O'Reilly, Talbot & Okun
[A S S O C I A T E S]
ENGINEERING
Environmental Safety Health Geotechnical

19 W. Main Street
Suite 205
Westborough, MA 01581
Tel 508 366 6409
Fax 508 366 9826
www.oto-env.com

April 21, 2011
File No: 0022–23–04

Prepared for:
Town of Acton
472 Main Street
Acton, Massachusetts 01720

Notice of Intent
Town of Acton
Caouette Property
2 Stow Street
Acton, Massachusetts

Prepared by:
O'Reilly, Talbot & Okun Associates, Inc.
19 West Main Street, Suite 205
Westborough, Massachusetts 01581

O'Reilly, Talbot & Okun
[ASSOCIATES]
ENGINEERING
EnvironmentalSafetyHealthGeotechnical

19 W. Main Street
Suite 205
Westborough, MA 01581
Tel 508 366 6409
Fax 508 366 9826
www.oto-env.com

Town of Acton
Soil Remediation
Former Caouette Property; Acton, MA

NOTICE OF INTENT (NOI)

TABLE OF CONTENTS

1. WPA FORM 3 – NOTICE OF INTENT

2. NOI WETLAND FEE TRANSMITTAL FORM

3. NOTIFICATION TO ABUTTERS AND ABUTTERS LIST

APPENDICES

Appendix A NOI Supplementary Narrative

Tables

Table 2–1. Summary of wetland resource areas.
Table 4–1. Summary of temporary resource area impacts.
Table 5–1. Summary of restored area plant community metrics.

Figures

Figure 1–1. Site Locus Map
Figure 1–2. Site Plan
Figure 2–1. Natural resource Conservation Service (NRCS) Soil Map.

Appendices

Appendix A.1 Photographs of Soil Excavation Area
Appendix A.2 Definitions of Resource Area Types (310 CMR 10.00 *et seq.*)
Appendix A.3 Methods used to Identify Resource Area Types
Appendix A.4 MassDEP Data Sheets

Appendix B Stormwater Checklist for Stormwater Report

Appendix C Stormwater Report

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

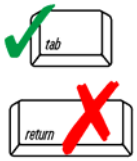
Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Acton
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):

a. Street Address	b. City/Town	c. Zip Code
2 Stow Street	Acton	01720

Latitude and Longitude:

d. Latitude	e. Longitude
42 27 00	71 27 00

f. Assessors Map/Plat Number	g. Parcel /Lot Number
H2.A-62	

2. Applicant:

a. First Name	b. Last Name
Ledoux	Steve

c. Organization: Town of Acton

d. Street Address: 472 Main Street

e. City/Town	f. State	g. Zip Code
Acton	MA	01720

h. Phone Number	i. Fax Number	j. Email Address
978 929-6611	978 929-6350	manager@acton-ma.gov

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):

a. First Name	b. Last Name
James	Okun

c. Company: O'Reilly, Talbot & Okun Associates, Inc.

d. Street Address: 19 West Main Street

e. City/Town	f. State	g. Zip Code
Westborough	MA	01581

h. Phone Number	i. Fax Number	j. Email address
508 366-6409	508 366-9826	okun@oto-env.com

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

a. Total Fee Paid	b. State Fee Paid	c. City/Town Fee Paid
Not Applicable	Not Applicable	Not Applicable

A. General Information (continued)

6. General Project Description:

The project involves the removal of soils containing lead, arsenic, and polycyclic aromatic hydrocarbons (PAHs). Soils will be excavated from within Bordering Land Subject to Flooding and the 100-foot buffer zone.

7a. Project Type Checklist:

1. ☐ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Limited Project Driveway Crossing
4. ☐ Commercial/Industrial
5. ☐ Dock/Pier
6. ☐ Utilities
7. ☐ Coastal Engineering Structure
8. ☐ Agriculture (e.g., cranberries, forestry)
9. ☐ Transportation
10. ☒ Other

7b. Is any portion of the proposed activity eligible to be treated as a 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:

310 CMR 10.53(q) Assessment, monitoring, containment, mitigation, and remediation of oil and/or hazardous material.

8. Property recorded at the Registry of Deeds for:

Middlesex	
a. County	b. Certificate # (if registered land)
56002	378 (Order of Taking); 381 (Confirmatory Deed)
c. Book	d. Page Number

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.

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. square feet	2. square feet
	3. cubic yards dredged	

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☒ Bordering Land Subject to Flooding	3,972 (temporary excavation) 1. square feet	3,972 (in situ) 2. square feet
	0 3. cubic feet of flood storage lost	0 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	1. Name of Waterway (if available)	

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: _____ 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.

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)

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

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

	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

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://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/priority_habitat/online_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
Route 135, North Drive
Westborough, MA 01581

Online Map 2008
b. Date of map

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

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.d, 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).*

1. c. Submit Supplemental Information for Endangered Species Review*

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

      (a) within wetland Resource Area _____ percentage/acreage

      (b) outside Resource Area _____ percentage/acreage

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

   3. ☐ 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

      (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

   d. 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. a. NHESP Tracking # _____ b. Date submitted to NHESP _____

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see http://www.mass.gov/dfwele/dfw/nhesp/nhesp.htm, regulatory review tab). 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)

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

2. 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 or hand delivery of NOI to either:

South Shore - Cohasset to Rhode Island, and the Cape & Islands:	North Shore - Hull to New Hampshire:
Division of Marine Fisheries - Southeast Marine Fisheries Station Attn: Environmental Reviewer 1213 Purchase Street – 3rd Floor New Bedford, MA 02740-6694	Division of Marine Fisheries - North Shore Office Attn: Environmental Reviewer 30 Emerson Avenue Gloucester, MA 01930

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.

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

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

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

4. 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

5. 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

6. 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

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

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

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.

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.

Figure 1-2. Soil Removal Areas
a. Plan Title

O'Reilly, Talbot & Okun Associates
b. Prepared By

c. Signed and Stamped by

March 7, 2011
d. Final Revision Date

1"=40'
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.

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

Acton
City/Town

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.

1. Signature of Applicant	2. Date 4/19/20
3. Signature of Property Owner (if different)	4. Date
5. Signature of Representative (if any)	6. Date 4/19/2011

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.

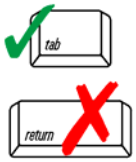
The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

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. Applicant:

Ledoux	Steve
a. First Name	b. Last Name

Town of Acton
c. Organization

472 Main Street
d. Mailing Address

Acton	MA	01720
e. City/Town	f. State	g. Zip Code

978 929-6611	978 929-6350	manager@acton-ma.gov
h. Phone Number	i. Fax Number	j. Email Address

2. 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

3. Project Location:

2 Stow Street	Acton
a. Street Address	b. City/Town

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).

The fee should be calculated using the following six-step process and 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
Oil and/or hazardous material release response acton (Category 4)	1	0	0

Step 5/Total Project Fee: 0

Step 6/Fee Payments:

Total Project Fee: 0
a. Total Fee from Step 5

State share of filing Fee: 0
b. 1/2 Total Fee **less $**12.50

City/Town share of filling Fee: 0
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.)

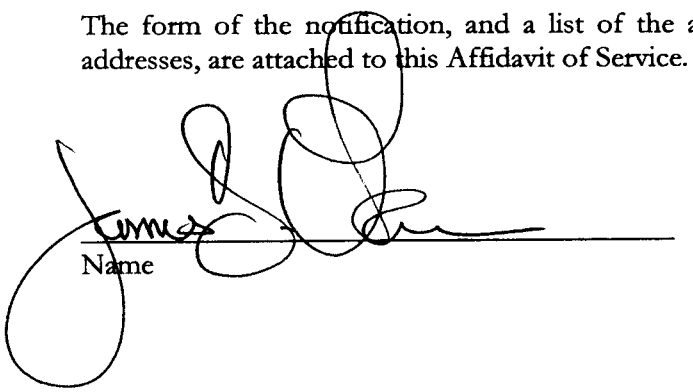
AFFIDAVIT OF SERVICE

Under the Massachusetts Wetlands Protection Act

I, **James D. Okun**, hereby certify under the pains and penalties of perjury that on **April 19, 2011** I gave notification to abutters in compliance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40, and the MassDEP Guide to Abutter Notification dated April 8, 1994 in connection with the following matter:

> A Notice of Intent filed under the Massachusetts Wetlands Protection Act by **O'Reilly, Talbot & Okun Associates Inc**. with the Acton Conservation Commission on April 21, 2011 for property located at **2 Stow Street, Acton, Massachusetts**.

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.



Name

4/19/2011

Date

Town of Acton
472 Main Street
Acton, MA 01720
Telephone (978) 264-9622
Fax (978) 264-9630

