Horsley Witten Group
Sustainable Environmental Solutions
90 Route 6A • Unit 1 • Sandwich, MA 02563
508-833-6600 • horsleywitten.com

March 13, 2019

Northampton Conservation Commission
c/o Sarah LaValley, Conservation, Preservation & Land Use Planner
210 Main Street, Planning & Sustainability
Northampton, MA 01060

Dear Northampton Conservation Commission:

On behalf of Northampton Planning & Sustainability, the Horsley Witten Group, Inc. (HW) is pleased to submit this **Notice of Intent** for the proposed **Rocky Hill Greenway Multi-Use Trail**. The 2,630 linear foot trail is proposed to connect Rocky Hill Road (Route 66) to the New Haven and Northampton Canal/Manhan Rail Trail near Easthampton Road (Route 10), Northampton.

A portion of the proposed project will occur within Bordering Vegetated Wetland and its associated buffer zone, as well as within Riverfront Area. **None** of this work is within the Natural Heritage and Endangered Species Program *Estimated Habitat of Rare Wildlife and Certified Vernal Pools* and *Priority Habitat of Rare Species*. These jurisdictional areas are protected and regulated under the Massachusetts Wetlands Protection Act (M.G.L. Ch. 131 § 40), its implementing Regulations (310 CMR 10.00) and the Northampton Wetlands Protection Ordinance (Chapter 337).

Proposed mitigation includes providing wetland replacement at a greater than 1:1 ratio. Stormwater management practices will be implemented and an erosion and sedimentation control barrier will be used to protect downgradient resource areas. Construction-related impacts will be minimized and disturbed areas will be stabilized and restored upon completion of construction.

HW has completed and submitted an online application, and is submitting nine copies of the NOI application, supporting documentation, and project plans directly to the Conservation Commission. One additional full size plan set is also included. A copy of the NOI has been filed with the Massachusetts Department of Environmental Protection (MassDEP), Western Regional Office. As the Applicant is a municipal entity, the project is exempt from filing fees. The Applicant will send notification of the pending public hearing to abutters in accordance with State and local filing regulations within the required timeframe.

If you need additional information please contact us at (508) 833-6600. Thank you.

Sincerely,

HORSLEY WITTEN GROUP, INC.

Amy M. Ball, PWS, CWS
Senior Ecologist

Justin L. Lamoureux, P.E.
Project Manager

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

NORTHAMPTON
City/Town

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

Note: Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

Rocky Hill Road (MA Rt. 66) to Easthampton Road (MA Rt. 10)
a. Street Address

Northampton
b. City/Town

01060
c. Zip Code

Latitude and Longitude:

42°18'20.85" N
d. Latitude

72°39'41.52" W
e. Longitude

37
f. Assessors Map/Plat Number

049-001
g. Parcel /Lot Number

2. Applicant:

Wayne
a. First Name

Feiden
b. Last Name

City of Northampton Planning & Sustainability
c. Organization

210 Main Street
d. Street Address

Northampton
e. City/Town

MA
f. State

01060
g. Zip Code

413-587-1265
h. Phone Number

i. Fax Number

wfeiden@northamptonma.gov
j. Email Address

3. Property owner (required if different from applicant): ☐ Check if more than one owner

a. First Name

b. Last Name

c. Organization

d. Street Address

e. City/Town

f. State

g. Zip Code

h. Phone Number

i. Fax Number

j. Email address

4. Representative (if any):

Amy
a. First Name

Ball
b. Last Name

Horsley Witten Group
c. Company

90 Route 6A
d. Street Address

Sandwich
e. City/Town

MA
f. State

02563
g. Zip Code

508-833-6600
h. Phone Number

i. Fax Number

aball@horsleywitten.com
j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

(municipal project - fee exempt)
a. Total Fee Paid

b. State Fee Paid

c. City/Town Fee Paid

A. General Information (continued)

6. General Project Description:

The proposed project is a mutli-use trail connecting the New Haven and Northampton Canal/Manhan Rail Trail at Easthampton Road (MA Route 10) to Rocky Hill Road (MA Route 66). The 2,630 LF trail will vary from 16 feet wide along an existing access road off Route 66 to 10 feet wide along the steeper slopes descending toward the Manhan Rail Trail. See attached for additional detail.

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

1. ☐ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Commercial/Industrial
4. ☐ Dock/Pier
5. ☐ Utilities
6. ☐ Coastal engineering Structure
7. ☐ Agriculture (e.g., cranberries, forestry)
8. ☐ Transportation
9. ☒ Other- **Multi-Use Trail**

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☐ Yes ☒ No

If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

2. Limited Project Type

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

a. County	b. Certificate # (if registered land)
Hampshire	
c. Book	**d. Page Number**
11784	194

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☐ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☒ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Bank	1. linear feet	2. linear feet
b. ☒ Bordering Vegetated Wetland	1. square feet	2. square feet
c. ☐ Land Under Waterbodies and Waterways	1,573 1. square feet	2,680 2. square feet
	3. cubic yards dredged	

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet	2. square feet
	3. cubic feet of flood storage lost	4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet	
	2. cubic feet of flood storage lost	3. cubic feet replaced
f. ☒ Riverfront Area	Rocky Hill Pond Brook - inland 1. Name of Waterway (if available) - **specify coastal or inland**	

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☒ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: 82,137 SF (square feet)

4. Proposed alteration of the Riverfront Area:

a. total square feet	b. square feet within 100 ft.	c. square feet between 100 ft. and 200 ft.
19,114	0	19,114

5. Has an alternatives analysis been done and is it attached to this NOI? ☒ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☐ Yes ☐ No

3. ☐ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Note: for coastal riverfront areas, please complete **Section B.2.f**. above.

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	1. square feet 2. cubic yards dredged	
c. ☐ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. ☐ Coastal Dunes	1. square feet	2. cubic yards dune nourishment

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
f. ☐ Coastal Banks	1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☐ Land Subject to Coastal Storm Flowage	1. square feet	

4. ☐ Restoration/Enhancement

If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.

a. square feet of BVW _____ b. square feet of Salt Marsh _____

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings _____ b. number of replacement stream crossings _____

C. Other Applicable Standards and Requirements

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Notice of Intent – Required Actions (310 CMR 10.11).

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

   a. ☒ Yes ☐ No

   If yes, include proof of mailing or hand delivery of NOI to:

   Natural Heritage and Endangered Species Program
   Division of Fisheries and Wildlife
   1 Rabbit Hill Road
   Westborough, MA 01581

   October 1, 2008
   b. Date of map

   If *yes*, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.1.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

   c. Submit Supplemental Information for Endangered Species Review*

      1. ☒ Percentage/acreage of property to be altered:

         (a) within wetland Resource Area — 40%/1.03 ac (percentage/acreage)

         (b) outside Resource Area — 1.57 ac (percentage/acreage)

      2. ☒ Assessor's Map or right-of-way plan of site

2. ☒ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

   (a) ☒ Project description (including description of impacts outside of wetland resource area & buffer zone)

   (b) ☒ Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.

C. Other Applicable Standards and Requirements (cont'd)

(c) ☐ MESA filing fee (fee information available at http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_fee_schedule.htm). Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

*Projects altering **10 or more acres** of land, also submit:*

(d) ☐ Vegetation cover type map of site

(e) ☐ Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☒ Separate MESA review ongoing. 15-34694 (a. NHESP Tracking #) 07/22/15 (b. Date submitted to NHESP)

3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. ☒ Not applicable – project is in inland resource area only b. ☐ Yes ☐ No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
1213 Purchase Street – 3rd Floor
New Bedford, MA 02740-6694
Email: DMF.EnvReview-South@state.ma.us

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: DMF.EnvReview-North@state.ma.us

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

C. Other Applicable Standards and Requirements (cont'd)

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

b. ACEC

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

a. ☐ Yes ☒ No

6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

a. ☐ Yes ☒ No

7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

a. ☒ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

2. ☐ A portion of the site constitutes redevelopment

3. ☐ Proprietary BMPs are included in the Stormwater Management System.

b. ☐ No. Check why the project is exempt:

1. ☐ Single-family house

2. ☐ Emergency road repair

3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☐ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☐ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

D. Additional Information (cont'd)

3. ☒ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☐ List the titles and dates for all plans and other materials submitted with this NOI.

Rocky Hill Greenway
a. Plan Title

Horsley Witten Group, inc. | Richard A. Claytor, Jr., P.E.
b. Prepared By | c. Signed and Stamped by

December 21, 2018 | 1' = 40'
d. Final Revision Date | e. Scale

f. Additional Plan or Document Title | g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. ☐ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☒ Attach Stormwater Report, if needed.

E. Fees

1. ☒ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

2. Municipal Check Number | 3. Check date

4. State Check Number | 5. Check date

6. Payor name on check: First Name | 7. Payor name on check: Last Name

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

Wayne Feiden As agent for the City of Northampton	March 19, 2019
1. Signature of Applicant	2. Date
3. Signature of Property Owner (if different)	4. Date
5. Signature of Representative (if any)	6. Date

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the “yes” box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

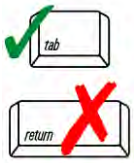
The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Applicant Information

1. Location of Project:

Rocky Hill Road (MA Rt. 66) to Easthampton Road (MA Rt. 10)	Northampton
a.	b. City/Town
N/A	(fee exempt)
c. Check number	d. Fee amount

2. Applicant Mailing Address:

Wayne		Feiden
a. First Name		b. Last Name
City of Northampton		
c. Organization		
210 Main Street Room 11		
d. Mailing Address		
Northampton	MA	01060
e. City/Town	f. State	g. Zip Code
413-587-1265		wfeiden@northamptonma.gov
h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different):

a. First Name		b. Last Name
c. Organization		
d. Mailing Address		
e. City/Town	f. State	g. Zip Code
h. Phone Number	i. Fax Number	j. Email Address

B. Fees

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

Fee should be calculated using the following process & worksheet. ***Please see Instructions before filling out worksheet.***

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract $12.50. To calculate the city/town share of the fee, divide the total fee in half and add $12.50.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee

Step 5/Total Project Fee: _____

Step 6/Fee Payments:

Total Project Fee: (fee exempt)
a. Total Fee from Step 5

State share of filing Fee: _____
b. 1/2 Total Fee **less $**12.50

City/Town share of filling Fee: _____
c. 1/2 Total Fee **plus** $12.50

C. Submittal Requirements

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
Box 4062
Boston, MA 02211

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

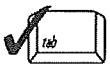
To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

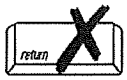
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.





A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the Massachusetts Stormwater Handbook. The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.[1] This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8[2]
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

[1] The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

[2] For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

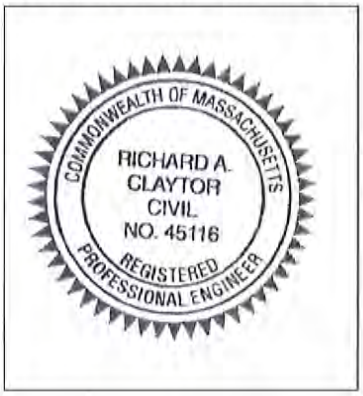
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



9-11-16

Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

☐ New development

☐ Redevelopment

☒ Mix of New Development and Redevelopment

Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- ☐ No disturbance to any Wetland Resource Areas
- ☐ Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- ☐ Reduced Impervious Area (Redevelopment Only)
- ☐ Minimizing disturbance to existing trees and shrubs
- ☐ LID Site Design Credit Requested:
  - ☐ Credit 1
  - ☐ Credit 2
  - ☐ Credit 3
- ☐ Use of "country drainage" versus curb and gutter conveyance and pipe
- ☐ Bioretention Cells (includes Rain Gardens)
- ☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- ☐ Treebox Filter
- ☐ Water Quality Swale
- ☒ Grass Channel
- ☐ Green Roof
- ☐ Other (describe): _____

Standard 1: No New Untreated Discharges

- ☐ No new untreated discharges
- ☒ Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- ☐ Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.

Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

☐ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.

☒ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.

☐ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

☐ Soil Analysis provided.

☐ Required Recharge Volume calculation provided.

☐ Required Recharge volume reduced through use of the LID site Design Credits.

☐ Sizing the infiltration, BMPs is based on the following method: Check the method used.

☐ Static ☐ Simple Dynamic ☐ Dynamic Field[1]

☐ Runoff from all impervious areas at the site discharging to the infiltration BMP.

☐ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.

☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.

☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:

- ☐ Site is comprised solely of C and D soils and/or bedrock at the land surface
- ☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
- ☐ Solid Waste Landfill pursuant to 310 CMR 19.000
- ☐ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.

☐ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.

☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

[1] 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.

Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.

☒ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.

☒ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.

☐ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:

- ☐ is within the Zone II or Interim Wellhead Protection Area
- ☐ is near or to other critical areas
- ☐ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
- ☐ involves runoff from land uses with higher potential pollutant loads.

☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.

☐ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.

Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

☐ The BMP is sized (and calculations provided) based on:

- ☐ The ½" or 1" Water Quality Volume or
- ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.

☐ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.

☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.

☒ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted ***prior to*** the discharge of stormwater to the post-construction stormwater BMPs.

☐ The NPDES Multi-Sector General Permit does ***not*** cover the land use.

☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.

☐ All exposure has been eliminated.

☐ All exposure has ***not*** been eliminated and all BMPs selected are on MassDEP LUHPPL list.

☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

☐ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.

☐ Critical areas and BMPs are identified in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

☒ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:

- ☐ Limited Project
- ☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
- ☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
- ☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
- ☒ Bike Path and/or Foot Path
- ☐ Redevelopment Project
- ☐ Redevelopment portion of mix of new and redevelopment.

☒ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.

☐ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures;
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.

☒ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has ***not*** been included in the Stormwater Report but will be submitted ***before*** land disturbance begins.

☐ The project is ***not*** covered by a NPDES Construction General Permit.

☐ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.

