 inches in diameter which is considered suitable habitat for the NLEB.

### **Other Environmental Factors**

**Socio-economics and Land Use.** In the southern portion of the alignment, Alternative M would result in the same impacts as Alternative L as the two alignments are the same.

In the northern portion of the alignment, as the trail would traverse the CMP corridor, the driveway to the wood waste processing facility, Highland Avenue and Gary L. Maietta Way, Alternative M would require six crossings of intersecting roadways and two driveway crossings.

The alignment would require approvals from CMP for co-location of the trail within the corridor; additionally, minimal distances from CMP transmission lines and/or fencing could be required as a safety precaution. Negotiations with two additional property owners would be required to obtain the required easements for this project. Acquiring temporary construction rights and, in some cases, permanent rights will be required from an additional 11 property owners along Highland Avenue.

## **5.5 Summary and Conclusion**

### **5.5.1 Summary Assessment of No Build Alternative**

The No Build Alternative would have no impact on wetland resources. However, the existing on-road Eastern Trail connection between Scarborough and South Portland does not connect to the recently expanded off-road trail to the western abutment of the Nonesuch River. Without an off-road connection, this segment of the Eastern Trail would dead-end and would likely be predominately unused.

The current on-road route, which primarily serves bicyclists, was established as an interim measure to provide connectivity between trail segments until a permanent off-road trail network could be constructed. Further, use of the on road route, especially portions located along Highland Avenue, does not provide a safe, quiet route for all users of all ages and abilities, or access to areas of natural significance or scenic beauty and is not consistent with the overall project purpose. In areas, Highland Avenue is characterized by daily traffic volumes of approximately 6,200 vehicles per day with posted speeds of up to 45 mph. In addition, the existing route does not include ADA accommodations for accessibility and does not provide a direct and efficient link between existing trail segments. Therefore, the selection of this alternative would be contrary to the public interest because it perpetuates a condition with less user safety and does not equitably serve all users or demographics.

## 5.5.2 Conclusion – No Build Alternative

As noted previously, the No Build Alternative does not meet the overall project purpose and, therefore, should not be advanced as the selected alternative for the Scarborough Eastern Trail Connector.

## 5.5.3 Summary Assessment of Build Alternatives

### 5.5.3.1 Resource Impacts

Table 5-1 presents a summary comparison of the anticipated approximated impacts to resources associated with each of the short-listed alternative alignments, based upon NWI data (remote sensing), Federal Emergency Management Agency Flood Insurance Rate Maps (FEMA FIRM) data, Maine Department of Inland Fisheries and Wildlife printed Habitat Data maps, and field-delineated wetlands proximate to the proposed alternative alignments.<sup>59</sup> Impacts are based on a trail width of 10-feet, and are approximate, based upon aerial photography interpretation combined with available resource information.

**Table 5-1 Potential Estimated Impacts to Resources by Alternative**

Alternative	Nonesuch River (tidal) Crossing	Other Stream X-ings	Approx. Total Wetland Impacts	Approx. WSS Impacts	100-year Floodplain Impacts	Vernal Pool Impacts	Potential Impact to Suitable NEC, NLEB, & TWWH Habitats
<b>L:</b> Nonesuch River North – CMP ROW	Yes	3 new + 2 mod.	0.52 Ac. / 22,393 s.f. <sup>a</sup>	0.40 Ac. / 17,434 s.f. <sup>c</sup>	Approx. 85,500 c.f.	No	NEC = 1.03 Ac. NLEB = 0.83 Ac. TWWH = 0 Ac.
<b>M:</b> Nonesuch River North – CMP ROW – Highland Ave	Yes	2 mod	0.46 Ac. / 19,838 s.f. <sup>b</sup>	0.35 Ac. / 15,227 s.f. <sup>d</sup>	Approx. 85,500 c.f.	No	NEC = 1.24 Ac. NLEB = 0.81 Ac. TWWH = 0 Ac.