Brian McMullen
Assistant Assessor

Locus: 2 STOW ST
Parcel ID: H2.A-62

Location	Parcel ID	Owner	Co-Owner	Mailing Address	Address 2	City	ST	Zip
90 MARTIN ST	H2-95	CAOUETTE FRANCES S	CAOUETTE MARY ANN	SIIMEONE JOHN	90 MARTIN ST	ACTON	MA	01720
92 MARTIN ST	H2-102	HOUGHTON ROBERT W	BOLSTER SARAH C	92 MARTIN ST		ACTON	MA	01720
21 MAPLE ST	H2.A-37	RICHARDS GORDON D		60 CHARTER ROAD		ACTON	MA	01720
28 MAPLE ST	H2.A-41-5	L AND G REALTY		15 WHITMAN ROAD		CANTON	MA	02021
19 MAPLE ST	H2.A-42	RICHARDS GORDON		25 MAPLE ST		ACTON	MA	01720
1 MAPLE ST	H2.A-42-1	MONTOURI REALTY CO		5419 VISTA LEJANA NE		ALBUQUERQUE	NM	87111
18 MAPLE ST	H2.A-53	MANNING STEVEN T		18 MAPLE ST		ACTON	MA	01720
16 MAPLE ST	H2.A-54	HANLEY SEAN P	HANLEY CHRISTINE L	16 MAPLE ST		ACTON	MA	01720
14 MAPLE ST	H2.A-55	MIGUELEZ AVELINO		14 MAPLE ST		ACTON	MA	01720
10 MAPLE ST	H2.A-56	KOZEL PETER D	YOUNG KIMBERLY A	10 MAPLE ST		ACTON	MA	01720
24 STOW ST	H2.A-59	LOMBARDO MARK A	LOTHROP AMY A	19 BAXTER CT		GILFORD	NH	03249
20 STOW ST	H2.A-60	KOCHIS KATHLEEN MARY		26 PARK LANE		HARVARD	MA	01451
14 STOW ST	H2.A-61	SISKA CLARE I TRUSTEE	2001 CLARE I SISKA TRUST	14 STOW ST		ACTON	MA	01720
10 STOW ST	H2.A-62-1	CAOUETTE MARY ANN		10 STOW ST		ACTON	MA	01720
6 STOW ST	H2.A-62-2	BERRY ELISSA D	KNIGHT ROY C	6 STOW ST		ACTON	MA	01720
112 MAIN ST	H2.A-63	TOWN OF ACTON		472 MAIN STREET		ACTON	MA	01720
110 MAIN ST	H2.A-65	TOWN OF ACTON		472 MAIN STREET		ACTON	MA	01720
36 STOW ST	H2.A-66	SIMEONE FAMILY LLC		34 LIBERTY STREET		ACTON	MA	01720
106 MAIN ST	H2.A-67	MARTHINSEN ERIC J TRUSTEE	MILLETT LISA C TRUSTEE	ACTON REALTY TRUST	106 MAIN ST	ACTON	MA	01720
104 MAIN ST	H2.A-70	SMITH PETER M	SMITH TINA M	104 MAIN ST		ACTON	MA	01720
102 MAIN ST	H2.A-72	GETSICK DAVID J	GETSICK CHERYL A	102 MAIN ST		ACTON	MA	01720
100 MAIN ST	H2.A-73	CONNORS KIMBERLY J		100 MAIN ST		ACTON	MA	01720
100 MAIN ST	H2.A-73	CONNORS KIMBERLY J	HUGHES JOHN W	100 MAIN ST		ACTON	MA	01720
86 MARTIN ST	H2.A-74	JOHNSTON BONNIE		86 MARTIN ST		ACTON	MA	01720
96 MAIN ST	H2.A-75	TROMBLY ROBERT N	TROMBLY TANYA W	96 MAIN STREET		ACTON	MA	01720
94 MAIN ST	H3.B-1	MANKA SAMUEL A		94 MAIN ST		ACTON	MA	01720
90 MAIN ST	H3.B-5	MANGELS WENDY A	MANGELS DAVID J	90 MAIN ST		ACTON	MA	01720
88 MAIN ST	H3.B-11	LAROCCA BONITA J		88 MAIN ST		ACTON	MA	01720
86 MAIN ST	H3.B-20	LAROCCA BONITA J		88 MAIN ST		ACTON	MA	01720
84 MAIN ST	H3.B-20-1	THIRUVENGADAM KRISHNAN	KRISHNAN SUDHA	82 MAIN ST		ACTON	MA	01720

5 FLETCHER CT	H3.B-27	SUMMERS-MCGUINNESS MICHAEL P	SUMMERS-MCGUINNESS TAI	5 FLETCHER CT	ACTON	MA	01720

The owner of land sharing a common boundary or corner with the site of the proposed activity (100 feet) in any direction, including land located directly across a street, way, creek, river, stream, brook or canal. The above are as they appear on the most recent applicable taxes.

Daryl Powell

April 6, 2011

Acton Assessors Office
(978) 929-6621

APPENDIX A

NOI Supplementary Narrative

O'Reilly, Talbot & Okun
[A S S O C I A T E S]
ENGINEERING
Environmental Safety Health Geotechnical

19 W. Main Street
Suite 205
Westborough, MA 01581
Tel 508 366 6409
Fax 508 366 9826
www.oto-env.com

April 21, 2011
File No: 0022–23–04

Prepared for:
Town of Acton
472 Main Street
Acton, Massachusetts 01720

NOI Supplementary Narrative
Town of Acton
Former Caouette Property
2 Stow Street
Acton, Massachusetts

Prepared by:
O'Reilly, Talbot & Okun Associates, Inc.
19 West Main Street, Suite 205
Westborough, Massachusetts 01581

TABLE OF CONTENTS

1.0 INTRODUCTION 1

1.1 Existing Conditions 1
1.2 Release History 1
1.3 Areas Requiring Remediation 2

2.0 WETLAND RESOURCES 2

2.1 Federal, State and Local Wetland Regulatory Definitions 2
2.2 Methodology 3
2.3 Resource Area Descriptions 3
2.3.1 Wetland Area E 3
2.3.1.1 Vegetation 4
2.3.1.2 Indicators of Hydrology 4
2.3.1.3 Hydric Soils 4
2.3.1 Wetland Area F 4
2.3.1.1 Vegetation 5
2.3.1.2 Indicators of Hydrology 5
2.3.1.3 Hydric Soils 5
2.3.1 100 foot Buffer Zone and BLSF 6
2.3.1.1 Vegetation 6
2.3.1.2 Soils 6

3.0 SENSITIVE ECOLOGICAL RESOURCES 6

4.0 PROJECT DESCRIPTION 7

4.1 Temporary Impacts 7
4.2 General Construction Requirements 7
4.3 Offsite Disposal 8
4.4 Regulatory Compliance 8

5.0 RESTORATION 8

5.1 Proposed Restoration Components 9
5.1.1 Soils 9
5.1.2 Vegetation 9
5.1.3 Additional Forest Substrate Treatment 9
5.2 Post-restoration Monitoring 9
5.2.1 Performance Standards 9
5.2.2 Restoration Monitoring Methodology 10
5.2.2.1 Invasive Species 10
5.2.2.2 Reporting 11
5.3 Risk and Uncertainty 11

6.0 BEST MANAGEMENT PRACTICES 11

TABLES

Table 2–1. Summary of wetland resource areas.
Table 4–1. Summary of temporary resource area impacts.
Table 5–1. Summary of restored wetland plant community metrics.

FIGURES

Figure 1–1. Site Locus Map.
Figure 1–2. Soil Removal Areas.
Figure 2–1. Natural Resource Conservation Service (NRCS) Soils Map.

APPENDICES

Appendix A.1 Photographs of Soil Excavation Area
Appendix A.2 Definitions of Resource Area Types (310 CMR 10.00 *et seq.*)
Appendix A.3 Methods used to Identify Resource Area Types
Appendix A.4 MassDEP Data Sheets

1.0 INTRODUCTION

This Notice of Intent (NOI) supplementary narrative was prepared on behalf of the Town of Acton by O'Reilly, Talbot & Okun Associates, Inc. (OTO) in accordance with applicable regulations cited under the Massachusetts Wetlands Protection Act M.G.L. Ch. 131, §40 (the "Act"); its implementing regulations 310 CMR 10.00 *et seq.*; and the Town of Acton Wetlands Protection Bylaw, Chapter F (the "Bylaw"). The NOI was prepared in response to the proposed remediation of soils impacted by hazardous compounds within jurisdictional wetland resources.

The NOI is an application for an Order of Conditions (OOC), which is a permit issued by the Town of Acton Conservation Commission (ConCom). The OOC is required in order to conduct the proposed remediation project within jurisdictional wetland resources protected under the Act and the Bylaw. As required under the Bylaw, this NOI presents the information necessary to evaluate jurisdictional wetland resources; the proposed activities; temporary impacts; and proposed mitigating measures.

1.1 Existing Conditions

Located at 2 Stow Street in Acton, Massachusetts, the Stow Street parcel of the former Caouette property covers approximately 7.5 acres of undeveloped farmland (Figure 1–1). Adjacent land uses are principally residential, with a smaller agricultural component.

The disposal site (the "site") is situated within a mesic, deciduous forested stand bordered to the east by a former Massachusetts Bay Transit Authority (MBTA) railway easement, in addition to an impounded reach of the Fort Pond Brook, portions of which are locally referred to as Mill Pond.

1.2 Release History

Based upon a review of historical information conducted in March of 2010 as part of a Phase I Environmental Site Assessment (OTO, 2010), it was determined that the site supported various light industrial and manufacturing facilities during a period dating from 1892 to 1917. Specifically, the site previously supported the Morocco Factory (leather); an unidentified ice cream pail manufacturer; and the Moore & Burgess Company (a fabric strip manufacturer).

The possibility that historical uses of the site had impacted soils and groundwater was assessed with a sub-surface exploration within the vicinity of the former on–site factory buildings. The results of the assessment indicated that the metalloid arsenic is present in surface soils at concentrations greater than 40 mg/kg, which is above applicable screening benchmarks. In addition to arsenic, other potentially hazardous compounds detected in soils above applicable screening levels include the metal lead and a group of organic compounds known as polycyclic aromatic hydrocarbons (PAHs).

Following the identification of soils impacted by historical activities at the site, OTO installed temporary fencing as an initial Immediate Response Action to reduce human exposure potential; particularly for the arsenic–impacted soils. OTO also recommended that impacted soils with concentrations greater than the Massachusetts Contingency Plan (MCP) S–1 standards for soil (the most conservative residential standards) be excavated and transported off of the site.

1.3 Areas Requiring Remediation

A total of four areas requiring remediation have been identified including the former Morocco Factory (lead and PAHs) and three areas on the Site that are known to be impacted with arsenic. The total area of soil removal equals 8,287 square feet (ft^2) (614 cubic yards [yd^3]), which includes impacts to upland and wetland resource areas. The areas of soil excavation are depicted on Figure 1–2. Photographs of the areas requiring remediation are provided in Appendix A.1.

2.0 WETLAND RESOURCES

The following section discusses the federal and state regulatory definitions as they apply to the identification of wetland resources, in addition to describing the methods used to identify jurisdictional resources. Indeed, the regulatory definitions provided a guide to the field identification of wetland resources.

2.1 Federal, State and Local Wetland Regulatory Definitions

Within the Commonwealth of Massachusetts, wetlands are principally regulated at the local level, although state and (potentially) federal regulations also apply. Since local wetland regulations largely reflect state and federal regulatory definitions of wetlands, it makes sense to begin with a review of these regulatory frameworks.

At the federal level, the U.S. Army Corps of Engineers (ACOE) and the U.S. Environmental Protection Agency (EPA) define wetlands as "*Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas* (ACOE, 1987). The ACOE uses what is referred to as a three–parameter approach to wetland identification that includes: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Excepting unusual or "atypical" conditions as defined by the ACOE, the three ACOE-defined parameters are used together to meet the ACOE definition of a wetland.