☒ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

☒ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:

- ☒ Name of the stormwater management system owners;
- ☒ Party responsible for operation and maintenance;
- ☒ Schedule for implementation of routine and non-routine maintenance tasks;
- ☒ Plan showing the location of all stormwater BMPs maintenance access areas;
- ☒ Description and delineation of public safety features;
- ☒ Estimated operation and maintenance budget; and
- ☒ Operation and Maintenance Log Form.

☐ The responsible party is ***not*** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:

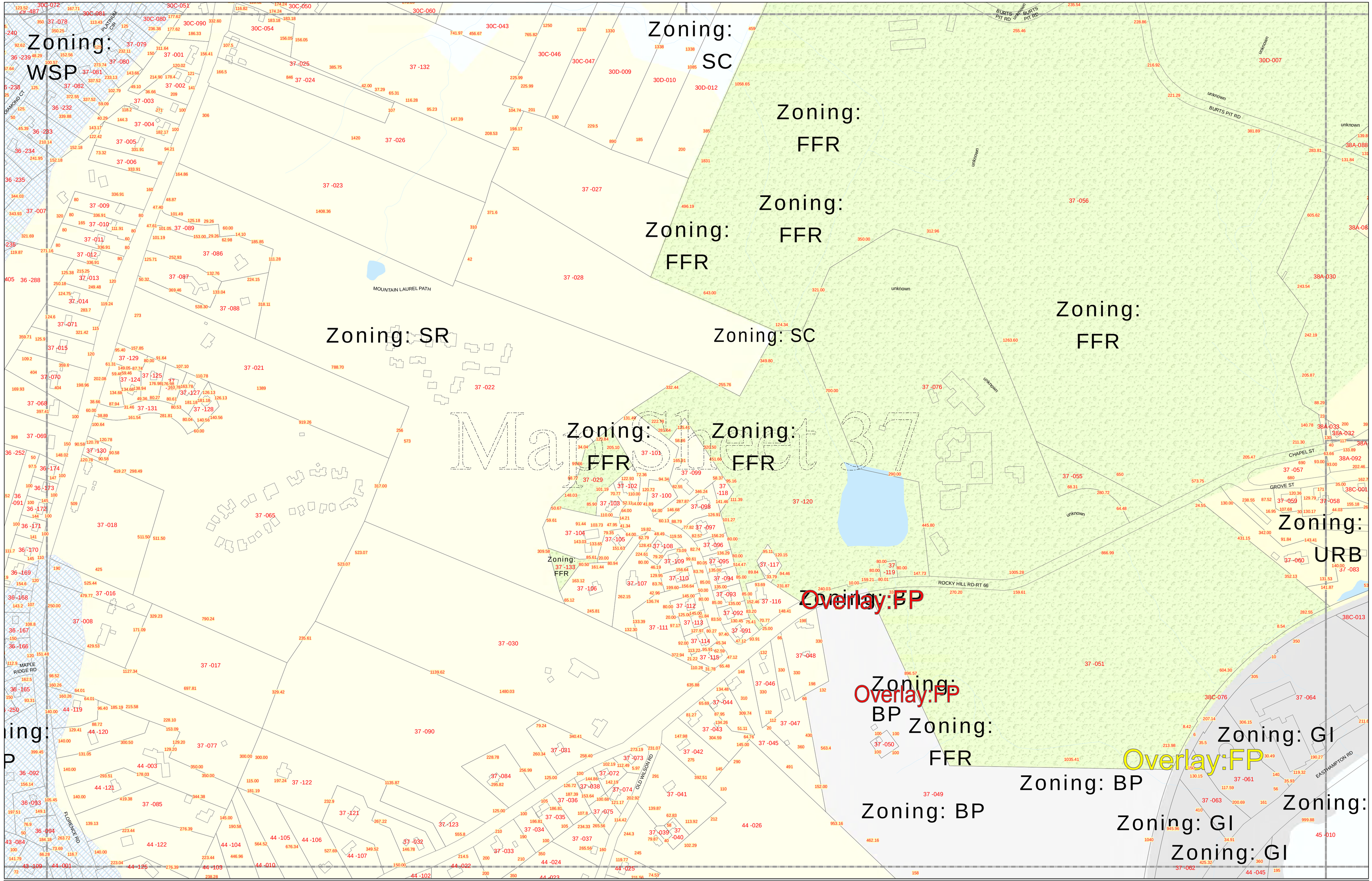
- ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
- ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

☒ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;

☐ An Illicit Discharge Compliance Statement is attached;

☐ NO Illicit Discharge Compliance Statement is attached but will be submitted ***prior to*** the discharge of any stormwater to post-construction BMPs.



Northampton Zoning Map

0 50 100 200 300 400 500 Feet
0 50 100 Meters

Projection: Massachusetts State Plane (NAD83)

These maps are not intended for use in conveyances and they contain errors and discrepancies.
Individuals requiring an authoritative property boundary or other location must retain the services of a professional land surveyor.

Parcel boundaries revision date: 01 January 2013

www.NorthamptonMA.gov e-mail: CityGIS@NorthamptonMA.gov

Map Sheet

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OBJECTID	FY	Map_Par_ID	MB	Owner1	Owner2	Owner3	OwnAdd	OwnCity	wnSta	OwnZip	Version
1	2019	38C-076-001	38C-076	MASSACHUSETTS ELECTRIC COMPANY		C/O PROPERTY TAX DEPT	40 SYLVAN RD	WALTHAM	MA	02451	2019-02-25
2	2019	37 -120-001	37 -120	CITY OF NORTHAMPTON	CITY HALL		210 MAIN ST	NORTHAMPTON	MA	01060	2019-02-25
3	2019	44 -014-805	44 -014	VERRILLO GIL F			254 OLD WILSON RD	FLORENCE	MA	01062	2019-02-25
4	2019	37 -051-001	37 -051	DEPT OF FOOD & AGRICULTURE		C/O UNIVERSITY OF MASS	101 UNIVERSITY DR	AMHERST	MA	01002	2019-02-25
5	2019	44 -027-001	44 -027	OPEN & SHUT LLC			30 LYMAN ST	EASTHAMPTON	MA	01027	2019-02-25
6	2019	37 -047-001	37 -047	SEK ANDREW & IRENA MARIA ET AL			P O BOX 352	NORTHAMPTON	MA	01061	2019-02-25
7	2019	37 -063-001	37 -063	RICHARD'S FUEL INC.			79 UNION STREET	EASTHAMPTON	MA	01027	2019-02-25
8	2019	37 -045-001	37 -045	PAGACZ JULIAN S			206 B ROCKY HILL RD	FLORENCE	MA	01062	2019-02-25
9	2019	44 -026-001	44 -026	AUGUST JOYCE L TRUSTEE OF THE	HERBERT R AUGUST NOMINEE	TRUST	50 OLD WILSON RD	NORTHAMPTON	MA	01062	2019-02-25
10	2019	44 -014-001	44 -014	VERRILLO GIL F			254 OLD WILSON RD	FLORENCE	MA	01062	2019-02-25
11	2019	44 -014-002	44 -014	VERRILLO GIL	MAIL: SBA COMMUNICATIONS CORP	ATT: TAX DEPT	8051 CONGRESS AVE	BOCA RATON	FL	33482	2019-02-25
12	2019	44 -031-001	44 -031	RAYMOND ROBERT D			P O BOX 70	GOSHEN	MA	01032	2019-02-25
13	2019	37 -049-001	37 -049	NORTHAMPTON CITY OF		C/O PLANNING DEPT	210 MAIN ST ROOM 11	NORTHAMPTON	MA	01060	2019-02-25
14	2019	44 -028-001	44 -028	ZACHARA SHANE M			321 EASTHAMPTON RD	NORTHAMPTON	MA	01060	2019-02-25
15	2019	37 -116-001	37 -116	KRIVISKEY BRUCE M & ALISON F			23 ICE POND DR	FLORENCE	MA	01062	2019-02-25
16	2019	37 -048-001	37 -048	HATT KENNETH L & MARGARET A			170 ROCKY HILL RD	FLORENCE	MA	01062	2019-02-25
17	2019	37 -050-001	37 -050	TENNESSEE GAS TRANSMISSION CO		C/O PROPERTY TAX DEPT	P O BOX 4372	HOUSTON	TX	77210	2019-02-25
18	2019	37 -134-001	37 -134	BERKSHIRE GAS			115 CHESHIRE RD	PITTSFIELD	MA	01201	2019-02-25
19	2019	44 -138-001	44 -138	CITY OF NORTHAMPTON		C/O PLANNING DEPT	CITY HALL	NORTHAMPTON	MA	01060	2019-02-25

Notification to Abutters
Under the Massachusetts Wetlands Protection Act
and the Northampton Wetlands Ordinance

In accordance with the second paragraph of the Massachusetts General Laws Chapter 131, Section 40, you are hereby notified of the following:

The name of the applicant is _Wayne Feiden, City of Northampton_____.

The applicant has filed a *Notice of Intent* with the Northampton Conservation Commission seeking permission to remove, fill, dredge or alter an Area Subject to protection Under the Wetlands Protection Act (General Laws Chapter 131, Section 40) and the Northampton Wetlands Protection Ordinance (Chapter 337).

The address of the lot where the activity is proposed is _between Rocky Hill Road and Easthampton Road_.

Copies of the Notice of Intent may be examined at the Office of Planning and Community Development, 210 Main Street, Room 11, between the hours of 8:30 a.m. and 4:30 p.m., Monday – Friday, and online at www.northamptonma.gov/opd

Copies of the Notice of Intent and more information may be obtained from either (check one) the applicant by calling this telephone number (413) 587-1265 between the hours of 8:00 and 4:30 on the following days of the week: _Monday through Friday___.

Information regarding the date, time, and place of the public hearing may be obtained from the Office of Planning & Sustainability by calling (413) 587- 1263. Conservation Commission agendas are also posted at http://northamptonma.gov/AgendaCenter/Conservation-Commission-7

NOTE: Notice of the public hearing, including its date, time, and place, will published at least five (5) days in advance of the hearing in the Daily Hampshire Gazette, and will be posted in a 'Public Notice' sign on the subject property.

NOTE: Notice of the public hearing, including its date, time, and place, will be posted in the Northampton City Hall not less than forty-eight (48) hours in advance.

NOTE: You also may contact the nearest Department of Environmental Protection Regional Office for more information about this application or the Wetlands Protection Act. To contact DEP, call the Western Region at (413) 784-1100.

AFFIDAVIT OF SERVICE
Under the Massachusetts Wetlands Protection Act
And the Northampton Wetlands Ordinance

(To be submitted to the Massachusetts Department of Environmental Protection and the Conservation Commission when filing a Notice of Intent)

I, Wayne Feiden,
Name of person making affidavit

hereby certify under the pains and penalties of perjury that on March 19, 2019
date
I gave notification to abutters in compliance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40, and the DEP Guide to Abutter Notification dated April 8, 1994, in connection with the following matter:

A Notice of Intent was filed under the Massachusetts Wetlands Protection Act by
Wayne Feiden, City of Northampton with the
Name of Applicant

Northampton Conservation Commission on March 19, 2019 for property
date
located at **between Rocky Hill Road and Easthampton Road**
Address of land where work is proposed

The form of the notification and a list of the abutters to whom it was given and their addresses, are attached to this Affidavit of Service.

Wayne Feiden as agent for the City March 19, 2019

Applicant Signature Date

PROJECT NARRATIVE

Rocky Hill Greenway Multi-Use Trail
Northampton, Massachusetts

Notice of Intent Project Narrative

March 2019

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APPENDIX A – Wetland Mitigation Plan

Rocky Hill Greenway Multi-Use Trail
Northampton, Massachusetts

Notice of Intent Project Narrative

March 2019

SUMMARY

The Applicant, the City of Northampton Planning & Sustainability, proposes a multi-use pedestrian and bicycle trail extending from Rocky Hill Road (MA Route 66) to Easthampton Road (MA Route 10) in Northampton, Massachusetts. This spur trail will serve to connect the New Haven and Northampton Canal/Manhan Rail Trail with the Rocky Hill Road neighborhood. The approximately 2,630-foot long project will be located entirely within property that has been deeded to the City of Northampton or is within easements provided by the Massachusetts Electric Company.

A portion of the proposed bicycle and pedestrian trail will occur within Bordering Vegetated Wetland and its buffer zone, as well as a Riverfront Area, much of which has been disturbed. These resource areas are regulated under the Massachusetts Wetlands Protection Act and the City of Northampton Wetlands Ordinance (Chapter 337 of the Northampton Administrative Code) and associated regulations. Resource area impacts will be avoided and minimized to the extent practicable by using an existing dirt driveway and footpath, while still maintaining a trail that is safe and adheres to the local building code.

An erosion and sedimentation control barrier will be used to further protect downgradient resource areas, and construction-related impacts will be minimized and restored upon completion of construction. Stormwater management practices will be implemented to the extent practicable for this project.

1.0 INTRODUCTION

The City of Northampton proposes the Rocky Hill Greenway Multi-Use Trail, a 2,630 linear foot (0.50 mile) multi-use trail designed as a spur trail to connect two existing trails in the vicinity. The proposed project is located entirely within a City-owned parcel situated between Rocky Hill Road (MA Route 66) and Easthampton Road (MA Route 10) in Northampton, Massachusetts.

The proposed trail project will improve pedestrian and bicycle facilities by connecting the residential areas along Rocky Hill Road and Ice Pond Drive to the New Haven and Northampton Canal / Manhan Rail Trail. Bicyclists and pedestrians will benefit from being able to connect to these corridors more directly and with limited interaction with vehicular traffic, providing a safer and more direct route to the existing rail trail. Additionally, it will provide access to an eventual multi-use trail serving the southwestern and western half of the City, which is not currently served by any multi-use trails.