- Wetland impacts presented are total impacts (inclusive of WSS) equaling approximately 0.52 acres (22,393 square feet). This consists of 0.15 acres (6,161 s.f.) of temporary impacts plus 0.37 acres (16,232 s.f.) of permanent impacts.
- Wetland impacts presented are total impacts (inclusive of WSS) equaling approximately 0.46 acres (19,838 square feet). This consists of 0.13 acres (5,573 s.f.) of temporary impacts plus 0.33 acres (14,265 s.f.) of permanent impacts.
- WSS impacts presented total approximately 0.40 acres (17,434 square feet). This consists of 0.12 acres (5,301 s.f.) of temporary impacts plus 0.28 acres (12,133 s.f.) of permanent impacts.
- WSS impacts presented total approximately 0.35 acres (15,227 square feet). This consists of 0.10 acres (4,558 s.f.) of temporary impacts plus 0.25 acres (10,669 s.f.) of permanent impacts.

As shown in Table 5-1, of the two Build alternatives considered in the detailed analysis, Alternative M would have the least amount of impacts to wetlands and waters, including floodplain. Alternative M would also have less impact to NEC and NLEB habitat.

### 5.5.3.2 Socioeconomic and Land Use Impacts

Both of the Build alternatives would require property acquisition and/or easements, which would involve negotiations with property owners.

<sup>59</sup> Approximated based on printed maps; digitized versions of maps were not available at the time of report development.

Alternative M would incur more socio-economic and land use impacts compared to Alternative L. Both alignments follow the same route in the southern portion of the study area, as well as for the first 1,400 linear feet of the northern portion of the study area. From this location Alternative L follows an existing CMP transmission line easement with limited development potential. Easements from two privately owned parcels will be required. By comparison, Alternative M is located on Town-owned property until reaching the driveway to the wood waste processing area north of Prout's Pond. Between this location and the Wainwright Complex property acquisition will likely be required from two landowners and an informal driveway entrance to a private residence will need to be relocated, modified, or closed. An additional ten properties will also be affected during construction. Temporary construction or permanent easements will likely be required from some properties. Additionally, several existing fences and mature trees will likely need to be removed to accommodate the proposed facility.

#### **5.5.3.3 Constructability**

Both of the Build alignments would require a crossing of the Nonesuch River along the abandoned Eastern RR corridor at the location of the former rail bridge, thereby limiting costs and environmental impacts. This crossing is feasible from a design and construction perspective and will present minimal constructability challenges and no impacts to the river or adjacent wetlands.

Each of the short-listed alternatives would also require a crossing of the Pan Am Railroad within the CMP transmission corridor. At-grade, tunnel and bridge crossings were considered for this crossing. A conceptual evaluation determined a grade separation structure was required for user safety and further determined a pedestrian bridge would provide the most cost-effective solution. The proposed structure will consist of an approximately 325 foot-long three-span prefabricated pedestrian bridge with approach embankments supported primarily by MSE walls to minimize ROW impacts. The required work at this location would not be significantly complicated or complex and can be reasonably constructed.

The remainder of both alignments includes the construction of at-grade trail with occasional water crossings consisted of oversized and partially buried culverts. These portions of the proposed alignments do not present significant constructability challenges.

#### **5.5.3.4 Consistency with Overall Project Purpose**

As demonstrated in the initial screening of the 17 individual trail segments, and the subsequent screening of the 19 potential trail alignments, both of the Build alternatives progressed to the detailed analysis would meet the overall project purpose to varying degrees.

However, in the detailed analysis of each of the short-listed alignments it was determined that Alternative M would not completely meet the overall project purpose, since approximately one third of this alignment would be directly adjacent to a busy roadway. Specifically, the detailed review of this alignment determined the following:

- This alignment would increase the risk of a trail user being involved in a collision with a motor vehicle considering the required number of roadway and driveway crossings, and the proximity of the alignment to existing roadways. Additionally, the southerly crossing of Highland Avenue would not meet MaineDOT standards due to the posted speed of the roadway (45 mph).
- Portions of the facility located along roadways would not be suitable for four-season usage. Winter roadway maintenance activities would effectively preclude cross-country skiing and snowshoeing on the section of facility located along Highland Avenue and Gary L. Maietta Way.