At the state level, five freshwater resource area categories are recognized under the Act including: (1) Inland Bank (IB); (2) Bordering Vegetated Wetlands (BVW); (3) Land under Waterbodies and Waterways (LUWB); (4) Land Subject to Flooding (Bordering and Isolated

Areas) (*310 CMR 10.57*); and (5) Riverfront Area. These resource areas are defined further in Appendix A.2.

2.2 Methodology

The field delineation of wetland resources adjacent to the proposed project area was conducted by Carr Research Laboratory (CRL) in September of 2008 and The BSC Group (BSC) in December of 2010. For the purposes of this NOI, the boundary delineated by CRL is defined as the primary wetland boundary. The portions delineated by the BSC Group were used to simply fill in gaps within the CRL boundary.

An OTO Senior Ecologist and the Town of Acton Conservation Agent Tom Tidman reviewed the wetland boundary adjacent to the proposed area of soil remediation on February 11, 2011; a portion of which was re-flagged by Mr. Tidman. The wetland boundary adjacent to the proposed excavation area, however, has not been formally reviewed and approved by the ConCom.

Jurisdictional resource types were delineated by CRL using the methodology specified in the guidance document "*Delineating Bordering Vegetated Wetlands under the Massachusetts Wetlands Protection Act: A Handbook"* (Massachusetts Department of Environmental Protection [MassDEP], 1995). As discussed in the guidance document, vegetated wetlands are defined by the presence of 50 percent or more wetland indicator plants and saturated or inundated conditions. The edge of the wetland boundary occurs at a point when the indicators of hydrology are lost and less than 50 percent of the plant community consists of wetland indicator plants. Other properties examined within wetlands included hydric soils and other indicators of wetland hydrology, e.g., water stained leaves. The methods used to identify wetland resource areas are provided in Appendix A.3.

2.3 Resource Area Descriptions

Two wetlands were identified by CRL adjacent to the proposed area of soil remediation including Wetland Area E (Flag Series E1 through E10) and Wetland Area F (Flag Series F1 through F77). Wetland Area E is associated with the bank of Fort Pond Brook, whereas Wetland F is associated with a thin fringe of bordering vegetated wetlands. Wetland boundaries are depicted on Figure 1–2. A data transect was established by CRL at wetland flag F-35, which served as confirmation of the MassDEP methodology. MassDEP Data sheets are provided in Appendix A.4.

2.3.1 Wetland Area E

Wetland Area E is present as a narrow band of shrubs and trees adjacent to Fort Pond Brook. Jurisdictional resources associated with Wetland Area E that are regulated under the Act and the Bylaw include (1) Inland Bank (IB); (2) Land under Waterbodies and Waterways (LUWB); and (3) Bordering Land Subject to Flooding (BLSF) (*310 CMR 10.57*).

The presence of BLSF on the site was confirmed by examining the Flood Insurance Rate Map (FIRM) for Middlesex County (Panel 354 of 656; Map No. 25017C0354E; June 4, 2010). As it occurs on the site, the limits of the 100 year floodplain (and BLSF) correspond with elevation 194 (North American Vertical Datum of 1988 [NAVD 88]) and mapped Flood Zone A, which identifies areas subject to inundation by the 1–percent–annual–chance flood event.

Although the resource areas associated with Wetland Area E are defined further in Appendix A.2, more explanation for the absence of the 200–foot Riverfront Area is warranted here. Specifically, in that the Fort Pond Brook was impounded to create Mill Pond, the 200–foot Riverfront Area only applies to those portions of the brook that are distinctly riverine. As such, and in accordance with 310 CMR 10.58(2)(a)(1)(h):

> *"Where rivers flow through lakes or ponds, the riverfront area stops at the inlet and begins again at the outlet".*

Given this provision in the Act, OTO has determined that the 200–foot Riverfront Area is not applicable to this portion of the site. The 200–foot Riverfront Area, however, is associated with portions of Fort Pond Brook along the southwestern portion of the property (Figure 1–2). It is at this point that distinctly riverine properties were observed by CRL.

2.3.1.1 Vegetation

Slopes leading into Wetland Area E consist of the steep banks associated with the former Boston & Maine railway line. Soils in the former railway easement consist of sandy bank gravel. The plant species observed on the slope include species tolerant of sandy, nutrient poor conditions including *Pinus strobus* (white pine) and *Betula populifolia* (grey birch).

2.3.1.2 Indicators of Hydrology

The most significant indicator of hydrology within Wetland Area E is the presence of standing water. Evidence of variable water table levels were observed by OTO in the Fort Pond Brook during August. Secondary indicators of hydrology include buttressed tree roots and water–stained leaves.

2.3.1.3 Hydric Soils

Soils were not evaluated by CRL, given the presence of a steep bank leading into the Mill Pond.

2.3.1 Wetland Area F

Wetland Area F is present as a narrow band of shrubs and trees adjacent to Fort Pond Brook. Jurisdictional resources associated with Wetland Area F that are regulated under the

Act and the Bylaw include (1) Inland Bank (IB); (2) Bordering Vegetated Wetlands (BVW); (3) Land under Waterbodies and Waterways (LUWB); (4) Land Subject to Flooding (Bordering and Isolated Areas) (*310 CMR 10.57*); and (5) Riverfront Area. As previously discussed, the 200-foot Riverfront Area does not overlap with the proposed area of soil remediation.

2.3.1.1 Vegetation

Dominant species within the canopy layer of the narrow strip of bordering vegetated wetland adjacent to the site includes the hydrophytic tree species *Acer rubrum* (red maple) (FAC) and *Populus deltoides* (cottonwood). Other species observed at lesser frequency and cover include *Quercus alba* (white oak) and *Prunus serotina* (black cherry). Trees are widely spaced and the average estimated diameter at breast height (dbh) ranges from 4 to 12 inches. Estimated canopy cover ranges from 90–100% and understory light levels were moderate. Lateral light penetration from adjacent cleared areas (agricultural fields) contributes the most to the understory light environment. Scattered shrubs are present, with the dominant species including *Cornus amomum* (silky dogwood)(FACW) along with an admixture of *Rhamnus frangula* (Eurpoean buckthorn). Species observed by CRL in the understory include *Osmunda cinnamomea* (cinnamon fern).

2.3.1.2 Indicators of Hydrology

The most significant indicator of hydrology within Wetland Area F is the presence of standing water. Sluggish flows were observed in Fort Pond Brook during 7Q10 low flows in August. Secondary indicators of hydrology within the wetland include buttressed tree roots and water-stained leaves.

2.3.1.3 Hydric Soils

The soils identified by CRL within Wetland F are consistent with the Scio series (Figure 2–1). The Scio series consists of very deep, moderately well drained soils formed in eolian, lacustrine, or alluvial sediments dominated by silt and very fine sand (Natural Resource Conservation Service [NRCS], 2009). They are found on terraces, old alluvial fans, lake plains, outwash plains and lakebeds (NRCS, 2009).

Although an upland soil series, CRL found evidence of wetland hydrology within the soils close to the edge of the Mill Pond. In this regard, a representative profile excavated within the wetland yielded 0–10 inches of a very dark grayish brown (10YR 3/2) sandy loam within the A-horizon, which was described as "topsoil" by CRL. This is likely a plowed layer, which is also known as an Ap horizon. This layer is underlain by a brown (10YR 4/3) sandy loam within the C-horizon from a depth of 10–15+ inches. Yellowish–brown (7.5YR 5/8) redoximorphic features including oxidized Fe (iron) masses were observed within this horizon at a proportion of >10%. This description matches the profile description provided by the NRCS for the Scio series, although the C-horizon identified by CRL most likely

corresponds to a Bw2 horizon. It is possible that the Bw1 was altered as a consequence of agricultural activities, i.e., plowing may have obliterated this horizon.

2.3.1 100 foot Buffer Zone and BLSF

2.3.1.1 Vegetation

The portion of the 100 foot buffer zone and BLSF within the remediation area supports a mesic forested stand dominated by red maple with scattered cottonwood and black cherry. Trees are widely spaced and the average estimated diameter at breast height (dbh) ranges from 4 to 12 inches. Estimated canopy cover ranges from 90–100% and understory light levels were moderate. Lateral light penetration from the adjacent agricultural field contributes the most to the understory light environment. Tree species observed on the former Boston & Maine railway easement include scattered white pine and grey birch.

Within the shrub layer, a number of invasive species including European buckthorn; *Rosa multiflora* (multiflora rose); and *Berberis thunbergii* (Japanese berberry) were noted. Lianas include *Celastrus orbiculatus* (oriental bittersweet) and *Vitus riparia* (river grape).

2.3.1.2 Soils

The soil series mapped by the Natural Resource Conservation Service (NRCS) within the soil remediation area include a Scio very fine sandy loam, which is considered an upland soil series.

3.0 SENSITIVE ECOLOGICAL RESOURCES

Sensitive ecological resources include (1) Areas of Critical Environmental Concern (ACECs) and (2) rare, threatened, and endangered species. ACECs are places in Massachusetts that receive special recognition because of the quality, uniqueness and significance of their natural and cultural resources. These areas are identified and nominated at the community level and are reviewed and designated by the state's Secretary of Environmental Affairs. The presence of designated ACECs was confirmed by consulting mapping provided on the Massachusetts Department of Conservation and Recreation (DCR), Areas of Critical Environmental Concern Program website www.gov/dcr/stewardship/acec.

Rare species habitat mapping updated by the Natural Heritage and Endangered Species Program (NHESP) for 2008 was consulted to determine whether the site occurs within either Priority Habitats or Estimated Habitats of rare species. As defined by the NHESP, Priority Habitat is based on the known geographical extent of habitat for all state-listed rare species, both plants and animals, and is codified under the Massachusetts Endangered Species Act (MESA). Estimated Habitats are a sub-set of the Priority Habitats, and are based on the geographical extent of habitat of state-listed rare wetlands wildlife and is codified under the Act, which does not protect plants.

The site is not situated within an ACEC. Furthermore, it has been determined that the site does not occur within either Priority Habitats or Estimated Habitats of Rare Species.