2.0 PROJECT BACKGROUND AND PURPOSE

The proposed Rocky Hill Greenway Multi-Use Trail will support the City's recreational goals by adding to the existing network of bike paths in the region and encouraging non-motorized travel, advancing the goals of the City of Northampton *Open Space, Recreation, and Multi-Use Trail Plan* (2018-2025). This Plan seeks (among other goals) to maintain vibrant urban centers, develop multi-use trails for easy public access, and create recreational opportunities while protecting valuable habitat and natural resources. The *Open Space, Recreation & Multi-Use Trail Plan* is an adoptive component of the *Sustainable Northampton Comprehensive Plan* (2008) and has been adopted or endorsed by a number of City Boards and approved by the Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs.

By implementing this project, the City will progress toward three of the major goals outlined in the Massachusetts Department of Transportation (MassDOT) 2012 *GreenDOT Implementation Plan*, which include:

- Design of multi-modal transportation system;
- Promoting healthy transportation and livable communities; and
- Tripling of the bicycle and pedestrian transportation modes.

The project also supports the seven-corridor, 788-mile statewide system of bicycling routes, known as the Bay State Greenway. A pilot sign program in the Pioneer Valley is currently underway, linking a number of off-road paths and on-road routes in Massachusetts and connecting to systems in Connecticut and Vermont.

3.0 GENERAL SITE DESCRIPTION

The proposed Rocky Hill Greenway Multi-Use Trail will be sited within a City-owned parcel (37-049-001) located between Rocky Hill Road (MA Route 66) and Easthampton Road (MA Route 10) in Northampton, Massachusetts (Figures 1 and 2).

The existing conditions at the site are varied. The northern portion of the proposed trail, starting at Rocky Hill Road, is currently occupied by a gravel driveway, which leads to a gas pumping station owned by the Tennessee Gas Transmission Company of Houston, Texas (Parcel 37-050-001). The proposed trail then passes through an easement of the Massachusetts Electric Company, which has overhead utility lines running through the maintained corridor. After crossing the easement, the southern portion of the proposed trail follows part of an existing footpath and then winds through undeveloped woodland area with grass, shrubs, and trees before connecting with the existing Manhan Rail Trail.

3.1 FEMA Designation

According to the FEMA *Flood Insurance Rate Map* (Community Panel No. 250167 0002 A, effective April 3, 1978), the entire site is located within Zone C, *areas of minimal flooding* (Figures 3A and 3B). Zone C is considered to be outside of the 500-year floodplain.

3.2 State-listed Rare Species Habitat

According to the most recent version of the *Massachusetts Natural Heritage Atlas* (2017), the proposed trail is **not** in proximity to Estimated Habitat of Rare Wildlife and Priority Habitat of Rare Species as designated by the Massachusetts Natural Heritage and Endangered Species Program (NHESP)(Figure 4).

3.3 Wetland Resource Areas

3.3.1 Resource Area Delineation Methodology

Wetland resource areas were identified by Horsley Witten Group, Inc. (HW) wetlands biologists during site visits in March 2015 with supplemental site visits in August & September 2017. Several segments of Bordering Vegetated Wetlands as well as the associated buffer zone, and a segment of Riverfront Area were identified within the project area. HW followed wetland resource area identification and on-site delineation procedure guidelines described in the Massachusetts Department of Environmental Protection (DEP) handbook, entitled *Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act* (March,

1995), the Massachusetts *Wetlands Protection Act* Regulations, and the City of Northampton Wetland Protection Ordinance. The limit of BVW is demarcated at the point where 50% or greater of the vegetation is considered wetland indicator species and where hydric conditions are encountered, and is marked with consecutively numbered, pink flagging stations.

The mean annual high water line (MAHW) of a river is defined as "*the line that is apparent from visible markings or changes in the character of soils or vegetation due to the prolonged presence of water and that distinguishes between predominantly aquatic and predominantly terrestrial land*" (310 CMR 10.58(2)(a) 2). Pursuant to these regulations, field indicators of "bankfull conditions" (changes in slope, changes in vegetation, stain lines, top of point bars, changes in bank materials or bank undercuts) were used to determine the MAHW associated with an unnamed perennial stream originating from Rocky Hill Pond. MAHW is labeled with sequentially numbered, blue flagging stations.

A brief description of the regulatory definitions and the observed resources areas is provided below.

3.3.2 Bordering Vegetated Wetland

Bordering Vegetated Wetlands are defined under Massachusetts Wetlands Protection Act Regulations at 310 CMR 10.55(2)(a) as, "*freshwater wetlands that border on creeks, rivers, streams, ponds and lakes. The types of freshwater wetlands are wet meadows, marshes, swamps and bogs. Bordering Vegetated Wetlands are areas where the soils are saturated and/or inundated such that they support a predominance of wetland indicator plants. The boundary of Bordering Vegetated Wetland is defined at 310 CMR 10.55 (2)(c) as the line within which 50% or more of the vegetational community consists of wetland indicator plants and saturated or inundated conditions exist.*" The *Northampton Wetlands Ordinance* does not have a separate definition for BVW.

The BVW consists of a series of hill-side seeps associated with an unnamed perennial stream that traverses the northwestern portion of the site. THE BVW is best described as a forested red maple swamp dominated by red maple (*Acer rubrum*) with a shrub community supporting winterberry (*Ilex verticillata*), arrowwood (*Viburnum dentatum*), nannyberry (*Viburnum lentago*), as well as clumps and patches of honeysuckle (*Lonicera* sp.) and occasional multiflora rose (*Rosa multiflora*). Sensitive fern (*Onoclea sensibilis*) was the dominant groundcover species observed during the site evaluation. Witch-hazel (*Hamamelis virginiana*) and sapling gray birch (*Betula populifolia*) were observed along the wetland boundary, as well as occasional entanglements of Oriental bittersweet (*Celastrus orbiculatus*).

Areas in the maintained right-of-way consist of a low-growing shrub community/herbaceous-dominant plant community (e.g., Palustrine Scrub-Shrub Wetland (PSS) or Palustrine Emergent Wetland (PEM) communities) dominated by soft rush (*Juncus effusus*), meadowsweet (*Spiraea*

latifolia), sensitive fern, and purple loosestrife (*Lythrum salicaria*) with gray birch and bittersweet vines.

Adjacent upland areas are dominated by eastern white pine (*Pinus strobus*) and mixed oak (*Quercus* spp.) with witch hazel dominating the shrub community.

Flagging stations A1-A10; A11-A15; B1-B17; B-18-B23; C1-C-9; C10-C23; C24-C36; and E1-E43represent the extent of BVW along the proposed pathway footprint.

3.3.3 Riverfront Area

Riverfront Area is defined at 310 CMR 10.58(2)(a) as, *"land between a river's mean annual high water line and a parallel line measured horizontally. The riverfront area may include or overlap other resource areas or their buffer zones. The riverfront area does not have a buffer zone."* According to 310 CMR 10.58(2)(a)(1), *"A river is any natural flowing body of water that empties to any ocean, lake, pond, or other river which flows throughout the year."* Furthermore, 310 CMR 10.58(2)(a)(3) states that, *"The riverfront area is the area of land between a river's mean annual high-water line measured horizontally outward from the river and a parallel line located 200 feet away."* The *Northampton Wetlands Ordinance* does not have a separate definition for Riverfront Area.

An unnamed perennial stream flows from Rocky Hill Pond, located to the northeast of the project site, to the south into Pynchon Meadows and ultimately into the Connecticut River. This stream is shown as perennial on the most recent USGS Topographic Map (Easthampton Quadrangle) and therefore meets the regulatory definition of a perennial stream with an associated Riverfront Area. Mean annual high water (MAHW) was identified in the field by HW to the northeast and approximately 40 feet lower in elevation than the existing gravel road. The 200-foot Riverfront Area measured extends beyond the existing gravel road. Flagging stations MAHW1-MAHW4 were placed at the limit of bankfull conditions along this stream.

4.0 PROPOSED PROJECT

4.1 Project Description

The proposed 0.50-mile Rocky Hill Greenway Multi-Use Trail will be constructed of bituminous asphalt pavement and will vary in width between 10 and 16 feet to accommodate site conditions. At its northern end, off of Rocky Hill Road, the trail will following the existing gravel driveway and will be 16 feet wide; this portion of the trail will act as a shared multi-use trail and driveway, allowing restricted vehicle access to the existing gas pumping station. The trail will then narrow to ten feet in width at the wetland crossing, and will be limited to pedestrians and bicycles for the remaining length of the spur trail to the junction with the existing Manhan Rail Trail.

The proposed project also includes retaining walls, culvert replacements, and stormwater management areas. Retaining walls are only proposed at the HC parking spot. New culverts are proposed to replaced undersized existing culverts or in locations that the trail crosses existing drainage ways/ditches. For the trail section that is proposed outside an existing gravel trail or driveway (south of the overhead wire easement crossing) we are proposing to manage stormwater via a vegetated swale.

Provisions for construction will include a Stormwater Pollution Prevention Plan (SWPPP) that must be followed by the Contractor, and will be provided under separate cover. For work within the resource area, the SWPPP will require the Contractor to implement measures to ensure the protection outside the limit of work that will include:

- Rubber tire track machinery;
- Swamp mats for temporary access over intermittently flowing resources;
- Erosion control measures;
- Stockpiling outside the resource area;
- Construction timing; and
- Other measures as described in the Project Plans and SWPPP.

Details of the proposed project are provided on the enclosed site plans prepared by HW, entitled "*Rocky Hill Greenway Multi-Use Trail, Northampton, Massachusetts*" (dated March 2016).

4.2 Project Alternatives

The City explored several alternative pathway locations including different routes as well as different materials and designs, in addition to a No-Build alternative, in order to avoid and minimize impacts within wetland resource areas while still resulting in an economically viable project.

4.2.1 Propose Project and Preferred Alternative

The preferred alternative is the proposed project which utilizes an existing gravel driveway and existing footpath. It is the preferred alternative because it advances the goals of the City of Northampton to develop multi-use trails for easy and safe public access. The proposed project site is located strategically between a residential neighborhood and an existing trail and has part of a trail already built.

Direct resource area impacts have been minimized by following the existing access driveway and following the existing gravel footpath to the extent practicable. Additionally, the path meanders through the wooded area to avoid impacts to the wetlands and other natural resources as much as possible. All construction-related temporary impacts will be restored upon completion of that portion of the pathway, and all construction staging areas will be located outside of wetland resource areas.

4.2.2 Alternative Trail Location

The City considered establishing a bike route along the existing surface roads (along Route 66/Chapel Street to West Street to the intersection with South Street/Route 10), by creating a bike lane to establish a connection with the Manhan Rail Trail. This would increase connectivity to an existing trail and would reduce wetland resource impacts, however it would not meet the goals to reduce bicycle and pedestrian exposure to vehicular traffic and improve safety. Additionally, it would require the existing roads to be reduced in width to accommodate a bike lane along the outer edge of the road. It would also not meet the City's goal of increasing multimodal paths, as pedestrians would not likely use a bike lane along an existing roadway.

Another alternative trail location that was considered was to stay along the utility easement. However, it was determined that there would be more considerable unavoidable wetland impacts with this footprint, as well as more work within Riverfront.

4.2.3 No-Build Alternative

A No-Build alternative would not result in impacts to wetland resources; however, this would not meet the project purpose of extending a network of safe multi-modal trails in the City.

4.3 Affected Jurisdictional Areas

Given the preferred location of the trail, portions of the project will necessitate work within wetland resource areas as well as within the associated buffer zone. These impacts have been avoided and minimized to the extent practicable by following the existing gravel roadway and an existing gravel footpath that traverses the wetland areas; however, portions of the proposed activities will occur within BVW and Riverfront Area, and within the locally-regulated 100-foot buffer to the BVW.

Specifically, the proposed trail will directly impact 1,573 SF of BVW; a total of 188 linear feet of the path will occur within BVW. Approximately 40,924 SF of the 100-foot buffer to BVW will also be directly impacted by the proposed trail. In addition, approximately 19,114 SF of Riverfront Area, much of which is previously-disturbed, will be impacted by the proposed project.

Table 1. Resource Area, in square feet, impacted by proposed project.

LOCATION	IMPACT AREA (SF)	IMPACT AREA (AC)
BVW	1,573	0.03
BVW Buffer	40,924	0.9
Riverfront Area 0-100 ft	0	0
Riverfront Area 100-200 ft	19,114	0.4

A discussion on how the proposed project will avoid and minimize these impacts, as well as the proposed mitigation measures, including wetland replacement, is provided below.

5.0 PROTECTION OF RESOURCE AREA INTERESTS

As indicated above, the proposed project will result in unavoidable activities will occur within BVW and Riverfront Area, as well as within the locally-regulated 10-foot buffer zone to BVW.

A discussion of how the proposed project is designed to meet the performance standards under the Massachusetts Wetlands Protection Act Regulations and the City of Northampton Wetlands Ordinance (Chapter 337 of the Northampton Administrative Code) and regulations follows.

5.1 Bordering Vegetated Wetland – Wetland Replacement

The following performance standards, as stated in 310 CMR 10.55(4), will be met to the extent practicable for work within BVW. Direct impacts within BVW will occur where the trail traverses a segment of BVW that currently spans across an existing gravel footpath. A total of 1,573 SF of BVW will be mitigated through the creation of a wetland replacement area approximately 2,680SF. As noted above, impacts to the wetland area have been avoided and minimized to the extent practicable, through the project design. Proposed wetland replacement area is designed to meet the performance standards under 310 CMR 10.55(4)(b)(1 through 7) as well as the provisions set forth by MassDOT for wetland replacement.