- Portions of the facility located along roadways, and the resulting roadway crossings, would be less suitable for young children and individuals with mobility and sensory impairments. Therefore, this alignment would not be suitable for all user groups and demographics.
- The facility would not be entirely located in a safe, natural setting removed from traffic.
- Alternative M, with a total length of 1.9 miles, would be a less direct route between the two off-road Eastern Trail connection points. It would be 25 percent longer than Alternative L. Because Alternative M would be a less direct route, its value and viability as a transportation corridor between communities would be decreased.

By comparison, Alternative L would represent a more direct route. In addition, it would be an entirely off-road facility, located in a safe, primarily natural, setting. This proposed alignment also would provide superior functionality, since it would accommodate four-season usage, all modes, and all user ages abilities.

Therefore, it is determined that Alternative L would best meet the project purpose. It would create a non-motorized, four-season, multi-use trail connection which maximizes off-road connections and alignments, and which provides a quiet and safe route for users of all ages and abilities, access to areas of natural significance and scenic beauty, connectivity among neighborhoods, and a quality experience to its users.

#### 5.5.3.5 Mitigation Costs

Mitigation would be required for impacts to freshwater and coastal wetlands and wetlands of special significance. Previous studies developed an estimate of wetland mitigation costs for alternative alignments in the southern portion of the study area,<sup>60</sup> including Alternatives L and M.<sup>61</sup> While MaineDEP encourages permit applicants to develop on-site mitigation prior to requesting acceptance into the In Lieu Fee (ILF) Compensation Program, for comparison purposes, it is assumed that the project would be accepted into the ILF Compensation Program.

Table 5-2 provides a preliminary estimate of ILF compensation for freshwater wetlands, using the Maine DEP ILF Compensation Rates for Cumberland County

**Table 5-2 Preliminary Estimate of In Lieu Fee for Freshwater Wetlands**

Alternative	Approximate wetland impact (square feet)	Approx. Freshwater Wetland Compensation Cost <sup>a</sup>
Alignment L	22,393 s.f. Total (includes 17,434 s.f. WSS)	\$171,256
Alignment M	19,838 s.f. Total (includes 15,227 s.f. WSS)	\$150,780

a. Costs were estimated using a In Lieu Fee cost of \$3.61/sf, an assessed valuation of \$0.69/sf for Cumberland County, for a total of \$4.30/sf., and an ILF resource multiplier of 2 for WSS, shorebird habitat a, and multiplier of 1 for other wetlands (7/15/15 – 6/30/17, Revised August 13, 2015)

<sup>60</sup> Town of Scarborough, Maine. Alternative Analysis, Eastern Trail, Nonesuch River Crossing, Prepared by Normandeau Associates, Inc. November 2010, page 3.

<sup>61</sup> Due to the scale of mapping available (remote sensing), impacts of freshwater wetlands were not determined for the trail along the Eastern Railroad ROW (Alternative C and Alternative F). Therefore mitigation costs are not available for those alternatives.

While the ILF estimates are preliminary and subject to refinement with agencies at permit application meetings, Table 5-2 shows that Alignment L would incur a higher wetland mitigation cost than would Alignment M.

#### 5.5.4 Conclusion

While it would incur slightly higher wetland impacts, and wetland mitigation costs, Alignment L would fully meet the overall project purpose. It would provide trail users with a safe, ADA compliant, four-season, off-road route suitable for all user modes, abilities and demographics within a natural setting. It also would provide the most direct connection between existing trail segments which maximizes its value and use as a transportation corridor.

For these reasons, Alternative L (Segment S8 → N5), which consists of an 8,100 linear foot long trail located entirely off-road, is the preferred alternative and likely LEDPA for the Scarborough Eastern Trail Connector Project.

## 6 Minimization Efforts

The following measures will be implemented to ensure that water quality standards will not be violated and the least amount of impacts to wetlands would occur during construction:

- Best Management Practices (BMPs) will be required to stabilize disturbed soil, minimize erosion, and capture and remove sediment suspended in runoff before it leaves the site. An Erosion and Sedimentation Control Plan will be prepared in accordance with the Maine Stormwater Management Law. BMPs will be developed in accordance with *Maine Erosion and Sediment Control BMPs*.<sup>62</sup> Temporary soil stabilization BMPs will be implemented during construction.
- Any dewatering during construction or other point source discharges will be subject to waste discharge requirements imposed under the National Pollutant Discharge Elimination System (NPDES). A Section 401 Certification will be obtained from MaineDEP prior to initiating work on the project.
- The project will comply with the conditions required by state and federal permitting agencies. As needed, the Town will have a certified wetlands biologist monitor construction activities in sensitive biological resource areas as necessary to ensure permit conditions and mitigation requirements are implemented and enforced.