4.0 PROJECT DESCRIPTION

This section provides a description of the proposed activities that will take place within jurisdictional resources including BLSF and the 100 foot Buffer Zone. The implications of the proposed temporary impacts from the perspectives of the Act and the Bylaw are also addressed

4.1 Temporary Impacts

As previously discussed, the total area of soil removal equals 8,287 square feet (ft^2) (614 cubic yards [yd^3]), which includes temporary impacts to upland and wetland resource areas. Of this total, combined temporary impacts to the 100 foot buffer zone and BLSF equal 8,054 ft^2 (597 yd^3). This can be further broken down to 3,972 ft^2 (294 yd^3) for BLSF and because the 100 foot buffer zone overlaps with BLSF, 3,972 (294 yd^3) + 4,082 ft^2 (303 yd^3) for the 100 foot buffer zone (Table 4–1).

4.2 General Construction Requirements

The General Construction Requirements that apply to the loading and transport of impacted soils from each of the planned soil excavation areas are listed below:

1. Woody vegetation (trees, shrubs, and vines) will be removed during the excavation, which will be conducted with a track excavator, and where necessary, hand-excavation;

2. Excavation work will not be conducted during periods of high wind (over 20 mph);

3. Trucks and excavation equipment will be located outside the limits of excavation and the 100 foot buffer zone;

4. Excavated soil will be placed carefully into dump trucks to avoid spilling of soil onto non impacted areas. No over–filling will be permitted;

5. As a contingency against possible loading spills, 6 millimeter thick plastic sheeting will be placed on the ground between the excavation area and the dump truck to catch any soil spills;

6. At the end of each construction day, temporary plastic sheeting will be placed and secured to prevent exposure to disturbed soil;

7. Temporary plastic sheeting will be maintained in excavated areas until pre or post characterization testing indicated remediation criteria are met;

8. Straw wattles will be placed on the downslope margins of excavations and soil management areas to minimize potential for migration of impacted soils outside of planned areas of excavation; and

9. Dump trucks will be required to use dust covers to limit potential for dust generation and will be driven at speeds less than 5 mph on site.

4.3 Offsite Disposal

At this time, it is proposed that the excavated material be disposed of offsite at Environmental Soil Management Companies (ESMI), which is a soil recycling facility located in Loudon, New Hampshire. Acceptance of the PAH, lead, and arsenic impacted soils from the Site would be contingent upon additional testing to ensure that the soil is not a hazardous waste and meets the criteria of the facility.

4.4 Regulatory Compliance

As discussed by the MassDEP, limited projects are categories of activities within the existing wetlands regulations which can proceed at the discretion of the ConCom without fully meeting the resource area performance standards. Many limited projects are activities which are important to public health, safety, and the environment. Given this, the proposed remediation of contaminated soils within BLSF would qualify as a limited project under 310 CMR 10.53(3)(q) "*Assessment, monitoring, containment, mitigation, and remediation of, or other response to, a release or threat of release of oil and/or hazardous material in accordance with the provisions of 310 CMR 40.0000*".

However, it is only necessary to claim limited project status when the proposed work would otherwise fail to meet one or more general performance standards for work within jurisdictional resource areas. In that the work will not violate any performance criteria, limited project status is not being invoked for this project.

5.0 RESTORATION

The principal objective of the restoration plan is to duplicate the conditions originally present in BLSF and the 100 foot buffer zone prior to disturbance and replace the material lost during cleanup activities. Where applicable, the monitoring specified in this Plan was developed in accordance with the MassDEP guidance document *Massachusetts Inland Wetland Replication Guidelines"* (MassDEP, March 2002).

5.1 Proposed Restoration Components

5.1.1 Soils

Sources of clean soils to be placed back into excavated areas will include approximately 1.5 feet of clean mineral backfill (very fine sandy loam or equivalent) and 0.5 feet of a created topsoil. The topsoil will consist of a mixture of equal volumes of organic and mineral materials. Well-decomposed clean leaf compost is the preferred soil amendment to achieve these standards. Constructed soils used in the remediated areas will possess approximately 12% organic carbon and may be tested for organic carbon content before use in the mitigation area. Soils contain seed banks, oftentimes comprised of weedy species. As such, soils proposed for the mitigation area will ideally be sterile. Grading of soils will be done by hand.

5.1.2 Vegetation

Following grading, the new soils will be seeded with an appropriate seed mix. In this regard, the New England Erosion Control/Restoration Mix for Detention Basins and Moist Sites available from New England Wetland plants will be applied to exposed soils. Plant species in this mix include: sensitive fern; New England aster; and little bluestem amongst others. The manufacturer's recommended application rate is 35 lbs/acre (1,250 ft^2/lb). This seed mix was selected given the presence of an intact forested canopy.

In addition to the seed mix, it is proposed that native woody tree and shrub species be planted including: red maple saplings and shrubs such as *Amelanchier canadensis* (serviceberry) (FAC) and *Cornus racemosa* (gray dogwood) (FAC).

5.1.3 Additional Forest Substrate Treatment

Where applicable, a thin layer of leaf litter will be obtained from adjacent areas and scattered on exposed soils by hand. Leaf litter has a major impact on soil micro–environmental conditions (light, temperature, and moisture) and so can be an important influence on seedling recruitment and plant community structure. Even small disturbances to the forest floor that result in the exposure of bare soil to light may promote seed germination and establishment; including those of invasive species. Branches and other coarse woody debris will be placed back in the wetland once the leaf litter has been applied.

5.2 Post-restoration Monitoring

5.2.1 Performance Standards

As proposed, monitoring will occur in the late summer/early fall for two growing seasons following completion of the remediation. The following performance criteria will be addressed as part of each monitoring effort:

1. Remediated areas have at least 80% cover by noninvasive species. For the purpose of this success standard, invasive species of hydrophytes are defined as:

   Cattails – *Typha latifolia, T. angustifolia, T. glauca*;
   Common Reed – *Phragmites australis*;
   Purple Loosestrife – *Lythrum salicaria*;
   Reed Canary Grass – *Phalaris arundinacea*; and
   Buckthorn – *Rhamnus frangula.*

   Other invasives such as Japanese berberry (*Berberis thunbergii*), Common reed (*Phragmites australis*), purple loosestrife *(Lythrum salicaria*), Russian and autumn olive (*Elaeagnus* spp.), buckthorn (*Rhamnus* spp.), Japanese knotweed (*Polygonum cuspidatum*), and/or multiflora rose (*Rosa multiflora*) plants that become established within remediated portions of the wetland will be controlled. For this standard, small patches will be eliminated during the entire monitoring period. Large patches will be aggressively treated and the treatment will be documented.

2. Slopes, soils, and substrates within and adjacent to the remediation area(s) are stable.

5.2.2 Restoration Monitoring Methodology

The purpose of monitoring within the restored 100 foot buffer zone is primarily to determine whether the planted stock has successfully established. Within areas affected by the remediation, at least ten, one meter by one meter square plot will be used to sample the herbaceous layer. Within each plot, herbaceous species will be identified to the lowest practical taxonomic distinction and leaf litter thickness will be measured.

Using the data collected in each plot, five descriptive metrics will be reported including: (1) species richness; (2) percent cover; (3) relative dominance; (4) relative frequency; and (5) an Importance Value identifying those plant species that are essentially most important, i.e. most dominant and occur most frequently within the given community (Table 5–1).

Tree and shrub species will be assessed by placing each individual into one of three survival classes including (1) alive, (2) stressed and (3) dead. The number of individuals in each of the three survival classes will be reported for each species.

5.2.2.1 Invasive Species

Invasive species are already present within the 100 foot buffer zone, although attempts will be made to control their establishment within remediated portions of the site.

Where applicable and as approved by the ConCom, methods to control invasive species will include either basal application of herbicides, e.g., Rodeo, or mechanical methods.

Specifically, mechanical removal using a hoe or Weed Wrench® is not only very effective, it may pose the least threat to non-target species and the general site environment. This is a primary concern; namely that the removal process selected be the least disruptive to native species within the restored wetland areas. Tools such as the Weed Wrench® are helpful for uprooting larger or older shrubs. Shaking dirt from the roots back into the digging hole, stamping the disturbed ground, and covering the disturbed area with leaves or other surface debris will result in a natural looking terrain. Mechanical methods are particularly effective at removing species such as Japanese barberry.

5.2.2.2 Reporting

Monitoring reports will be prepared and submitted to the ConCom following each monitoring event. Each annual monitoring report will be submitted to the ConCom no later than December 15 of the year being monitored. The reports will address each of the previously discussed success standards in the summary data section in the appropriate section. The reports will also include all applicable appendices.

For the purposes of this restoration plan, the first year of monitoring is defined as the first year that the wetland has been through a full growing season after completion of remediation.

5.3 Risk and Uncertainty

As proposed, the restoration plan proposes to re-create a natural system with fairly well defined objectives. As with any natural system, risk and uncertainty are essentially inherent and may affect the desired outcome of the wetland mitigation.

There is uncertainty with respect to the survival of planted stock, the quality of the restoration area construction process, and the establishment of invasive plant species. There is also uncertainty with respect to the time it will take for the restoration area to approximate pre-remediation conditions and there is also uncertainty with respect to the outcome of interspecific competitive interactions. Stochastic processes such as extended drought and the effects of pathogens may also affect the outcome of the wetland restoration.

Regardless of the levels of uncertainty, however, the restoration design has attempted to be as comprehensive as possible such that sources of significant risk have been accounted for. The proposed monitoring efforts are also fairly detailed and will identify significant changes in plant community composition fairly rapidly, and more importantly, will also closely track the establishment of invasive plant species.

6.0 BEST MANAGEMENT PRACTICES

Best Management Practices (BMPs) including erosion and sedimentation controls will be implemented before construction begins in accordance with a site-specific BMP plan.

Indirect impacts to wetland resources will be mitigated by using BMPs to limit or eliminate the amount of erosion and sedimentation affecting onsite wetlands during construction. Standard BMPs including silt fence, straw wattles, and potentially, coconut mats will be installed before construction begins. In that certain of these devices potentially constitute barriers to the movement of wildlife, these devices will be removed once construction is complete and soils are well established with vegetation.

Temporary devices and structures to control erosion of soils in and around wetland resources will be properly maintained at all times. Soils collected by these devices will be removed in a manner that prevents its erosion and transport to adjacent resource areas. Cordoning off of the construction area with erosion controls will not be conducted as it impedes animal movement. If circling of the entire site is needed, either gaps or overlaps with intervening space will be provided.

TABLES

Table 2–1. Summary of wetland resource areas.