Wetland replacement activities will generally include the removal of fill material and debris as well as existing vegetation within the footprint of the wetland replacement area, regrading and establishment of a connection to the existing intermittent channel and to the hillside seeps, introduction of high-organic content soils, introduction of coarse woody debris or boulders to improve habitat diversity, stabilization of disturbed soils with native seed mixes, and revegetation of wetland area with native plants to provide for a 75% native plant community within all impacted areas after two growing seasons (as required under 310 CMR 10.55(4)(b)(6)). A qualified professional (Wetlands Specialist) will oversee all phases of the wetland restoration efforts to ensure that requirements set forth in the proposed plan are met (see below). This individual will also be granted the discretion to make slight field adjustments to ensure wetland replacement success.

This wetland replacement plan was developed based upon observations made by HW of existing conditions and is modeled after the Massachusetts Inland Wetland Replication Guidelines (March 2002) prepared by MassDEP (see attached checklist). The replacement plan is also designed to meet the regulatory criteria for wetland replacement set forth in 310 CMR 10.55(4)(b)(1) through (7).Details of these activities are provided on Sheet C-16 of the enclosed plan set entitled “Multi-Use Rocky Hill Greenway, Northampton, Massachusetts” prepared by HW and dated April 2016.

Details of the proposed wetland replacement are provided in Appendix B.

5.2 Riverfront Area Redevelopment

Activities within Riverfront Area will occur outside of the 0-100-foot Riverfront Area, and will occur within previously degraded areas including the existing access road. The following performance standards for redevelopment in Riverfront Area will be met for work within Riverfront Area.

(a) At a minimum, proposed work shall result in an improvement over existing conditions of the capacity of the riverfront area to protect the interests identified in M.G.L. c. 131 § 40.

Work within the outer Riverfront Area will involve re-use of en existing gravel (degraded) roadway. As part of the proposed project, existing culverts will be replaced to accommodate existing flows across the access road and footpath. A portion of the proposed wetland replacement areas will be located in Riverfront Area where materials from previous clearing activities had been dumped. Invasive species will be managed as part of the wetland replacement activities.

(b) Stormwater management is provided according to standards established by the Department.

Stormwater management measures will be provided to the extent practicable, although these measures will occur outside of Riverfront Area.

(c) Within 200 foot riverfront areas, proposed work shall not be located closer to the river than existing conditions or 100 feet, whichever is less, or not closer than existing conditions within 25 foot riverfront areas, except in accordance with 310 CMR 10.58(5)(f) or (g).

The proposed project will occur within Riverfront Area along existing paved or otherwise degraded Riverfront Area, but no closer to the river than under existing conditions with the exception of the wetland replacement areas. No work will occur within the inner 0-100-foot Riverfront Area.

(d) Proposed work, including expansion of existing structures, shall be located outside the riverfront area or toward the riverfront area boundary and away from the river, except in accordance with 310 CMR 10.58(5)(f) or (g).

The proposed project will occur along existing paved or otherwise degraded Riverfront Area but no closer to the unnamed perennial stream than under existing conditions with the exception of the proposed wetland replacement areas.

(e) The area of proposed work shall not exceed the amount of degraded area, provided that the proposed work may alter up to 10% if the degraded area is less than 10% of the riverfront area, except in accordance with 310 CMR 10.58(5)(f) or (g).

Not applicable. The Project will result in redevelopment of an existing compacted gravel roadway. Approximately 23 percent (19,114 SF) of the Riverfront Area on this lot (82,137 SF) is currently degraded. Portions of the proposed wetland replacement areas will result in creation of wetland areas within Riverfront Area that is currently strewn with debris. Invasive species will be managed as part of the wetland replacement activities.

(f) When an applicant proposes restoration on-site of degraded riverfront area, alteration may be allowed notwithstanding the criteria of 310 CMR 10.58(5)(c), (d), and (e) at a ratio in square feet of at least 1:1 of restored area to area of alteration not conforming to the criteria. Areas immediately along the river shall be selected for restoration. Alteration not conforming to the criteria shall begin at the riverfront area boundary. Restoration shall include:

1. *removal of all debris, but retaining any trees or other mature vegetation;*
2. *grading to a topography which reduces runoff and increases infiltration;*
3. *coverage by topsoil at a depth consistent with natural conditions at the site; and*
4. *seeding and planting with an erosion control seed mixture, followed by plantings of herbaceous and woody species appropriate to the site;*

(Not applicable)

(g) When an applicant proposes mitigation either on-site or in the riverfront area within the same general area of the river basin, alteration may be allowed notwithstanding the criteria of 310 CMR 10.58(5)(c), (d), or (e) at a ratio in square feet of at least 2:1 of mitigation area to area of alteration not conforming to the criteria or an equivalent level of environmental protection where square footage is not a relevant measure. Alteration not conforming to the criteria shall begin at the riverfront area boundary. Mitigation may include off-site restoration of riverfront areas, conservation restrictions under M.G.L. c. 184, §§ 31 to 33 to preserve undisturbed riverfront areas that could be otherwise altered under 310 CMR 10.00, the purchase of development rights within the riverfront area, the restoration of bordering vegetated wetland, projects to remedy an existing adverse impact on the interests identified in M.G.L. c. 131, § 40 for which the applicant is not legally responsible, or similar activities undertaken voluntarily by the applicant which will support a determination by the issuing authority of no significant adverse impact. Preference shall be given to potential mitigation projects, if any, identified in a River Basin Plan approved by the Secretary of the Executive Office of Environmental Affairs.

(Not applicable)

5.3 BVW 100-Foot Buffer Zone

The *Northampton Wetlands Ordinance* maintains a 100-foot buffer zone around BVW. Activities associated with this project will occur within the buffer zone by necessity of the

project location. The multi-use trail is not anticipated to negatively impact the functions and values of the buffer.

In accordance with the provisions in the City of Northampton Wetlands Ordinance Regulations, the Applicant requests relief from the standards for work within 100 feet of resource areas. Relief is requested because the required location of proposed trail is within portions of the buffer zone and BVW associated with an unnamed perennial stream.

5.4 Local Ordinance Performance Standards

The *Northampton Wetlands Ordinance* contains performance standards for wetland resource areas and the 100-foot buffer to resource areas under §337-10(E). Included in this section is a provision for multi-use trails:

> *"(2) The Commission shall not permit alteration within resource areas or their associated protected zones, subject to the following exceptions:*
>
> *… (c) Limited projects, as defined by the Massachusetts Wetlands Protection Act, and walking and multiuse trails designed for nonmotorized use."*

The proposed Rocky Hill Greenway Multi-Use Trail falls under this provision. Proposed mitigation measures include providing wetland replacement (see above and in Appendix B) as well as providing improvements within the Riverfront Area (which also include portions of the 100-foot buffer zone to BVW. Additional discussion of how the proposed project is designed to meet the provisions of the local Ordinance is provided below.

5.4.1 Protecting Adjoining Premises from Detrimental Uses

The abutting land uses around the property are primarily residential and wooded areas. The proposed project will not cause any detrimental uses to adjoining premises. In fact, the proposed trail will improve pedestrian and bicycle facilities by connecting the residential areas along Rocky Hill Road and Ice Pond Drive to the New Haven and Northampton Canal/Manhan Rail Trail. Local residents and visitors will benefit from being able to connect to these existing and future corridors more directly and with limited interaction with vehicular traffic.

5.4.2 Minimizing and Mitigating Traffic Impacts

The proposed project is not anticipated to add to traffic congestion issues in the area. It will include 4 foot-wide shared shoulders marked for bicycle accommodation along Rocky Hill Road to connect the neighborhood at Ice Pond Drive. Secondary asset improvements include new project signage, restriping of Rocky Hill Road between Ice Pond Drive and the proposed trailwill be necessary to maintain appropriate lane and shoulder widths for bicycle accommodation adjacent to the project.

5.4.3 Promoting Harmonious Relationships between Structures and Open Space

The proposed project is designed to enhance the City's commitment to provide alternatives for non-vehicular travel and to be consistent with the goals detailed in the City of Northampton Open Space, Recreation, and Multiuse Trail Plan (2011-2018). Additionally, the project is designed to minimally impact the surrounding natural resources.

5.4.4 Protecting the General Welfare

As indicated above, the portion along Rocky Hill Road and access to the trail will be well marked. All proposed trail grades are 4.5% or less and areas spanning a culvert are proposed to have pedestrian barriers as well as sections with slopes greater than 3:1.

5.4.5 Avoiding Overload on City Resources and Mitigating Impacts

The proposed project will reduce overload on City resources by providing additional non-vehicular transportation opportunities thereby mitigating congestion and vehicular emissions.

5.4.6 Promoting City Planning Objectives

The proposed project is in keeping with the goals and objectives of the City of Northampton Open Space, Recreation, and Multiuse Trail Plan as well as the Northampton Community Plan to maintain vibrant urban centers, develop multi-use trails for easy public access, and create recreational opportunities while protecting valuable habitat and natural resources.

5.4.7 Meeting Zoning Requirements

The proposed project meets the zoning requirements, which consist of Business Park (BP), General Industry (GI), Suburban residential (SR), and Farms, Forest, Rivers (FFR). Which are all compatible with a municipal facility that is noncommercial recreational.

5.5 Erosion and Sedimentation Control

The Applicant proposes to protect the resource areas by implementing a sedimentation and erosion control program for the project. A sediment and erosion control barrier consisting of siltation sock (also referred to as mulch sock or silt sock) will be placed at the limit of work and/or as shown in the project plans. Erosion control barriers will remain in place and will be maintained in good condition until all work is complete and all soils have been stabilized. A temporary access way (also referred to as a haul road) of natural mulch material will be placed within the resource area to facilitate the installation of the helical piles and contain the work area within the designated limits.

6.0 STORMWATER MANAGEMENT

The proposed project meets the definition of a mix of development and redevelopment under the Massachusetts Stormwater Handbook - Stormwater Management Standards (Stormwater Handbook). Per the Stormwater Handbook the pedestrian trail project is subject to the

Standards to the maximum extent practicable. We offer the following responses with respect to meeting the Stormwater Standards:

Standard 1. No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

The bicycle/pedestrian trail is designed such that no new stormwater conveyances will result in any erosion or sedimentation to adjacent resource areas. Stormwater runoff from the paved bicycle trail will be collected and/or filtered by surface stabilized grass swales/channels, grassed filter strips, and/or stone (riprap) slopes/check dams that will promote sediment/debris removal and energy dissipation of the runoff prior to discharging to the down gradient wetland areas.

Standard 2. Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This Standard may be waived for discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04.

Proposed best management practices have been included to maintain post-development peak discharge rates equal to pre-development rates to the maximum extent practicable. Steep sections of the paved bike trail will also be cross sloped to sheet runoff to grassed swales located along the shoulders to reduce concentrated flows. Grass swales are equipped width stone check dams to further reduce stormwater velocity and flow and promote filtering and recharge to groundwater.

Standard 3. Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.

The use of existing and proposed drainage swales and stone shoulders will result in runoff sheet flow from the new paved trail prior to discharging to resource (Note: this runoff is considered free from any vehicular activity pollutants). Runoff that sheet flows over pervious surfaces prior to discharge to resource areas is an acceptable method for stormwater recharge according to the Stormwater Handbook. Therefore, annual recharge from the proposed bicycle trail will be approximately equal to or slightly greater than existing recharge volumes.

<u>Standard 4</u>. Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This Standard is met when:

- ***Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;***
- ***Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and***
- ***Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.***

A general long-term pollution prevention plan is provided below. The SWPPP will provide resource protection requirements for the construction period. The trail will not be subject to vehicle traffic and therefore will not be subject to sanding operations. For these factors the TSS loading will be equal or less in post construction.

<u>Standard 5</u>. For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53 and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

Not applicable. No area on the proposed site has been designated as a land use with higher potential pollutant loads.

<u>Standard 6</u>. Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A "storm water discharge" as defined in 314 CMR 3.04(2)(a)1 or (b) to

an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of a public water supply.

Not applicable.

Standard 7. A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

Portions of the project are redevelopment. These sections are between Rocky Hill Road and the gas substations and the maintenance path servicing the overhead wire easement. The section of trail that traverses the wooded section is considered new development and therefore we have included stormwater management for this section.

Standard 8. A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.

The erosion and sediment control devices that will be implemented during construction of the project are shown on the site plans. They include siltation socks adjacent to all resource areas and designated stockpile/staging areas, retaining walls, and mulch surface treatment for disturbed areas. Details are provided on the site plans.

Standard 9. A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.

An operations and maintenance plan will be included in the Stormwater Pollution Prevention Plan (SWPPP) that will be included in the Contract Documents.

Standard 10. All illicit discharges to the stormwater management system are prohibited.

There will be no illicit discharges to any resource area or stormwater management system/structure as part of this project.

7.0 POST CONSTRUCTION OPERATION AND MAINTENANCE

In conformance with Standard 9 of the Stormwater Standards we offer the following information for Post Construction Operation and Maintenance of the stormwater system associated with the proposed Multi-Use Trail.

7.1 Responsible Parties

Stormwater Management System Owner:

City of Northampton
Planning & Sustainability
210 Main Street
Northampton, MA 01060
Phone: (413) 587-1265
www.NorthamptonMA.gov/PLAN

Party Responsible for Operation and Maintenance:

City of Northampton
Planning & Sustainability
210 Main Street
Northampton, MA 01060
Phone: (413) 587-1265
www.NorthamptonMA.gov/PLAN

7.2 General Maintenance Tasks

Mowing Outside Resource Areas – Herbaceous material along the shoulder of the Multi-Use Trail within City-owned properties shall be mowed a minimum of four times per year or as necessary. Mowing will be completed to maintain stormwater management system and provide safe passage for trail users.

Bituminous Asphalt – Repair surface with patching as necessary. Inspect and document heaving and cracking. Repair and seal pavement as necessary. Full pavement replacement shall be conducted every 15-20 years or as determined necessary due to field conditions.

Signage, Fencing and Pedestrian Barriers – Inspection shall be conducted annually. Inspect signage, fencing and pedestrian barriers for signs of tilting or stability issues and straighten as necessary. Replace damaged or missing poles, signs or wood sections as necessary.