In addition, minimization measures have, and will, be incorporated to ensure that post-construction, the trail will function with the least damage to the environment. Design examples of potential minimization measures include:

- Where it is safe to do so the trail width will be reduced in areas of wetlands or suitable habitat for threatened or endangered species.
- The need for grading, cutting and filling will be limited by following the existing terrain and topography to the extent practical.
- The area of impervious area added will be minimized through the use of grassed shoulders

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<sup>62</sup> Maine Department of Environmental Protection. *Maine Erosion and Sediment Control BMPs*. Bureau of Land and Water Quality, March 2003. DEPLW0588.

- While the trail surface material will be either stone dust or pavement, pavement will be proposed where trail grades exceed 3 percent and where the trail passes through the Nonesuch River floodplain to minimize erosion potential.

To maintain existing hydrologic connections, where the trail crosses large wetland areas, large partially sunken culvert pipes will be installed to provide continuity of the wetland areas. Crossings will be designed in accordance with Wetland and Stream Crossing Conditions of the USACE General Permit for the State of Maine to the extent practicable.

- The bottom elevation of the Nonesuch River Bridge will be 21 feet, which is almost 9 feet above the approximate 100-year flood elevation and which exceed MaineDOT's minimum freeboard requirement of 2 feet for minor bridge. As part of final design, a hydraulic evaluation of the Nonesuch River will be conducted to better establish the 100-year flood elevation at the River so that freeboard clearances will be maintained.
- The trail corridor will be maintained periodically by the Eastern Trail Management District and Town of Scarborough to maintain the trail surface, to address erosion or drainage issues, and to generally keep the trail in good condition.

Efforts have been taken to minimize adverse impacts on the aquatic ecosystem during preliminary design of the project, including siting the trail in a way to minimize impacts.

In the southern portion of the alignment, the Nonesuch River crossing would be located at the former rail crossing within the Eastern Rail ROW, where impacts to the river and adjacent wetlands previously occurred; therefore, no new impacts to the river or tidal wetlands would occur. As it would extend south of the river crossing to the CMP corridor (through the Sanborn parcel), the trail was developed along a series of forested upland areas to reduce wetland impacts. Because vegetation management is on-going within the CMP utility corridor, wherein a large portion of the southern alignment is located, no additional vegetative clearing would be required.

Additional minimization measures have been taken to minimize the number of and impacts to water crossings, particularly in the northern portion of the alignment. North of the PWD access road, the alignment of the trail was refined to minimize impacts to the stream. By relocating the trail to the west side of the stream, additional wetlands could be impacted. Per the MaineDEP, however, "this section of wetlands appears to be impacted by activities of the owner and vehicular traffic along the power line. If the trail is moved to the west side of the stream more than 25 feet from the stream, and the area between the trail and the stream is cleaned up and planted," then wetland compensation may not be required for this section of the trail."<sup>63</sup> Additionally, the possibility of routing the trail at the Wainwright complex such that it crosses over the large drainage swale near the terminus of the trail, rather than following within 25 feet of its edge, will be evaluated.

Currently, basic minimization and avoidance measures have been used on the project. As design progresses through final design further refinements will be made to avoid or minimize impacts to significant aquatic resources. For example, while the trail will generally consist of a 12-foot wide paved or stone dust trail, to reduce natural resources impacts, some trail locations will be reduced to 10 or 8 feet.<sup>64</sup> These additional minimization efforts will be coordinated with the ACOE and MaineDEP once the LEDPA has been established and once the final design process begins.

<sup>63</sup> Woodruff, Christine, Maine Department of Environmental Protection, personal correspondence to S. Grove, NewEarth Ecological Consulting, Re: Permitting for the Eastern Trail Scarborough - S. Portland Connector Project" December 03, 2013.

<sup>64</sup> Note that AASHTO standards allow for spot reduction in width.

## 7 References

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