Area	Affected Parcel	Flag Series	Wetland Community Type	Resource Area Type
Wetland Area E	2 Stow Street	WF E1 – 10	OpenWater/ Forested/Scrub-shrub	Bordering Vegetated Wetland Inland Bank Land under Waterbodies and Waterways Bordering Land Subject to Flooding
Wetland Area F	2 Stow Street	WF F1 – 77	Open water/ Forested/Scrub-shrub	Bordering Vegetated Wetland Inland Bank Land under Waterbodies and Waterways Bordering Land Subject to Flooding
Wetland Flag Series Connecting Wetland E and F[1]	2 Stow Street	WF B35-B39)	Open water/ Forested/Scrub-shrub	Bordering Vegetated Wetland Inland Bank Land under Waterbodies and Waterways Bordering Land Subject to Flooding
Area of Soil Remediation	2 Stow Street	Not Applicable	Mesic red maple stand	100-foot Buffer Zone Bordering Land Subject to Flooding

Table 4–1. Summary of temporary resource area impacts.

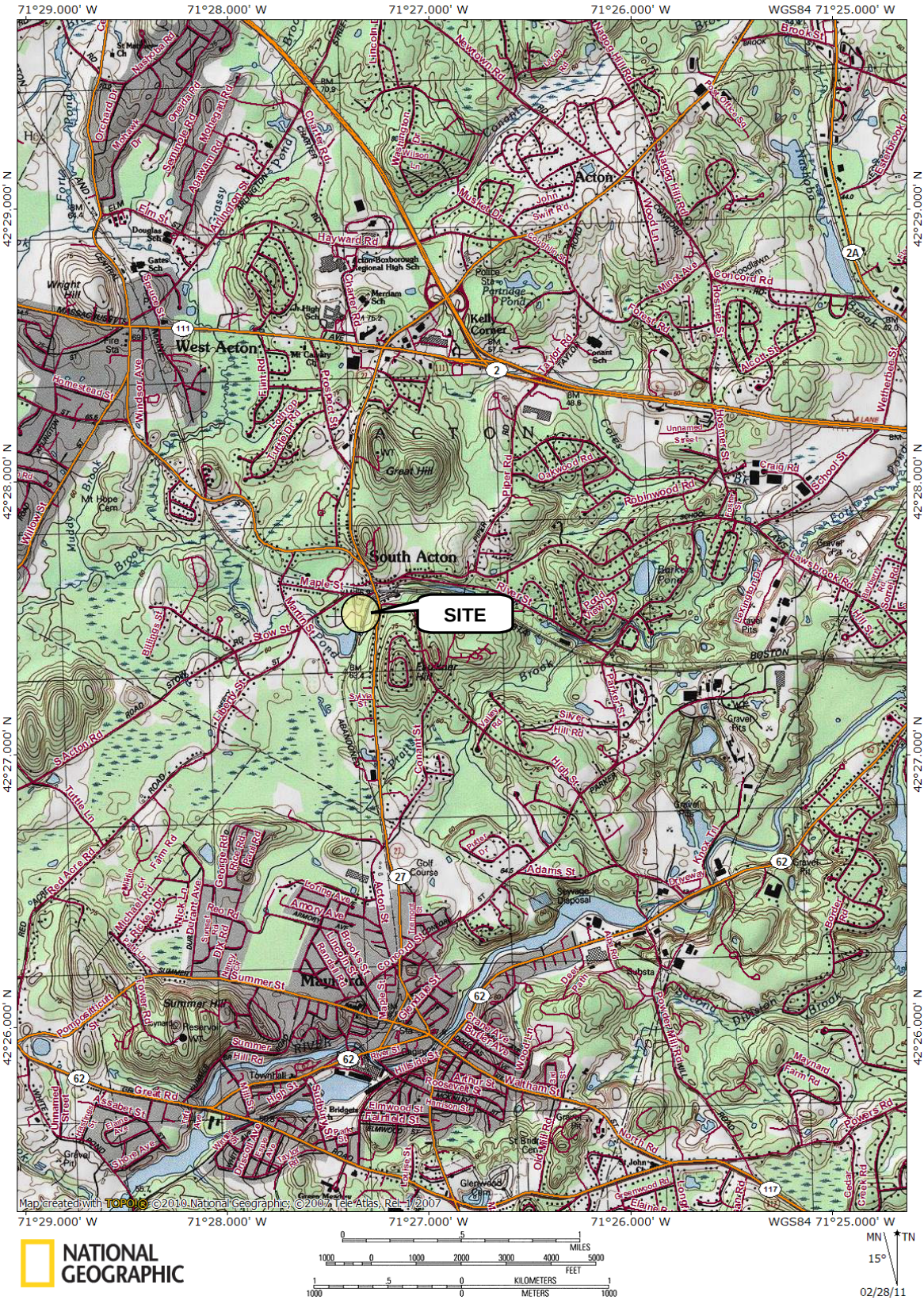
Area	Affected Parcel	Temporary Impacts (ft^2)	Temporary Impacts (yd^3)
Wetland Area E	2 Stow Street	0	0
Wetland Area F	2 Stow Street	0	0
Area of Soil Remediation	2 Stow Street	BLSF = 3,972 100 foot Buffer Zone = 3,972 +4,082 = 8,054	BLSF = 294 100 foot Buffer Zone = 294+303 = 597
TOTALS		8,054	597

[1] This flag series was delineated by the BSC Group in December of 2010.

Table 5–1. Summary of restored area plant community metrics.

METRIC	FORMULA	VARIABLES DEFINED
Species Richness (R)	NA	R = numbers of species
Percent Cover (%)	NA	Percent Cover = estimated percent cover for species *x* in plots 1…n;
Relative Dominance (D_R)	$D_R = 100 * \frac{\left(\sum_{i=1}^{n} PC_{species}\right) / A_{TOTAL}}{\sum_{i=1}^{n} D_{species}}$	$PC_{species}$ = summed percent cover for species *x* in plots 1…n; A_{total} = total area sampled $D_{species}$ = summed dominance for species 1…*n*
Relative Frequency (F_R)	$F_R = 100 * \frac{\left(\sum_{i=1}^{n} n_{species}\right) / N_{TOTAL}}{\sum_{i=1}^{n} F_{species}}$	$n_{species}$ = number of plots *1…n* in which species *x* occurs; N_{total} = total number of plots sampled; $F_{species}$ = summed frequency for species 1…*n*
Importance Value (IV_{ave})	$IV_{ave} = (D_R + F_R)/2$	D_R = relative dominance F_R = relative frequency

FIGURES

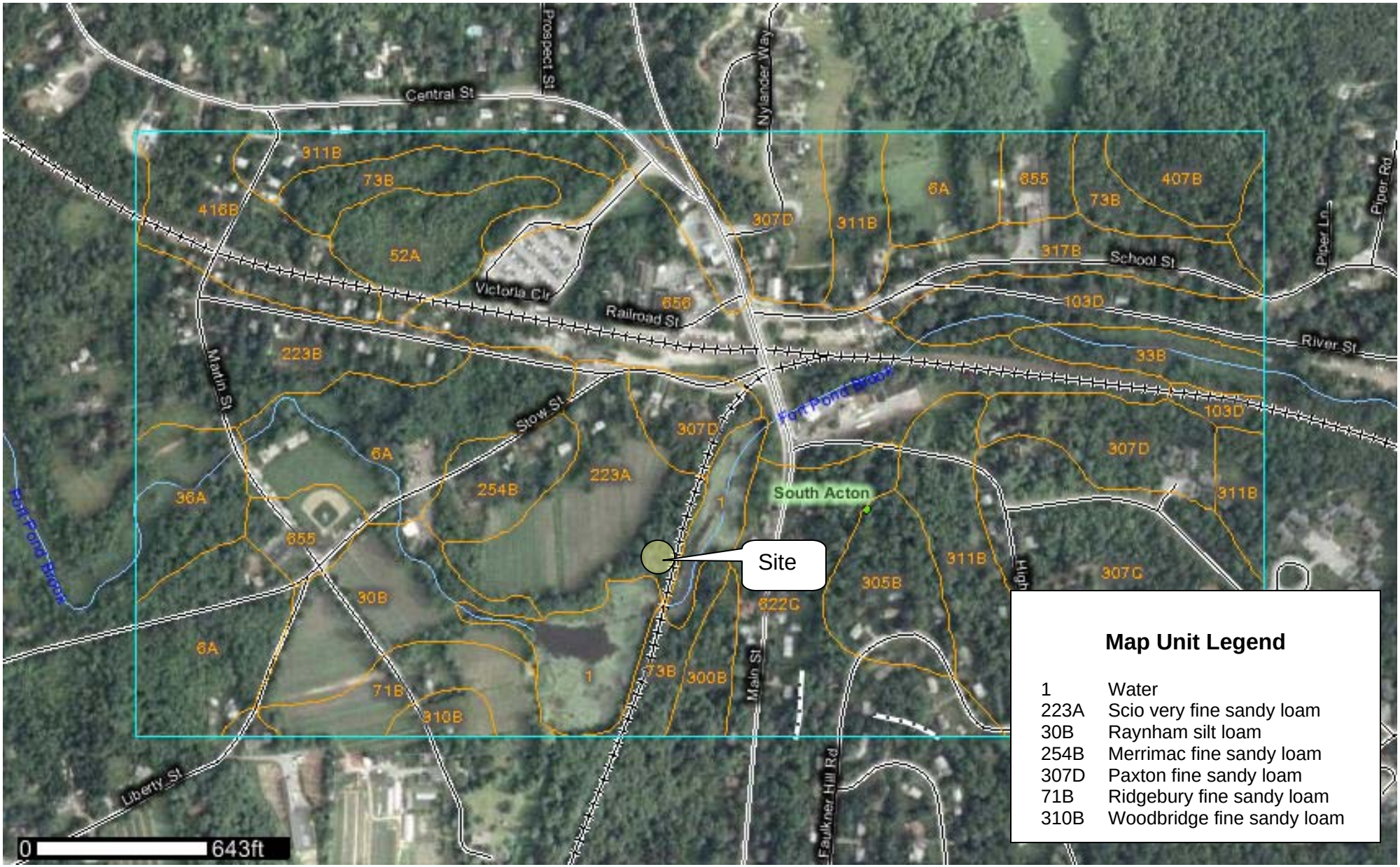


O'Reilly, Talbot & Okun
[ASSOCIATES]
ENGINEERING

March 2011

Town of Acton
Notice of Intent
Acton, Massachusetts

Figure 1–1
Site Locus Map



O'Reilly, Talbot & Okun [ASSOCIATES] ENGINEERING

March 2011

Town of Acton
Contaminated Soil Removal
Notice of Intent (NOI)
Acton, Massachusetts