Curbing, Stone/Rock, Retaining Walls, and Riprap Stone – Inspection shall be conducted annually. Remove and replace as necessary.

Pet Waste Management – Residents and visitors shall be encouraged to pick up after their pets with signage along lawn areas. Waste shall be collected if found during other maintenance.

Solid Waste Management – Solid waste shall be removed from the site and disposed of properly.

Snow Management/Removal Plan – Plowed snow collected from the Multi-Use Trail will be deposited onto available pervious locations, and where available will be directed to stormwater

management systems for treatment. Plowing and salting of the trail is not anticipated but if required will be conducted per the City requirements. Salt or de-icing agents shall not be permitted in resource areas or resource area buffer zones.

Pavement Sweeping Schedules – Multi-Use Trail surfaces shall be swept annually after spring snowmelt.

Litter/Trash Collection – Litter and trash collection from the Multi-Use Trail surface and shoulders shall be conducted bi-annually or as required during other operation activity.

Soil/Surface Erosion Management – Soil erosion shall be monitored and remediated as necessary. Soil washout into adjacent properties and/or resource areas shall be removed and surface shall be re-established.

Graffiti Control – Graffiti shall be reported to the Police Department and removed with environmentally safe detergent and water or repainted as necessary.

Vandalism – Vandalism shall be reported to the Police Department and repaired as necessary.

7.3 Stormwater Maintenance Tasks

All stormwater management and controls shall be operated and maintained appropriately during regular operation of the site in the post-construction period. The stormwater control system shall be regularly inspected to ensure proper performance. In general, the following operation and maintenance provisions shall be provided:

- All stormwater management systems shall be cleared of accumulated foreign debris, including leaves and lawn cuttings;
- All stormwater management systems shall be inspected for slope integrity and erosion where applicable;
- The snow removal plan shall be adhered to by the Owner;
- A maintenance inspection report shall be made after each inspection. A copy of the form to be completed by the inspector is attached;
- All measures shall be maintained in good working order, if a repair is necessary, it shall be initiated within 48 hours of discovery; and
- All sediment and debris materials shall be disposed of properly in a pre-approved off-site location.

The stormwater controls shall be inspected on a routine basis to prevent deficiencies in the effectiveness of the systems due to sediment build-up, damage, or deterioration. Stormwater controls shall be operated and maintained appropriately during regular operation of the site in the post-construction period.

7.3.1 Drainage Structures - Culverts

All drainage culverts and other structures will be inspected at least twice annually (spring & fall) to monitor for proper operation, litter and/or trash, and structural deterioration. The structures will be cleaned when the depth of sediment exceeds one half the structure depth, and repaired when required. Collected sediment will be disposed of properly in a pre-approved off-site location.

7.3.2 Grass Swales and Filter Strips

Grass swales, channels, and filter strips will be inspected and cleaned of any debris and sediment annually. Any erosion rutting or side slope stabilization issues will be reinforced with loam and reseeded as necessary. The areas will be mowed and cleared of weeds and noxious vegetation four times annually.

7.3.3 Stone Check Dams, Drainage Pipe and Riprap Outfalls

Stone check dams and riprap pipe outfalls shall be inspected annually. Remove any sediment and debris found during inspection. Replace stone and repair surface erosion as necessary.

7.4 Estimated Operation and Maintenance Budget

The estimated average annual operating and maintenance budget for the project is as follows:

General Maintenance	*$1,250* ($2,500/per mile)
Grass Swales/Channels	*$1,000* *(lump sum)*
Culverts	*$500* (lump sum)
Estimated Total Annual Maintenance Cost:	*$2,750*

7.5 Operation and Maintenance Log Form

Operation and maintenance log form is provided below:

Operation and Maintenance Checklist

Rocky Hill Greenway Trail, Northampton, MA

210 Main Street

Northampton, MA 01060

Date:

Time:

Inspector:

Description	Maintenance/Inspection Requirement	Maintenance Required? (Y/N)
Mowing Outside Resource Areas	Minimum four times per year	
Bituminous Asphalt Pavement	Inspect annually and repair as necessary	
Signage, Fencing and Pedestrian Barriers	Inspect annually and repair as necessary	
Curbing, Stone/Rock, Retaining Walls, and Riprap stone	Inspect annually and repair as necessary	
Pet Waste Management	As necessary when found	
Solid Waste Management	Waste removal per City requirements	
Snow Removal	As necessary per City requirements	
Surface Sweeping	Annually or as necessary	
Litter/Trash Collection	Bi-annually	
Erosion Management	Re-establish as necessary when found	
Graffiti Control	Report to Police Department and remove as necessary	
Vandalism	Report to Police Department and repair as necessary	
Drainage Structures		
Sediment/Debris Cleanout	Remove all trash, debris, and sediment from structures twice annually or as needed.	
Structures	Repair as necessary	

Description	Maintenance/Inspection Requirement	Maintenance Required? (Y/N)
Stone check Dams and Riprap - Inspect annually and after major storms		
Sediment Removal	Remove sediment from riprap inlets and basins when sediment buildup is > 3”	
Side Slopes and Surface	Repair any soil gullying and replenish stone on barren areas as necessary	
Inlet/Outlet Structures & Spillways	Repair or replace riprap as necessary. Remove sediment as needed. Remove trash and debris	
Grass Channels and Swales		
Sediment Removal	Remove sediment when buildup is > 3”	
Side Slopes and Surface	Repair any soil gullying and revegetate/ replenish topsoil on barren areas as necessary	
Inlet/Outlet Structures & Spillways	Mow grass four times annually to maintain grass heights in the 4-6 inch range	

Comments:

Actions to be taken:

8.0 PROTECTION OF RARE SPECIES HABITAT

According to NHESP, the proposed project site, or a portion thereof, is located within Priority Habitat 1337 (PH 1337) and Estimated Habitat 76 (EH 76) as indicated in the Massachusetts Natural Heritage Atlas (13th Edition). This area is mapped for wood turtle (*Glyptemys insculpta*), a Massachusetts Species of Special Concern. The wood turtle is protected under the Massachusetts Endangered Species Act (MESA) (M.G.L. c. 131A) and it's implementing regulations (321 CMR 10.00).

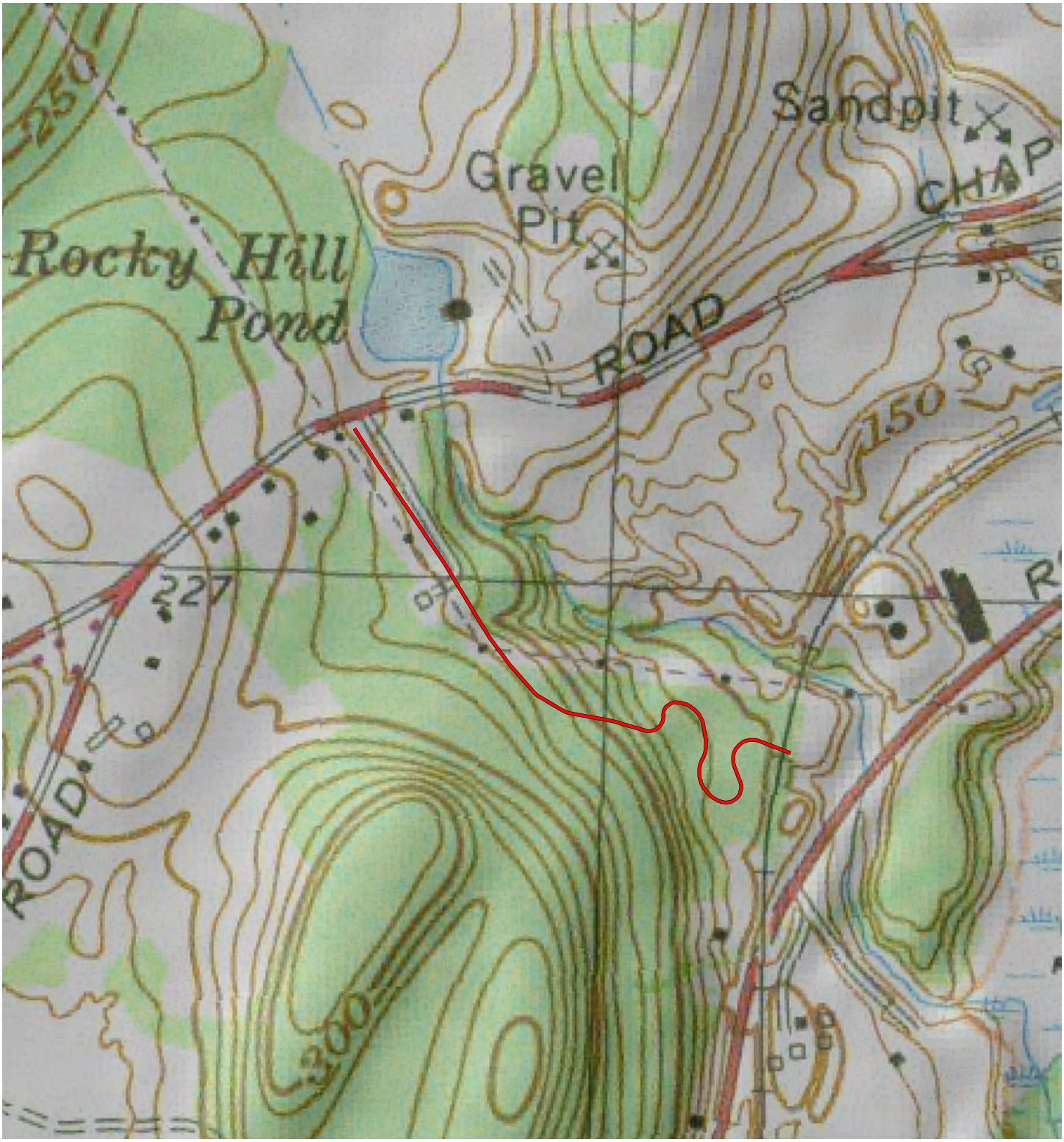
The wood turtle is a medium-sized turtle (14-20 cm, 5.5-8 in) that can be readily recognized by its sculpted shell and orange color on its legs and neck. The carapace is rough and each scale rises upwards in an irregularly shaped pyramid of grooves and ridges. This species spends much of its time in or near flowing waters. It can also be seen in forests and grasslands; however, this species is rarely found more than 300 meters (1000 ft) from flowing water. This species is typically active from mid-March through October. During the winter months the turtle hibernates in flowing rivers and perennial streams. This species will also spend the hottest parts of the summer in aestivation (prolonged dormancy or torpor during hot or dry periods).

Given the range of the wood turtle and the proximity of the proposed project to the unnamed perennial stream and surrounding wetland areas, it will be necessary to implement a rare species protection plan to ensure that the local population of this species is not adversely impacted. The plan will ensure that encounters with this species during construction are avoided, or depending upon the construction timing, relocated if found within the limit of work prior to the start of construction. A draft Rare Species Protection Plan is provided as Appendix B. The Applicant will work with NHESP during the MESA Project Review to finalize an approved protection plan.

8.0 REFERENCES

City of Northampton Open Space, Recreation & Multi-Use Trail Plan (2018-2025)

Massachusetts Department of Transportation (MassDOT) 2012 GreenDOT Implementation



Document Path: H:\Projects\2015\15004 Northampton Rocky Hill Greenway Trail\GIS\Maps\150721_USGS For MESA Info Request_15004_2.mxd

Legend

Rocky Hill Greenway
Multi-Use Trail (approximate)

**USGS Northampton 24K Quadrangle*

N

0 500

1" = 500 feet

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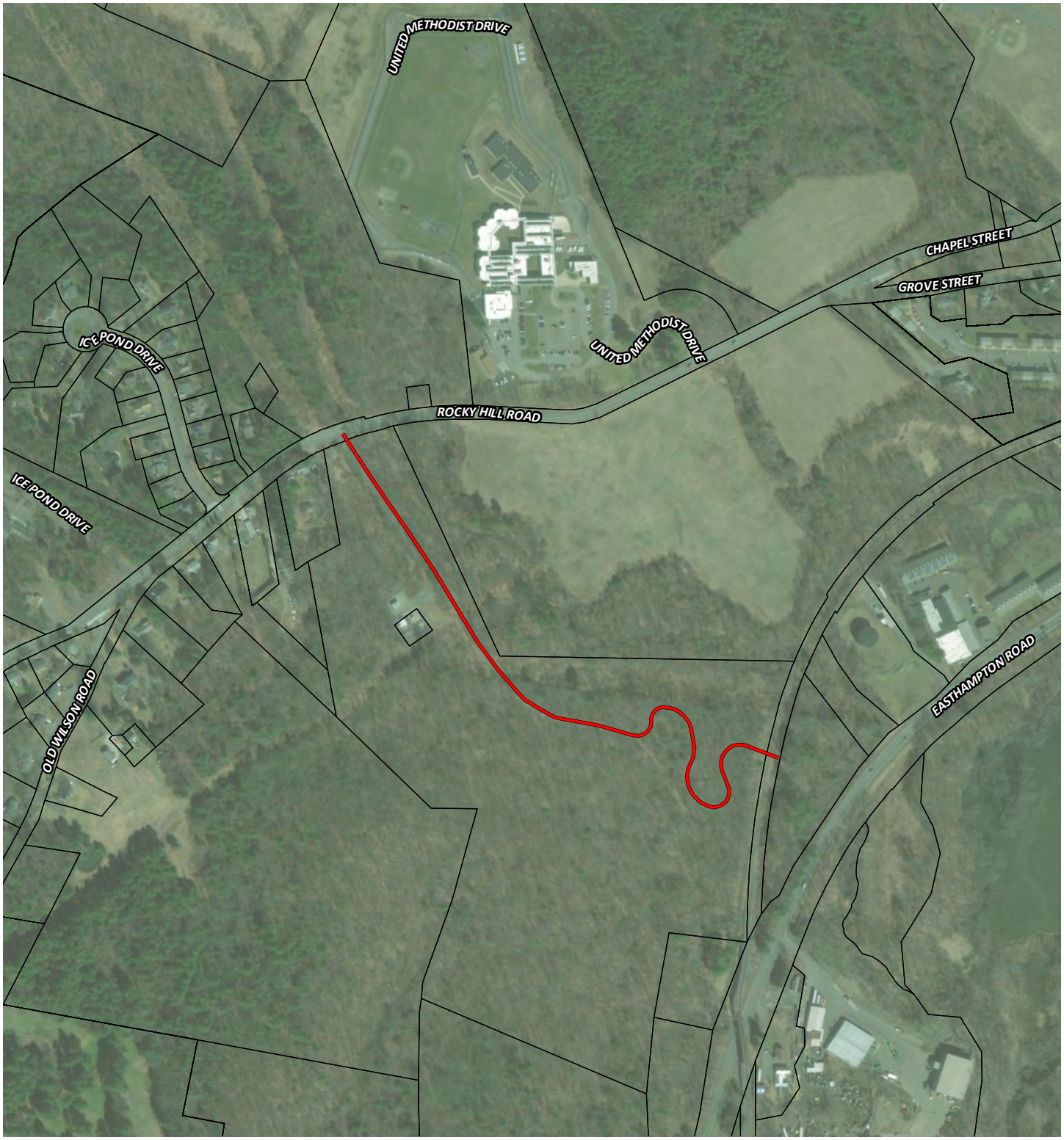
508-833-6600 • horsleywitten.com

USGS Quadrangle
Rocky Hill Greenway Multi-Use Trail (Bike Path)
Northampton, MA

Date: 1/19/2018

Figure 1



Document Path: H:\Projects\2015\15004 Northampton Rocky Hill Greenway Trail\GIS\Maps\Aerial.mxd

Legend

Rocky Hill Greenway Multi-Use Trail (approximate)

Parcels

**Aerial Imagery - ESRI 2016*

N

0 500

1" = 500 feet

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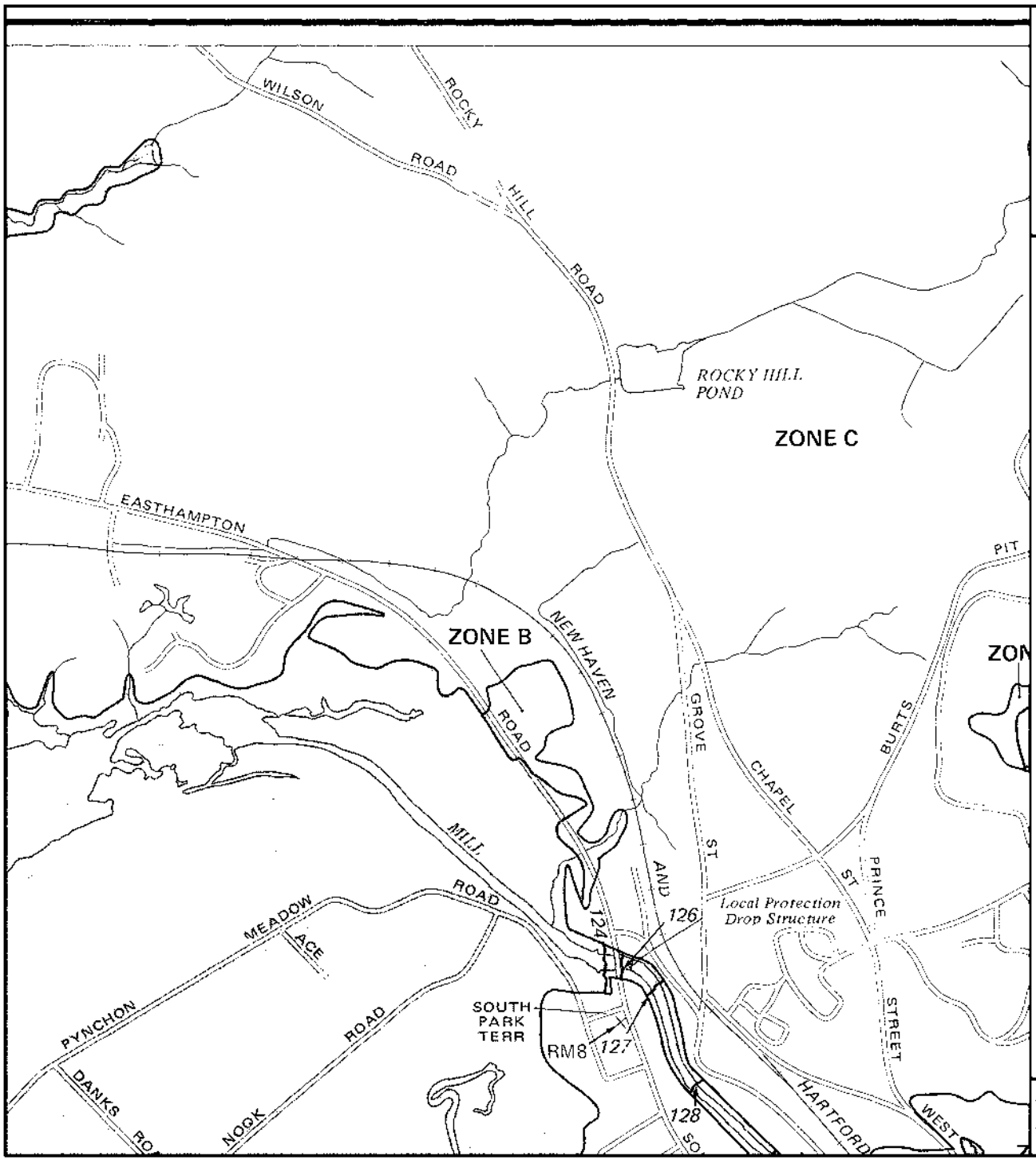
Aerial Photo
Rocky Hill Greenway Multi-Use Trail (Bike Path)
Northampton, MA

Date: 1/19/2018 Figure 2



APPROXIMATE SCALE

1000 0 1000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

CITY OF
NORTHAMPTON, MASSACHUSETTS
HAMPSHIRE COUNTY

COMMUNITY-PANEL NUMBER
250167 0002 A

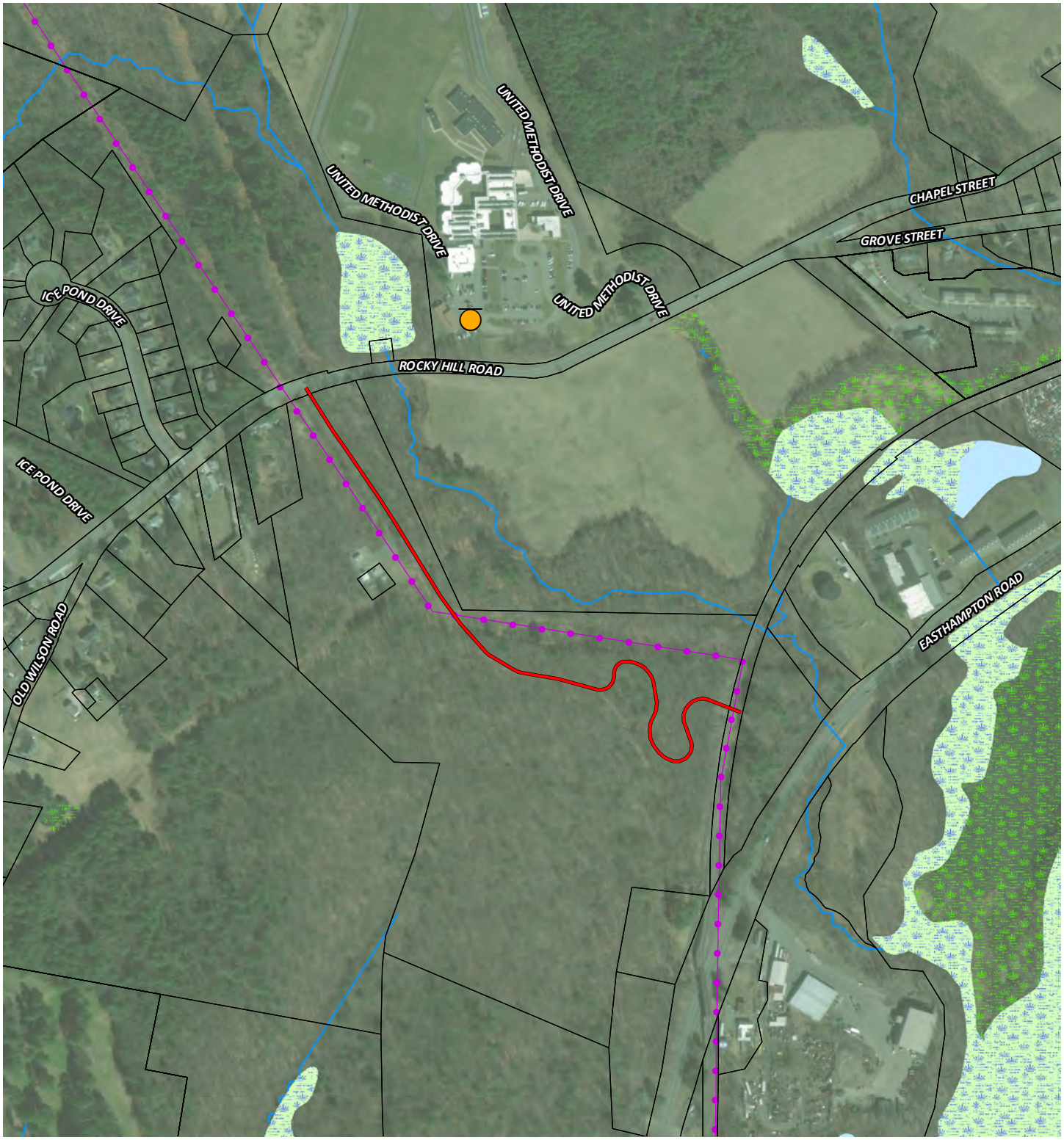
PAGE 2 OF 2
(SEE MAP INDEX FOR PAGES NOT PRINTED)

EFFECTIVE
APRIL 3, 1978

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

FIGURE 3



Document Path: H:\Projects\2015\15004 Northampton Rocky Hill Greenway Trail\GIS\Maps\Existing_Constraints_II.mxd

Legend

- Rocky Hill Greenway Multi - Use Trail (approximate)
- Parcels
- Powerline
- Underground Storage Tanks

DEP Wetlands

- Hydrologic Connection
- Marsh/Bog
- Wooded marsh
- Open Water

N

0 500

1" = 500 feet

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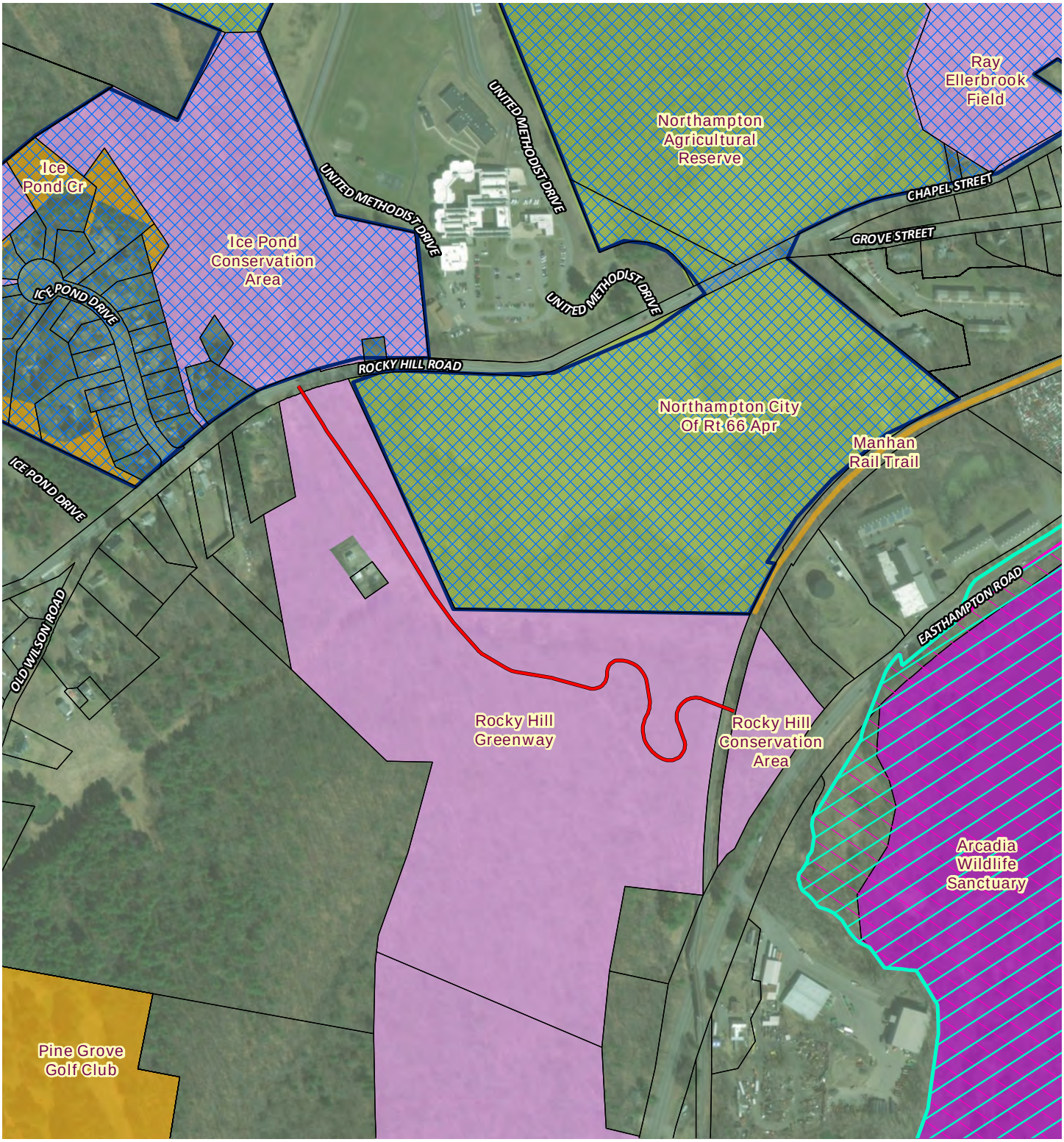
Existing Constraints
Rocky Hill Greenway Multi-Use Trail (Bike Path)
Northampton, MA