Figure 2–1

Natural Resource Conservation Service (NRCS) Soils Map

DENTIAL

STOW STREET PUBLIC WAY

MAPLE STREET

RESIDENTIAL

DWELLING #10

100-FT BUFFER

100' RIVERFRONT

200' RIVERFRONT

100-YR F.P. (EL=194.8)

LIMIT OF RIVERFRONT

FORT POND BROOK

BRIDGE

WETLANDS

2 STOW ST. PARCEL

CART PATH

100' BUFFER

MILL POND

APPROXIMATE BOUNDARIES OF FORMER MOROCCO FACTORY/ MOORE & BURGESS WEBBING COMPANY

APPROXIMATE BOUNDARIES OF SOIL REMOVAL AREA

RAILROAD TRACKS

FORMER LOCOMOTIVE HOUSE

FORMER TURNTABLE (ROUNDHOUSE)

EXCAVATION LIMITS TO BE DETERMINED

R.R. BRIDGE

MILL POND (FROM TOWN ATLAS)

SCALE 1" = 40'

0 20' 40' 80'

LEGEND

- PROPERTY LINE
- 100' WETLAND BUFFER ZONE
- 100 YEAR FLOODPLAIN
- APPROXIMATE BOUNDARIES OF SOIL REMOVAL AREA (TOTAL REMOVAL AREA APPROX. 8,287 SQ. FT. / 614 CU. YD.)
- APPROXIMATE BOUNDARIES OF SOIL REMOVAL AREA WITHIN 100' BUFFER ZONE (APPROX. AREA 8,054 SQ. FT. / 597 CU. YD.)
- APPROXIMATE BOUNDARIES OF SOIL REMOVAL AREA WITHIN BOTH 100' BUFFER ZONE AND 100 YEAR FLOODPLAIN (APPROX. AREA 3,972 SQ. FT. / 294 CU. YD.)

NOTES:
SITE PLAN DEVELOPED FROM A 9/14/09 PLOT PLAN OF THE PROPERTY BY FORESITE ENGINEERING, DATED 9/14/09; FROM A PROGRESS PRINT OF THE PROPERTY BY STAMSKI AND MCNARY, INC., DATED 5/19/10; FROM ONLINE ASSESSORS MAPS, FROM HISTORIC SANBORN FIRE INSURANCE MAPS AND FROM TAPED FIELD MEASUREMENTS.

O'REILLY, TALBOT & OKUN [ASSOCIATES]

- PROJECT MANAGEMENT
- ENVIRONMENTAL ENGINEERING
- GEOTECHNICAL ENGINEERING
- ASBESTOS PLANNING & MANAGEMENT
- RISK ASSESSMENT
- CORPORATE CAD

19 WEST MAIN STREET
SUITE 205
WESTBOROUGH, MA 01581

PHONE:
(508) 366-6409

EMAIL:
OFFICE@OTO-ENV.COM

SCALE: 1" = 40'
PROJ. NO: J0022-23-04
DRAWN: APR
CHECKED: JJP
DATE: MARCH 7, 2011

PROJECT TITLE:

CAOUETTE PROPERTY

2 STOW STREET
ACTON, MA

DRAWING TITLE:

SOIL REMOVAL AREAS

DRAWING NO.:

1 – 2

I:\J0022\23 Town of Acton\23 Caouette Property\Figures\J0022-23-04 Fig1 Vision MA NAD.dwg

Appendix A.1

Photographs of Soil Excavation Areas

Figure 1. View of soil excavation area facing east.

Figure 2. View of soil excavation area facing south.

APPENDIX A.2

Definitions of Resource Area Types (310 CMR 10.00 *et seq*.)

FRESHWATER RESOURCES

1. Inland Bank (IB) (*310 CMR 10.54)(2)(a)*

   "…the portion of the land surface which normally abuts and confines a water body. It occurs between a water body and a bordering vegetated wetland and adjacent floodplain, or, in the absence of these, it occurs between a water body and the upland". The boundary of Bank is defined in 310 CMR 10.54(2)(c) as "…the first observable break in slope or the mean annual flood level, whichever is lower. The lower boundary of a Bank is the mean annual low flow level".

2. Bordering Vegetated Wetland (BVW) (*310 CMR 10.55)(2)(c)*

   "…freshwater wetlands which 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 BVW is defined as "…the line within which 50% or more of the plant community consists of wetland indicator plants and saturated or inundated conditions exist".

3. Land Under Water Bodies and Waterways (LUWB) (*310 CMR 10.56*)

   "Land under Water Bodies and Waterways include "the land beneath any creek, river, stream, pond or lake. Said land may be composed of organic muck or peat, fine sediments, rocks, or bedrock. The boundary of Land under Water Bodies and Waterways is the mean annual low water level."

4. Land Subject to Flooding (Bordering and Isolated Areas) (*310 CMR 10.57*)

   Bordering Land Subject to Flooding (BLSF) is an area with low, flat topography adjacent to and inundated by flood water rising from creeks, rivers, streams, ponds, or lakes. It extends from the banks of these waterways and water bodies; where a bordering vegetated wetland occurs, it extends from said wetland. The boundary of Bordering Land Subject to Flooding is the estimated maximum lateral extent of flood water which will theoretically result from the statistical 100-year frequency storm (Table 1).

Table 1. Examples of storm recurrence intervals and probabilities of occurrence.

Storm Recurrence Interval (Years)	Probability Of Occurrence	Chance Of Occurrence
500	1 in 500	(1 – 0.998 = 0.002) or 0.2%
100	1 in 100	(1 – 0.99 = 0.01) or 1%
50	1 in 50	(1 – 0.98 = 0.02) or 2%
25	1 in 25	(1 – 0.96 = 0.04) or 4%
10	1 in 10	(1 – 0.90 = 0.10) or 10%
5	1 in 5	(1 – 0.80 = 0.20) or 20%
2	1 in 2	(1 – 0.50 = 0.50) or 50%

Isolated Land Subject to Flooding (ILSF) is an isolated depression or closed basin without an inlet or outlet. It is an area which at least once a year confines standing water to a volume of at least ¼ acre-feet and to an average depth of at least six inches. The boundary of ILSF is the perimeter of the largest recorded or observed volume of water confined in said area. Such areas are likely to be locally significant to flood control and storm damage prevention.

5. Riverfront Area (*310 CMR 10.58*)(2)(a)(3)

"the area between a river's mean annual high-water line measured horizontally outward from the river and a parallel line located 200 feet away…". The "Mean Annual High Water line of a river is 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".

A Riverfront Area is the area of 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.

1. A river is any natural flowing body of water that empties to any ocean, lake, pond, or other river and which flows throughout the year. Rivers include streams (see 310 CMR 10.04: Stream) that are perennial because surface water flows within them throughout the year. Intermittent streams are not rivers as defined herein because surface water does not flow within them throughout the year. When surface water is not flowing within an intermittent stream, it may remain in isolated pools or it may be absent. When surface water is present in contiguous and connected pool/riffle systems, it shall be determined to be flowing.

a. A river or stream shown as perennial on the current United States Geological Survey (USGS) or more recent map provided by the Department is perennial.

b. A river or stream shown as intermittent or not shown on the current USGS map or more recent map provided by the Department that has a watershed size greater than or equal to one square mile, is perennial.

c. A stream shown as intermittent or not shown on the current USGS map or more recent map provided by the Department, that has a watershed size less than one square mile, is intermittent unless:

    i. The stream has a watershed size of at least one-half (0.50) square mile and has a predicted flow rate greater than or equal to 0.01 cubic feet per second at the 99% flow duration using the USGS StreamStats method. The issuing authority shall find such streams to be perennial;

d. Notwithstanding 310 CMR 10.58(2)(a)1.a. through c., the issuing authority shall find that any stream is intermittent based upon a documented field observation that the stream is not flowing. A documented field observation shall be made by a

competent source and shall be based upon an observation made at least once per day, over four days in any consecutive 12 month period, during a non-drought period on a stream not significantly affected by drawdown from withdrawals of water supply wells, direct withdrawals, impoundments, or other man-made flow reductions or diversions.

Appendix A.3

Methods Used to Identify Resource Area Types

WETLAND RESOURCES

Wetland Indicator Plants

Wetland indicator plants are defined in the Act as any of the following:

1. Plant species listed in the Wetlands Protection Act;

2. Plants listed in the National List of Plant Species that Occur in Wetlands (Reed, 1988), with an indicator status of: OBL; FACW+; FACW; FACW-; FAC+; and FAC.

   For the purposes of this discussion, plants with a wetland indicator rating of obligate (OBL) occur in wetlands with an estimated probability of occurrence >99%; a facultative wetland (FACW) rating indicates an estimated probability of occurrence ranging from 67–99%; a facultative (FAC) rating indicates an estimated probability of occurrence ranging from 34–66%; a facultative upland (FACU) rating indicates an estimated probability of occurrence ranging from 1–33%; and an upland (UPL) rating indicates an estimated probability of occurrence of 0%.

   Occasionally, modifiers are used to refine the wetland indicator rating and include a positive (+) sign and a negative (–) sign. A positive sign indicates that the plant is more commonly found in the wetland and a negative sign indicates that it is less frequently found in the wetland; and

3. Individual plants that exhibit morphological or physiological adaptations of life in saturated or inundated conditions.

Vegetation within Wetland A was evaluated along a single line transect oriented perpendicular to the wetland boundary at wetland flag WF A-1. Within Wetland B, vegetation was evaluated at wetland flag WF A-5. At each end of the transect, which corresponded to a "wetland" and upland" plot respectively, a rectangular plot was positioned. The rectangular plot measured 15 feet in length and 5 feet in width. This plot shape was selected given the abrupt wetland:upland boundary encountered at the site.

Within each plot, plant species were divided into applicable layers including: tree, shrub, and herbaceous. Each species was identified to the lowest practical taxonomic distinction and assigned an estimated percent cover value. Using the percent cover values, a dominance value ($D_{x,y}$) was assigned to each species by layer. The value for $D_{x,y}$ is determined by dividing the percent cover for species x within layer y by the summed percent cover for all species within layer y. The resulting fraction is then converted to a percentage by multiplying the fraction by 100 where: $D_{x,y} = 100 * \frac{percent\,\mathrm{cov}\,er_{x,y}}{\sum_{i=1}^{n} percent\,\mathrm{cov}\,er_{x,y}}$.