Date: 1/19/2018

Figure 4A



Document Path: H:\Projects\2015\15004 Northampton Rocky Hill Greenway Trail\GIS\Maps\Existing_Constraints.mxd

Legend

- Rocky Hill Greenway Multi-Use Trail (approximate)
- Parcels
- NHESP Priority Habitats of Rare Species
- NHESP Estimated Habitats of Rare Wildlife
- MHC Historic Inventory Areas

MassGIS Protected and Recreational OpenSpace

- Commonwealth of Massachusetts
- Department of Agricultural Resources
- Land Trust
- Municipal
- Private

N

0 — 500

1" = 500 feet

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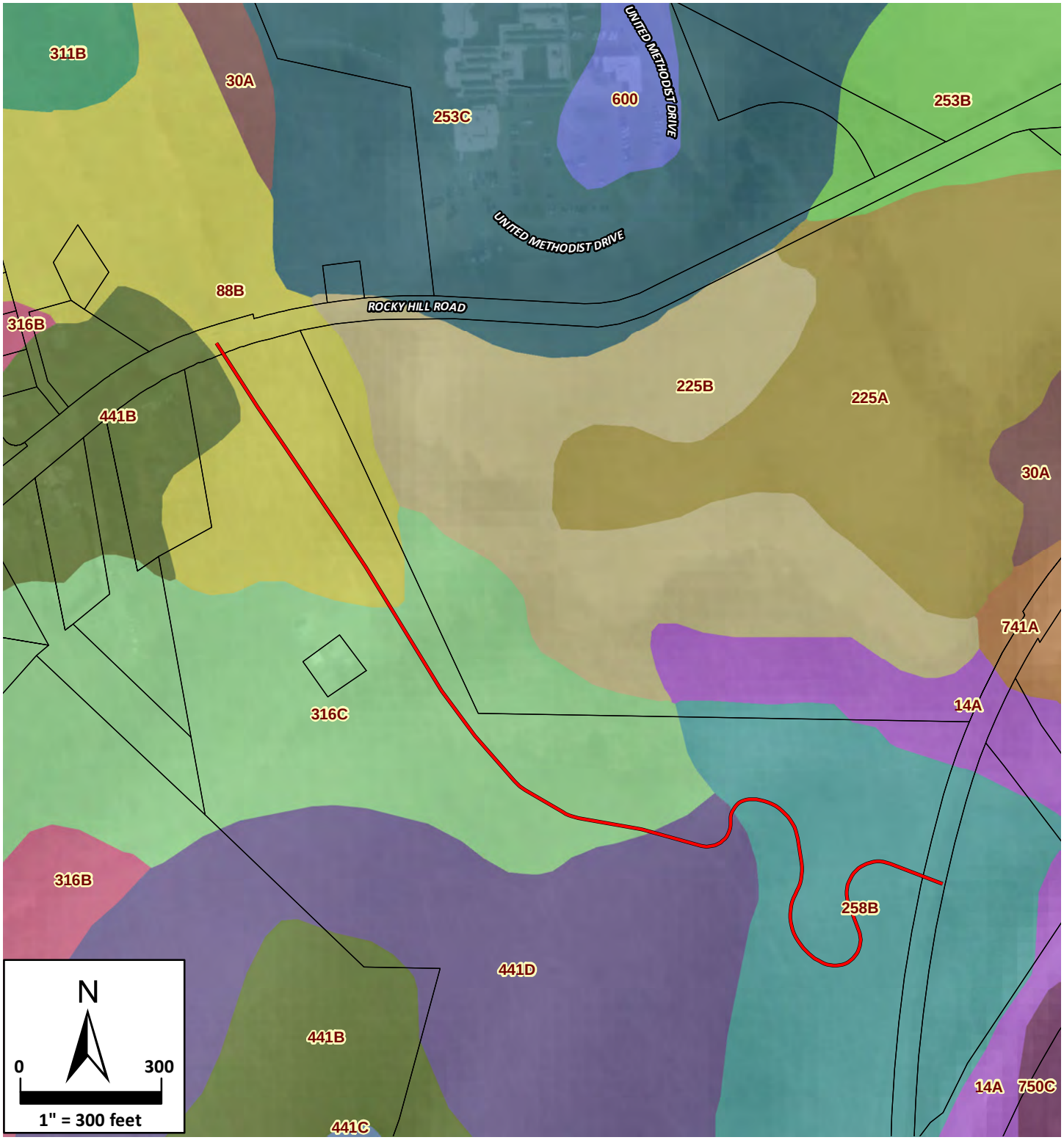
Existing Constraints
Rocky Hill Greenway Multi-Use Trail (Bike Path)
Northampton, MA

Date: 1/19/2018

Figure 4B



*Soils - MassGIS 2012

Document Path: H:\Projects\2015\15004 Northampton Rocky Hill Greenway Trail\GIS\Maps\Soils.mxd

Legend

- Rocky Hill Greenway Multi-Use Trail (approximate)
- Parcels
- 14A, Scitico
- 225A, Belgrade
- 225B, Raynham
- 253B, Hinckley
- 253C, Hinckley
- 258B, Agawam
- 306C, Paxton
- 30A, Raynham
- 311B, Woodbridge
- 316B, Scituate
- 316C, Scituate
- 441B, Gloucester
- 441C, Gloucester
- 441D, Gloucester
- 600, Pits
- 741A, Amostown
- 750C, Windsor
- 88B, Ridgebury

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Soils Map
Rocky Hill Greenway Multi-Use Trail (Bike Path)
Northampton, MA

Date: 1/19/2018

Figure 5

FIGURES & PHOTOS

Existing Site Conditions

Photo 1. Existing driveway servicing the natural gas pump station (looking north-west).

Photo 2. Existing stream bank (looking back up slope towards the existing driveway to the west).

Photo 3. Existing drainage ditch (looking west).

Photo 4. Unnamed perennial stream that flows from Rocky Hill Pond.

Photo 5. Existing wetland resource area as viewed from the culvert on the existing gravel path between the gas substations and the overhead wiring crossing (looking west).

Photo 6. Existing pathway (looking south from below the overhead wire crossing).

Photo 7. Existing culvert located beneath the existing gravel path near wetland flags WF C6 and WF C7.

Photo 8. Location of the gas line. The proposed trail will cross near the gas substations.

Photo 9. Massachusetts Electric Company right-of-way for utility line access and maintenance. Proposed trail will cross under the overhead wires.

Photo 10. Existing natural gas right-of-way. Mitigation area is proposed at the location of the debris pile shown in the left side of the photo. View is looking east with the gas substations behind.

Photo 11. Proposed mitigation area with debris from previous clearing (looking south).

APPENDIX A

Wetland Mitigation Plan

APPENDIX A
Wetland Replacement Plan

Rocky Hill Greenway Multi-Use Trail
Northampton, MA

March 2019

1.0 Introduction

The City of Northampton proposes the Rocky Hill Greenway Multi-Use Trail, a 2,630 linear foot (0.50 mile) multi-use trail designed as a spur trail to connect two existing trails in the neighborhood. The proposed project is located entirely within a City-owned parcel situated between Rocky Hill Road (MA Route 66) and Easthampton Road (MA Route 10) in Northampton, Massachusetts.

The proposed trail project will improve pedestrian and bicycle facilities by connecting the residential areas along Rocky Hill Road and Ice Pond Drive to the New Haven and Northampton Canal /Manhan Rail Trail. Bicyclists and pedestrians will benefit from being able to connect to these corridors more directly and with limited interaction with vehicular traffic along these two major roadways, providing a safer and more direct route to the existing rail trail. Additionally, the proposed trail will provide access to an eventual multi-use trail serving the southwestern and western half of the City, which is not currently served by any multi-use trails.

The proposed project will result in unavoidable impacts to Bordering Vegetated Wetland (BVW). Alterations to BVW have been avoided and minimized to the extent practicable given the site constraints; however, some BVW alteration is necessary to meet the project goals. The proposed trail is sited to maximize the reuse of existing disturbed areas by reusing an existing gravel access driveway within the Massachusetts Electric Company easement and following the existing gravel footpath that currently traverses the BVW. Alternate trail locations would result in even greater wetland impacts, as the BVW at this site consists of a series of hill-side seeps along the slopes leading downgradient toward an unnamed perennial stream.

The Applicant proposes to provide wetland mitigation for unavoidable wetland impacts by creating two wetland replacement areas totaling approximately 2,680 SF adjacent to the proposed multi-use trail to the north/northeast of the existing gravel roadway, near wetland flags A11-A12 and A13-A14 and flags B22-B23 where hillside seeps occur along a small drainage channel. Details of the proposed mitigation areas are provided below and are shown on Sheet

8 of the project plans prepared by Horsley Witten Group, Inc.(HW), entitled "Rocky Hill Greenway Multi-Use Trail, Northampton, Massachusetts" (dated April 2016).

2.0 Wetland Replacement Details

Wetland replacement activities will generally include the removal of fill material and debris as well as existing vegetation within the footprint of the two wetland replacement areas, regrading and establishment of a connection to the existing intermittent channel and to the hillside seeps, introduction of high-organic content soils, introduction of coarse woody debris or boulders to improve habitat diversity, stabilization of disturbed soils with native seed mixes, and revegetation of wetland areas with native plants to provide for a 75% native plant community within all impacted areas after two growing seasons (as required under 310 CMR 10.55(4)(b)(6)). A qualified professional (Wetlands Specialist) will oversee all phases of the wetland restoration efforts to ensure that requirements set forth in the proposed plan are met.

This wetland replacement plan was developed based upon observations made by HW of existing conditions and is modeled after the Massachusetts Inland Wetland Replacement Guidelines (March 2002) prepared by MassDEP). The replacement plan is also designed to meet the regulatory criteria for wetland replacement set forth in 310 CMR 10.55(4)(b)(1) through (7) as well as the provisions set forth by Massachusetts Department of Transportation (MassDOT) for wetland replacement.

2.1 Wetland Specialist

As required by MassDOT and in accordance with the MassDOT specifications, a Wetland Specialist will be retained to oversee all aspects of the wetland replacement. This individual must have a minimum of 5-years experience in wetland replacement and will be responsible for the following, including, but not limited to, finalizing the location of the replacement areas, overseeing siltation controls, final grading, overseeing plantings, long-term monitoring of plant growth and any invasives, and preparing and submitting monitoring reports. This individual will also be granted the discretion to make slight field adjustments to ensure wetland replacement success.

2.2 Erosion and Sedimentation Control

Prior to the commencement of any wetland replacement activities, a sedimentation and erosion control barrier consisting of staked siltation fencing or staked silt socks will be installed along the existing wetland boundary to protect the adjacent areas during earth-moving activities. Erosion control barriers may also serve as the downgradient barrier for rare species protection, and the locations and type of barriers will be coordinated with the Massachusetts Natural Heritage and Endangered Species Program (NHESP) and the Conservation Commission.

Erosion control barriers will be regularly inspected and properly maintained during and after construction, including after every storm event, pursuant to specifications. Devices will be removed at the end of the two-year monitoring period if vegetation has been successfully established and sediments are stabilized.

2.3 Site Preparation and Excavation

Following installation of the sedimentation barrier, vegetation and soils within the proposed replacement areas will be removed using mechanized equipment, creating two areas totaling of approximately 2,680 SF of wetland area. Sediments and vegetation removed from this area will be transported off-site to a suitable disposal facility; soils may be re-used on-site as fill material if appropriate. Miscellaneous debris observed within the replacement areas will be removed and disposed of off-site at a suitable facility. At the discretion of the Wetland Specialist, suitable debris may be retained and stockpiled nearby for re-introduction in the replacement areas following final grading and introduction of wetland soils to enhance wildlife habitat. The replacement areas will be designed to mimic the topography of the adjacent BVW; the elevations specified on the replacement BVW as shown on the attached plans are based on observations of the adjacent natural wetlands.

2.4 Soils

Depending upon the condition of the underlying soils within the replacement areas, the areas will either be lightly regraded and/or supplemented as necessary. Soils within the impacted BVW will be reused as feasible, and will not be compacted or grubbed in order to retain soil structure and the existing seedbank/rootstock. It is anticipated that these would need to be supplemented to accommodate for the larger replacement areas.

If it is determined that soils need to be supplemented, the replacement areas would be over-excavated by approximately 6-12 inches to allow for introduction of a layer of low permeability soils and organic-rich sediments to support the proposed wetland plant community.

It will be ensured that the completed wetland replacement areas will tie into the adjacent wetland grades to allow for an unrestricted hydrologic connection between the existing wetland area and the replacement areas. Variable microtopography within the replacement areas will be created to enhance habitat diversity and improve the hydrologic connection with groundwater.

The organic-rich soils will be obtained from a commercial source, will be certified as weed-free, and will be allowed to settle for a minimum of 48 hours prior to introducing plants.

2.5 Wetland Replacement Area Plantings

Following placement of wetland soils and re-grading, native saplings, shrubs, and herbaceous materials obtained from local nursery stock will be introduced within the replacement areas. Proposed species were selected to be compatible with the natural wetland and designed to enhance the existing vegetation community.