Those species that individually contribute at least 20 percent dominance in a given layer *y* are always designated as "dominant species". The species within a layer are then sorted by percent cover. Those species that cumulatively provide 50 percent of layer *y*, regardless of whether they contribute 20 percent, are designated as dominant species. This is referred to as the "20/50" rule. Once the dominants are identified, the number of wetland species is compared to the number of non-wetland species. The wetland criterion is met if at least half of the plants are wetland indicator species.

Indicators of Hydrology

Although wetlands must have saturated or inundated conditions, these conditions do not have to be present throughout the year. As a consequence of this, the indicators of hydrology can be used to satisfy the hydrology criterion when no flooding or saturation is observed, or during those times of year when water table elevations are high and would be a spurious indicator only. In this regard, the presence of hydric soil is commonly used to indicate the presence of wetland hydrology.

Hydric Soil Indicators

Hydric soil indicators discussed in "Delineating Bordering Vegetated Wetlands under the Massachusetts Wetland Protection Act: A Handbook," include:

a. Histosols (organic soils). Histosols include at least 16 inches of organic material (measured from the surface);

b. Histic epipedons (8-16 inches of organic material measured from the surface);

c. Sulfidic material. A strong "rotten egg" odor;

d. Gleyed soils. Soils that are neutral grey, or occasionally greenish or bluish grey within 12 inches of the O-horizon;

e. Soils with a matrix chroma of 0 or 1 and values of 4 or higher within 12 inches from the O-horizon;

f. Within 12 inches of the O-horizon, soils with a chroma of 2 or less and values of 4 or higher in the matrix, and mottles with a chroma of 3 or higher; and

g. Within 12 from the O-horizon, soils with a matrix chroma of 3 and values of 4 or higher, with 10% or more low chroma mottles, as well as indicators of saturation, e.g., mottles, oxidized rhizospheres, concretions, nodules, within 6 inches of the soil surface.

The indicators of hydric soils were examined in the field by excavating a test borehole with a bucket auger. Data recorded at each test pit included textural class, Munsell hue/value/chroma (soil color), and other descriptive properties including: the presence of

roots; gravel/cobbles; other organic matter; anthropogenic activity; and odor, e.g., petroleum, hydrogen sulfide. Additional sources of soils information included online soils mapping data published by the Natural Resource Conservation Service (NRCS) on their Web Soil Survey http://websoilsurvey.nrcs.usda.gov.

Each soil horizon encountered was assigned a soil horizon designation along with the thickness of the horizon. For the purposes of this discussion, naturally occurring soils can consist of (with increasing depth) O, A; E; B; and C-horizons. The *O-horizon* is dominated by organic material, consisting of undecomposed or partially decomposed litter, such as leaves, needles, twigs, moss, and lichens. The *A-horizon* is a mineral horizon formed at the surface or below an O-horizon, in which all or much of the original rock structure has been obliterated. The A-horizon is usually the darkest layer in the profile and has more roots than underlying layers. Most natural A-horizons range in thickness from 2 to 12 inches, but some can be thicker.

The *E-horizon,* when present, is a leached mineral layer in which the main feature is loss of silicate clay, iron, aluminum, and is light in color (usually grayish-white). The *B-horizon* is a layer in which the dominant features are the obliteration of all or much of the original rock structure and is a horizon that exhibits significant weathering. Upland B-horizons have the colors (generally browns) of the iron minerals that weather out of the original parent material. Wetland B-horizons are usually grayer due to reduction processes. B-horizons seldom have time to develop in altered soils such as fill however. The *C-horizon* is a layer of soil that has been little affected by pedogenetic processes and is referred to as the "parent material". Plant roots can penetrate C-horizons, which provide an important growing medium. When the parent material develops as a consequence of an unnatural process, such as filling, the C-horizon usually lacks the depositional features characteristic of natural sedimentation.

Other Indicators of Wetland Hydrology

Other indicators of wetland hydrology include "groundwater, including the capillary fringe, within a major portion of the root zone"; and "observation of prolonged or frequent flowing or standing surface water (310 CMR 10.55(2)(c)(2). Examples that can be used as indirect evidence of pooled surface water include watermarks on tree stems and rock surfaces, water-stained leaves, or drainage patterns. Examples of soil saturation include the presence of free water in a soil borehole and saturated soils within 12 inches of the ground surface.

LITERATURE CITED

Reed, P. B. 1988. National List of Plant Species that Occur in Wetlands: Northeast. Biological Report 88 (26.1). May 1988.

Appendix A.4

MassDEP Wetland Data Sheets

Prepared by Carr Research Laboratory (CRL) September 2008

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: **Town of Acton** Prepared by: **Carr Research Lab., Inc.** Project location: **Stow & Martin Street** DEP File #: _____

Check all that apply:
- ☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
- ☑ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
- ☐ Method other than dominance test used (attach additional information)

Section I. Vegetation Observation Plot Number: **F35** Transect Number: **Upgradient** Date of Delineation: **September 2008**

Sample Layer and Plant Species	Scientific name	% Cover	% Dominance	Dominant Plant (yes or no)	Wetland Indicator Category*
Tree Layer					
White oak	*Quercus alba*	10%	100.0%	yes	FACU
Sapling Layer					
Black cherry	*Prunus serotina*	10%	100.0%	yes	FACU
Shrub Layer					
Red maple	*Acer rubrum*	40%	100.0%	yes	FAC*
Climbing Woody Vine					
none					
Ground Cover					
none					

Remarks: * An asterisk after common plant name indicates stunted growth; ** indicates extremely stunted growth

Morphological Adaptations: 0 **Description:** _____

* An asterisk after indicator status denotes wetlands plants: plants listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus Sphagnum; or plants listed as FAC, FAC+, FACW-, FACW, FACW+, or OBL.

Vegetation conclusion:

Number of dominant wetland indicator plants: 1 **Number of dominant non-wetland indicator plants: 2**

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? no

If vegetation alone is presumes adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent.

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? ☐ yes ☐ no

title/date: **Interim Soil Survey of Middlesex County - 1991 (Maps - 1989)**

map number: **Acton, Boxborough**

soil type mapped: **Walpole**

hydric soil inclusions: **Scarboro, Sudbury**

Are field observations consistent with soil survey? ☐ yes ☑ no

Remarks: Agricultural field

2. Soil Description

Horizon	Depth (inches)	Matrix Color	Mottles Color or Texture
Ap	0-15+		active plow layer sand/loam mix

Remarks: Active agricultural field with crops

3. Other:

Conclusion: Is soil hydric? ☐ yes ☑ no

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Drift Lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizoshperes:
- ☐ Water-stained leaves:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Other:

Vegetation and Hydrology Conclusion for Upgradient of F35

	yes	no
Number of wetland indicator plants >= number of non-wetland plants		X
Wetland hydrology present:		
hydric soils present		X
other indicators of hydrology present		X
Sample location is in a BVW		X

Submit this form with the Request for Determination of Applicability or Notice of Intent

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: **Town of Acton** Prepared by: **Carr Research Lab., Inc.** Project location: **Stow & Martin Street** DEP File #: _____

Check all that apply:
- ☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
- ☑ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
- ☐ Method other than dominance test used (attach additional information)

Section I. Vegetation Observation Plot Number: **F35** Transect Number: **Downgradient** Date of Delineation: **September 2008**

Sample Layer and Plant Species	Scientific name	% Cover	% Dominance	Dominant Plant (yes or no)	Wetland Indicator Category*
Tree Layer					
Red maple	*Acer rubrum*	30%	100.0%	yes	FAC*
Sapling Layer					
none					
Shrub Layer					
European buckthorn	*Rhamnus frangula*	30%	100.0%	yes	FAC*
Climbing Woody Vine					
none					
Ground Cover					
Cinnamon fern	*Osmunda cinnamomea*	20%	100.0%	yes	FACW*

Remarks: * An asterisk after common plant name indicates stunted growth; ** indicates extremely stunted growth

Morphological Adaptations: 0 **Description:** _____

* An asterisk after indicator status denotes wetlands plants: plants listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus Sphagnum; or plants listed as FAC, FAC+, FACW-, FACW, FACW+, or OBL.

Vegetation conclusion:

Number of dominant wetland indicator plants: 3 **Number of dominant non-wetland indicator plants: 0**

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? yes

If vegetation alone is presumes adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent.

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? ☐ yes ☐ no

title/date: **Interim Soil Survey of Middlesex County - 1991 (Maps - 1989)**

map number: **Acton, Boxborough**

soil type mapped: **Walpole**

hydric soil inclusions: **Scarboro, Sudbury**

Are field observations consistent with soil survey? ☑ yes ☐ no

Remarks:

2. Soil Description

Horizon	Depth (inches)	Matrix Color	Mottles Color or Texture
A	0-10	10YR3/2	topsoil
C	10-15"+	10YR4/3	> 10% 7.5YR5/8 mottles
			sandy flooplain soils

Remarks:

3. Other:

Conclusion: Is soil hydric? ☑ yes ☐ no

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☑ Water marks:
- ☐ Drift Lines:
- ☑ Sediment deposits:
- ☑ Drainage patterns in BVW:
- ☐ Oxidized rhizoshperes:
- ☐ Water-stained leaves:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Other:

Vegetation and Hydrology Conclusion for Downgradient of F35	**yes**	**no**
Number of wetland indicator plants >= number of non-wetland plants	X	
Wetland hydrology present:		
hydric soils present	X	
other indicators of hydrology present	X	
Sample location is in a BVW	X	

Submit this form with the Request for Determination of Applicability or Notice of Intent

APPENDIX B

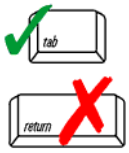
Stormwater Checklist for Stormwater Report

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

4/21/11

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.