Proposed species for the wetland and adjacent buffer include, but are not limited to, red maple (*Acer rubrum*), gray birch (*Betula populifolia*), iron wood (*Carpinus caroliniana*), highbush blueberry (*Vaccinium corymbosum*), spicebush (*Lindera benzoin*), winterberry (*Ilex verticillata*), arrowwood (*Viburnum dentatum*), nannyberry (*Viburnum lentago*), meadowsweet (*Spiraea latifolia*), steeplebush (*Spiraea tomentosa*), cinnamon fern (*Osmunda cinnamomea*), sensitive fern (*Onoclea sensibilis*), and Cardinal flower (*Lobelia cardinalis*) in accordance with the specifications provided on the plans.

Tree species will be planted singly, while shrubs and container-grown herbaceous plants will be planted in clusters to provide a mosaic of wetland plantings. Plantings will be installed near the beginning or the end of the growing season for Hampshire County, MA (April 29 – October 12; USDA, 2002), to ensure greater plant survival. Planting specifications are provided on Sheet C-16 of the project plans. Proposed plantings are designed to provide a densely vegetated forested swamp community upon full grow-out.

2.6 Stabilization with Wetland Seed Mix

A wetland seed mix will be introduced to stabilize disturbed soils within the wetland replacement areas. Appropriate seed mixes that contain native seeds suitable for most wetland mitigation sites are commercially available. A native seed mix, such as the "New England Wetmix," supplied by New England Wetland Plants, Inc. (www.newp.com) or acceptable equivalent, will be introduced to stabilize the soil surface and enhance the wetland plant community to ensure a 75% native wetland plant cover after two growing seasons.

According to the NEWP website, the New England Wetmix "contains a wide variety of native seeds that are suitable for most wetland restoration sites that are not permanently flooded. All species are best suited to moist ground as found in most wet meadows, scrub shrub, or forested wetland restoration areas." Following the planting of woody vegetation and fern species, the seed mix will be introduced at the recommended application rate of 1 LB/2500 SF (or 18 lbs/acre) and lightly raked in as recommended. All plantings will be watered during the two to three week grow-in period as necessary.

Species included within this wetland seed mix include: fox sedge (*Carex vulpinoidea*), lurid sedge (*Carex lurida*), blunt broom sedge (*Carex scoparia*), sensitive fern (*Onoclea sensibilis*), blue vervain (*Verbena hastata*), hop sedge (*Carex lupulina*), green bulrush (*Scirpus atrovirens*), nodding bur marigold (*Bidens cernua*), bristly sedge (*Carex comosa*), fringed sedge (*Carex crinita*), American mannagrass (*Glyceria grandis*), wool grass (*Scirpus cyperinus*), soft rush (*Juncus effusus*), spotted Joe Pye weed (*Eupatorium maculatum*), boneset (*Eupatorium perfoliatum*), mud plantain (*Alisma subcordatum*), New England aster (*Aster novae-angliae*), rattlesnake grass (*Glyceria canadensis*), purplestem aster (*Aster puniceus*), soft stem bulrush (*Scirpus validus*), blueflag (*Iris versicolor*), swamp milkweed (*Asclepias incarnata*), and monkey flower (*Mimulus ringens*).

Upper reaches and side slopes along the existing access driveway/proposed trail will be stabilized with a similar native seed mix such as the New England Conservation/Wildlife Mix. According to the specification sheet, this seed mix "*provides a permanent cover of grasses, wildflowers, and legumes. For both good erosion control and wildlife habitat value. The mix is designed to be a no maintenance seeding, and is appropriate for cut and fill slopes, detention basin side slopes, and disturbed areas adjacent to commercial and residential projects*" at the recommended application rate of 25 lbs/acre (1,750 SF/lb). Species contained in this native seed mix include: Virginia wild rye (*Elymus virginicus*), little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), creeping red fescue (*Festuca rubra*), switch grass (*Panicum virgatum*), partridge pea (*Chamaecrista fasciculata*), deer tongue (*Panicum clandestinum*), Indian grass (*Sorghastrum nutans*), ox eye sunflower (*Heliopsis helianthoides*), common milkweed (*Asclepias syriaca*), spotted Joe Pye weed (*Eupatorium maculatum*), grass leaved goldenrod (*Euthamia graminifolia*), blue vervain (*Verbena hastata*), New England aster (*Aster novae-angliae*), and early goldenrod (*Solidago juncea*).

2.7 Invasive Species Management

HW observed the presence of occasional non-native invasive species during the initial site survey, including, but not limited to, honeysuckle (*Lonicera* sp.), Oriental bittersweet (*Celastrus orbiculatus*), and purple loosestrife (*Lythrum salicaria*). These species are capable of spreading rapidly through and extensive seedbank, and/or rhizomes and can leave a long-lived seed bank in the soil. As these species are considered either invasive, likely invasive, or potentially invasive in Massachusetts, precautions will be taken to minimize the re-introduction or spread of this species within the newly created wetland replacement areas. Any observed seedlings found within the replacement areas during the grow-in and monitoring periods will be pulled by hand, bagged, and disposed of properly.

2.8 Monitoring

The wetland replacement areas will be monitored twice annually (approximately early to mid-June and early to mid-September) for a minimum of two growing seasons to assess the relative success of the replacement wetlands. Semi-annual site inspections conducted during late spring and late summer will include an assessment of the relative health and vigor of the planted vegetation, percent vegetative cover, percent cover of wetland species, and general compliance with the performance standards.

Written reports detailing the findings of each monitoring event will be submitted on an annual basis for two years, to the Northampton Conservation Commission. Photographic documentation will be incorporated within the monitoring reports and photographs will be taken from pre-established vantage points for consistency between monitoring events. Recommendations will be made for the replacement of dead or dying plants, and any additional remediation, as necessary.

3.0 Wetland Replacement Sequence of Construction

1). A qualified wetland professional, Wetland Specialist (WS), will be identified to monitor all phases of construction of the replacement areas including, but not limited to, installation of sedimentation control barriers, removal of fill materials and debris, excavation of sub-base materials, soil augmentation, revegetation, reseeding, and implementation of the monitoring plan. The WS will photo-document all phases of the restoration process and provide reports to the Northampton Conservation Commission.

2). The WS will meet on-site with the Conservation Commission or its designated Agent to review all components of the replacement areas prior to the start of wetland replacement activities, to discuss any slight deviations that may need to be considered, and to establish the reporting protocol and schedule.

3). Prior to construction of wetland replacement areas, wetland flags will be refreshed as needed to define the boundary of the proposed wetland replacement areas as shown on the site plans.

4). A sedimentation and erosion control barrier will be installed along the wetland boundary in accordance with the manufacturer's specifications, by a qualified contractor who is experienced with installation of such sedimentation and erosion control barriers and who is also generally experienced in wetland replacement practices.

5). Debris within the restoration area will be removed using mechanized equipment such as a bobcat. All debris will be disposed of at a proper facility in accordance with all state and local laws, unless determined by the WS to be suitable for reuse in the mitigation areas.

6). Existing vegetation within the replacement areas will be cut, removed (or stockpiled for reuse if suitable), and the root systems grubbed and removed.

7). The wetland replacement areas will be roughly excavated to a depth of six to 12 inches below grade to ensure proper hydrological connection to groundwater within the final grade of the replacement areas.

8). Clean, weed-free high-organic soils will be introduced within the replacement areas and regraded, incorporating slight undulating pit-and-mound microtopography throughout to mimic conditions within the undisturbed wetland. The exact configuration of the replacement areas will be determined in the field by the WS in coordination with the contractor. Sediments will be allowed to settle for a minimum of 48 hours prior to planting.

9). A sedimentation and erosion control barrier will be installed along the upland areas and the newly created wetland boundaries to protect the replacement areas during grow-in period.

10). Following settling of introduced sediments, small rocks and/or fallen woody debris will be placed within the replacement areas to provide added wildlife habitat. Additional habitat features may be incorporated (e.g., turtle nesting habitat)

11). Nursery grown native vegetation will be planted in accordance with the planting specifications, working from far interior portions of the restoration area outward. Seeding with appropriate seed mix will occur in a similar manner, such that newly planted vegetation and seed mix are not continually trampled once planted. All plantings will be conducted by a qualified landscaper or other qualified professional who has experience with wetland replacement areas. Any deviations from the specified planting list must be approved by the WS.

12). Note: All plantings should occur during the growing season for Hampshire County, Massachusetts, which occurs from April 29 through October 12 (USDA, 2002). Should the replacement activities commence outside of that timeframe, excavation and soil augmentation activities may occur at the discretion of the WS, however, plantings should not occur. Instead the area may be temporarily stabilized with a non-persistent annual rye or weed-free straw.

13). All vegetation will be irrigated, particularly during dry periods, at the direction of the WS overseeing the wetland replacement efforts.

14). The downgradient erosion control barrier will be removed from existing wetland boundary once all soils are stabilized with vegetation.

15). The Contractor will inspect erosion and sediment control systems immediately after each significant rainfall and daily during prolonged rainfall events, and will make repairs immediately including the removal and disposal of accumulated sediments when they reach approximately one-half the height of the control system, and when directed by the WS. Control systems will be promptly replaced if fabric decomposes or system becomes ineffective prior to the expected usable life.

16). The WS will monitor the wetland replacement areas twice annually during the growing season for two growing seasons as required. Bi-annual site inspections will include an assessment of the relative health and vigor of the introduced plants, percent cover of vegetation, percent cover of wetland species, and general compliance with the performance standards under 310 CMR 10.55(4)(b)(1 through 7). Randomly distributed vegetation monitoring quadrats will be established within the wetland restoration areas to provide consistent data regarding the relative success of the wetland plant community and to confirm that they are meeting the 75 percent reestablishment standard. The WS will establish photographic stations in strategic locations throughout the replacement areas to ensure consistency among photo-documentation during the monitoring period. Monitoring forms such as the sample provided in DEP handbook will be used. Annual reports will be submitted to the Northampton Conservation Commission and to MassDEP.

4.0 Compliance with Wetlands Regulations

The proposed wetland replacement areas are designed to comply with the regulations at 310 CMR 10.55(4)(b) (1 through 7). The regulations state,

> *Notwithstanding the provisions of 310 CMR 10.55(4)(a), the issuing authority may issue an Order of Conditions permitting work which results in the loss of up to 5000 square feet of Bordering Vegetated Wetland when said area is replaced in accordance with the following general conditions and any additional, specific conditions the issuing authority deems necessary to ensure that the replacement area will function in a manner similar to the area that will be lost:*
>
> 1. *the surface of the replacement area to be created ("the replacement area") shall be equal to that of the area that will be lost ("the lost area");*

Combined, the proposed wetland replacement areas are 2,680 SF, providing an approximately 1.6:1 mitigation ratio to impacted BVW. This is slightly lower than the local mitigation requirement, but is designed in an area currently strewn with debris that was determined to be the most appropriate location for the proposed mitigation area. Additional mitigation would result in the removal of undisturbed forested buffer zone, areas that are also important for the protection of wetland resources.

2. *the ground water and surface elevation of the replacement area shall be approximately equal to that of the lost area;*
3. *the overall horizontal configuration and location of the replacement area with respect to the bank shall be similar to that of the lost area;*
4. *the replacement area shall have an unrestricted hydraulic connection to the same water body or waterway associated with the lost area;*

The proposed replacement areas are located directly adjacent to two wetland segments and at the same or similar elevations. They are designed to mimic the adjacent hill-side seep wetlands.

5. *the replacement area shall be located within the same general area of the water body or reach of the waterway as the lost area;*

The proposed wetland replacement areas are sited in an area directly adjacent to and north of the proposed wetland crossing and within the same approximate distance to the nearby unnamed perennial stream.

6. *at least 75% of the surface of the replacement area shall be reestablished with indigenous wetland plant species within two growing seasons, and prior to said vegetative reestablishment any exposed soil in the replacement area shall be temporarily stabilized to prevent erosion in accordance with standard U.S. Soil Conservation Service methods; and*

The wetland replacement areas are designed to achieve a 75 percent or greater native wetland plant community after two growing seasons. Native plantings obtained from nursery stock are the same or similar in composition to species observed within the undisturbed wetland. Native seed mixes will ensure cover of native species as well as provide erosion control during the grow-in period.

7. *the replacement area shall be provided in a manner which is consistent with all other General Performance Standards for each resource area in Part III of 310 CMR 10.00.*

In the exercise of this discretion, the issuing authority shall consider the magnitude of the alteration and the significance of the project site to the interests identified in M.G.L. c. 131, § 40, the extent to which adverse impacts can be avoided, the extent to which adverse impacts are minimized, and the extent to which mitigation measures, including replacement or restoration, are provided to contribute to the protection of the interests identified in M.G.L. c. 131, § 40.

The proposed wetland replacement area is designed to be consistent with all other performance standards for freshwater wetlands, and will provide greater than 1:1 mitigation for lost wetlands that are currently disturbed (e.g., the gravel footpath that traverses the wetland area). Provisions have been incorporated to provide additional wildlife habitat features, and a monitoring plan has been established to control the spread of invasive species that have been observed in the vicinity. Further, a rare species protection plan has been drafted for review and approval by NHESP to ensure no adverse effects to the local rare species populations.

An alternatives analysis of the project has been performed and it has been determined that the proposed project and preferred alternative is the only feasible alternative that will meet the project purpose. Measures to further minimize wetland impacts include incorporation of retaining walls in areas of the trail that abut or are in the vicinity of wetland resource areas. New culverts are proposed to replaced undersized existing culverts or in locations that the trail crossing existing drainage ways/ditches. Stormwater will be managed in accordance with the Massachusetts Stormwater Management Standards, incorporating a vegetated swale to manage runoff of new impervious surfaces.

5.0 REFERENCES

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