APPENDIX C

Stormwater Report

O'Reilly, Talbot & Okun
[A S S O C I A T E S]
ENGINEERING
Environmental Safety Health Geotechnical

19 W. Main Street
Suite 205
Westborough, MA 01581
Tel 508 366 6409
Fax 508 366 9826
www.oto-env.com

April 21, 2011
File No: 0022–33–04

Prepared for:
Town of Acton
472 Main Street
Acton, MA 01702

Stormwater Report
Town of Acton
Caouette Property
2 Stow Street
Acton, Massachusetts

Prepared by:
O'Reilly, Talbot & Okun Associates, Inc.
19 West Main Street, Suite 205
Westborough, Massachusetts 01581

O'Reilly, Talbot & Okun [ASSOCIATES] ENGINEERING

TABLE OF CONTENTS

Page

REGISTERED PROFESSIONAL ENGINEER'S CERTIFICATION 1

1.0 INTRODUCTION 1

2.0 EXISTING CONDITIONS 1

2.1 Site Description.....1

4.2 SUMMARY OF REMEDIAL ACTIVITIES.....2

4.2.1 Areas Requiring Remedaiotn 2

3.0 PROJECT TYPE.....2

4.0 LOW IMPACT DEVELOPMENT (LID) MEASURES 3

6.0 STORMWATER MANAGEMENT STANDARDS.....3

4.1 Standard No. 1 No New Untreated Discharges.....4
4.2 Standard No. 2 (Peak Rate Control and Flood Prevention) 4
4.2 Stormwater Management Standard No. 3 (Recharge to Groundwater) 4
4.3 Stormwater Management Standard No. 4 (Water Quality).....5
4.4 Stormwater Management Standard No. 5 (Land Uses with Higher Potential Pollutant Loads (LUHPPLs) 5
4.5 Stormwater Management Standard No. 6 (Critical Areas).....5
4.6 Stormwater Management Standard No. 7 (Redevelopment) 5
4.7 Stormwater Management Standard No. 8.....6
4.9 Stormwater Management Standard No. 9 (Operation and Maintenance Plan) ..6
4.10 Stormwater Management Standard No. 10 (Prohibition of Illicit Discharges)...6

FIGURES

Figure 1–1. Site Locus Map.
Figure 3–1. NRCS Soils Map.

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 needed), 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 _____ 4/21/11
Signature and Date

1.0 INTRODUCTION

This Stormwater Report was prepared on behalf of the Town of Acton by O'Reilly, Talbot & Okun Associates, Inc. (OTO) in accordance with applicable regulations cited under the Massachusetts Wetlands Protection Act M.G.L. Ch. 131, §40 (the "Act") and its implementing regulations 310 CMR 10.00 *et seq*. The report was developed in support of activities associated with the remediation of soils impacted by hazardous compounds and the filing of a Notice of Intent (NOI) with the Town of Acton Conservation Commission (the "ConCom").

The Stormwater Report must be submitted with the NOI as a means of documenting compliance with the Stormwater Management Standards. Moreover, the Stormwater Report must include:

1. The Stormwater Checklist completed and stamped by a Registered Professional Engineer that certifies that the Stormwater Report;
2. Applicant/Project Name
3. Project Address
4. Name of Firm and Registered Professional Engineer that prepared the Report;
5. Long-term Pollution Prevention Plan required by Standards 4-6;
6. Construction Period Pollution Prevention Plan required by Standards 4-6; and
7. Operation and Maintenance Plan required by Standard 9.

This Stormwater Report is organized such that sections are provided that describe: (1) Existing Conditions; (2) The Project Type; (3) Low Impact Development (LID) Measures; and (4) the ten Stormwater Management Standards. The following section presents a summary of existing site conditions.

2.0 EXISTING CONDITIONS

2.1 Site Description

Located at 2 Stow Street in Acton, Massachusetts, the Stow Street parcel of the former Caouette property covers approximately 7.5 acres of undeveloped farmland (Figure 1–1). Adjacent land uses are principally residential, with a smaller agricultural component.

The disposal site (the "site") is situated within a mesic, deciduous forested stand bordered to the east by a former Massachusetts Bay Transit Authority (MBTA) railway easement, in addition to an impounded reach of the Fort Pond Brook, portions of which are locally referred to as Mill Pond.

4.2 Summary of Remedial Activities

Based upon a review of historical information conducted in March of 2010 as part of a Phase I Environmental Site Assessment (OTO, 2010), it was determined that the site supported various light industrial and manufacturing facilities during a period dating from 1892 to 1917. Specifically, the site previously supported the Morocco Factory (leather); an unidentified ice cream pail manufacturer; and the Moore & Burgess Company (a fabric strip manufacturer).

The possibility that historical uses of the site had impacted soils and groundwater was assessed with a sub-surface exploration within the vicinity of the former on–site factory buildings. The results of the assessment indicated that the metalloid arsenic is present in surface soils at concentrations greater than 40 mg/kg, which is above applicable screening benchmarks. In addition to arsenic, other potentially hazardous compounds detected in soils above applicable screening levels include the metal lead and a group of organic compounds known as polycyclic aromatic hydrocarbons (PAHs).

4.2.1 Areas Requiring Remediation

A total of four areas requiring remediation have been identified including the former Morocco Factory (lead and PAHs) and three areas on the Site that are known to be impacted with arsenic. The total area of soil removal equals 8,287 square feet (ft^2) (614 cubic yards [yd^3]), which includes impacts to upland and wetland resource areas. The areas of soil excavation are depicted on Figure 1–2 and impacts to wetland resource areas are discussed in Appendix A. Photographs of the areas requiring remediation are provided in Appendix A.1.

At this time, it is proposed that the excavated material be disposed of offsite at Environmental Soil Management Companies (ESMI), which is a soil recycling facility located in Loudon, New Hampshire. Acceptance of the PAH, lead, and arsenic impacted soils from the Site would be contingent upon additional testing to ensure that the soil is not a hazardous waste and meets the criteria of the facility.

3.0 PROJECT TYPE

The proposed soil remediation project meets the definition of a Redevelopment Project (Standard 7), which is defined to include:

1. Maintenance and improvement of existing roadways, including widening less than a single lane, adding shoulders, correcting substandard intersections, improving existing drainage systems, and repaving;

2. Development rehabilitation, expansion and phased projects on previously developed sites, provided the redevelopment results in no net increase in impervious area; and

3. Remedial projects specifically designed to provide improved stormwater management, such as projects to separate storm drains and sanitary sewers, and stormwater retrofit projects.

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 stormwater best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. As set forth in Standard 7, the phrase "to the maximum extent practicable" means that:

1. Proponents of redevelopment projects have made all reasonable efforts to meet the requirements of Standards 2 and 3 and the pretreatment and structural stormwater best management practices requirements of Standards 4, 5, and 6 and to bring existing outfalls into compliance with Standard 1;

2. Proponents have made a complete evaluation of possible stormwater management measures, including environmentally sensitive site design that minimizes land disturbance and impervious surfaces, low impact development techniques and structural stormwater BMPs; and

3. If not in full compliance with Standard 1 for existing outfalls, Standards 2 and 3 and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5, and 6, they are implementing the highest practicable level of stormwater management.

A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

4.0 LOW IMPACT DEVELOPMENT (LID) MEASURES

The Wetlands Regulations, 310 CMR 10.04, and the Water Quality Certification Regulations, 314 CMR 9.02, define low impact development (LID) techniques to include innovative stormwater management systems that are modeled after natural hydrologic features.

The proposed remediation project will not result in any new impervious area, nor will there be a need to create a stormwater management system. Furthermore, although clearing will need to be conducted, the area will be re–vegetated as discussed in Appendix A.

6.0 STORMWATER MANAGEMENT STANDARDS

The ten Stormwater Management Standards address water quality and aspects of water quantity such as flooding; low base flow; and recharge by establishing standards that require the implementation of a wide variety of stormwater management strategies. As discussed by the MassDEP, these strategies include environmentally sensitive site design and LID

techniques to minimize impervious surface and land disturbance; source control and pollution prevention; structural BMPs; construction period erosion and sedimentation control; and the long-term operation and maintenance of stormwater management systems. Each of the ten standards are discussed in the following sections.

4.1 Standard No. 1 No New Untreated Discharges

This standard allows the direct discharge of stormwater to waters and wetlands provided the discharge is adequately treated. The term "treated" refers to the implementation of stormwater management systems that are specifically designed to achieve sediment and contaminant removal rates that adequately protect groundwater, surface waters and wetlands. The level of treatment required by the other standards is based on whether the discharge impacts a critical area, is from a land use with a higher potential pollutant load, or to soils with a rapid infiltration rate.

There are no new untreated discharges proposed as part of this remediation project and there will not be any modification of existing outfalls.

4.2 Standard No. 2 (Peak Rate Control and Flood Prevention)

Under this standard, stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. Typical documentation includes peak rate calculations for pre- and post-development conditions, and calculations supporting design of structures that will control peak discharge rates.

Although slight differences in runoff might be attributed to differences in vegetation; that is, low stature grasses versus trees and shrubs, given the absence of new impervious area, it is unlikely that either runoff curves or peak discharge rates will be markedly different in a comparison of pre-and post-development scenarios.

4.2 Stormwater Management Standard No. 3 (Recharge to Groundwater)

Loss of annual recharge to ground water shall be eliminated or minimized through the use of infiltration measures, including environmentally sensitive site design, low impact development techniques, 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 the pre-development conditions based on soil type.

In that no new impervious area will be created, and no infiltration basins are proposed, this stormwater management standard does not apply.

4.3 Stormwater Management Standard No. 4 (Water Quality)

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:

1. Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;

2. Structural stormwater best management practices are sized to capture the required water quality volume as determined in accordance with the Massachusetts Stormwater Handbook; and;

3. Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.

No stormwater management system is required at this site.

4.4 Stormwater Management Standard No. 5 (Land Uses with Higher Potential Pollutant Loads (LUHPPLs)

Land uses with higher potential pollutant load include confined disposal facilities as defined in 314 CMR 9.02 and disposal sites as defined in M.G.L. c. 21E and 310 CMR 40.000. The site has been identified as a disposal site.

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.

4.5 Stormwater Management Standard No. 6 (Critical Areas)

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

No new stormwater discharge is proposed, therefore, this standard does not apply.

4.6 Stormwater Management Standard No. 7 (Redevelopment)

As previously defined, 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 stormwater best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to

the maximum extent practicable. This Stormwater Report discusses how the proposed remediation project will meet those standards. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

4.7 Stormwater Management Standard No. 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.

4.9 Stormwater Management Standard No. 9 (Operation and Maintenance Plan)

No stormwater management system is proposed. Therefore, this standard does not apply.

4.10 Stormwater Management Standard No. 10 (Prohibition of Illicit Discharges)

No illicit discharges will result from this proposed project. Therefore, this standard does not apply.