

Sediment Removal and Restoration Plan

North Wetland, Worcester Regional Airport

PREPARED FOR



Massachusetts Port Authority
One Harborside Drive—Suite 200F
East Boston, MA 02128
617.568.5000

PREPARED BY



101 Walnut Street
PO Box 9151
Watertown, MA 02471
617.924.1770

June 26, 2018
Revised August 22, 2018



Massachusetts Port Authority
One Harborside Drive, Suite 200S
East Boston, MA 02128-2090
Telephone (617) 568-5950
www.massport.com

August 27, 2018

Leicester Conservation Commission
3 Washburn Square
Leicester, MA 01524

**Re: Wetland Restoration Plan
Worcester Regional Airport**

Dear Leicester Conservation Commissioners:

The enclosed Notice of Intent (NOI) is being submitted by Massport to conduct sediment removal within vegetated wetlands to the north of the Worcester Regional Airport airfield. During construction of the CAT III ILS/Taxiway project, significant rainfall events resulted in the deposition of sediment to wetland areas located to the north and south of the project area. These events and the associated impacts were documented and reported to the MassDEP and the Leicester Conservation Commission at the time they occurred.

As directed by the MassDEP, Massport submitted a Wetland Restoration Plan, dated May 1, 2018, which was also submitted to the Leicester Conservation Commission. The Plan, which is included in this NOI submission, details the proposed restoration of the North and South Wetland Areas. Since prior MassDEP approval was provided for sediment removal within the South Wetland Area, this work was completed as of May 3, 2018.

As stated above, this NOI is for restoration of the North Wetland Area. The deposition of sediment in this area occurred during a heavy rain event on Monday evening, January 22, 2018, which continued through Tuesday afternoon, January 23rd. Stormwater and groundwater flow from a discharge pipe below the Taxiway Wall, and from multiple points across the riprap slope north of the wall, carried sediment that was deposited in the North Wetland Area.

Following the rain event, VHB wetland scientists field-delineated the limits of sedimentation within the North Wetland Area with orange flags and located the flags with a GeoXH Trimble unit. As documented in the February 8, 2018 report, the majority of sediment was contained by the erosion controls installed at the base of the slope. Observed sediment deposition within the wetland was a maximum of 1 inch to 2 inches in depth and covered approximately 1,152 square feet (sf).

The Wetland Restoration Plan included in this NOI describes the proposed wetland areas that were affected and outlines the approach to removing the sediment. The attached photo log shows the areas of sediment deposition in the North Wetland Area after the event, and the wetland area as it appears today. Also attached is an updated Summary Schedule for the project which provides the status of the stabilization of the construction site and the schedule for conducting ongoing monitoring of the restored wetland areas.

We respectfully request that the Commission schedule this Notice of Intent to be heard at the next available hearing date. A filing fee check in the amount of \$262.50, payable to the Town of Leicester, is attached.

Leicester Conservation Commission

August 27, 2018

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Please contact me at (617) 568-3552 or via e-mail (jstolecki@massport.com) if you have any questions about this filing.

Sincerely,
Massachusetts Port Authority



James Stolecki, P.E., LSP
Senior Environmental Project Manager

Enclosures

- Sediment Removal Notice of Intent

Cc: A. Davis, S. Dalzell, R. Leger/Massport
MassDEP—Central Regional Office
Jonathan Gervais, Worcester DPW&P
M. Avery /VHB



Notice of Intent Forms

-
- WPA Form 3
 - Wetland Fee Transmittal Form
 - Copy of Filing Fee Checks

□ **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 #:
eDEP Transaction #:1026685
City/Town:LEICESTER

A.General Information

1. Project Location:

a. Street Address	WORCESTER REGIONAL AIRPORT		
b. City/Town	LEICESTER	c. Zip Code	01524
d. Latitude	42.26683N	e. Longitude	71.87998W
f. Map/Plat #	5	g.Parcel/Lot #	A6.7

2. Applicant:

☐ Individual ☒ Organization

a. First Name	JAMES	b.Last Name	STOLECKI
c. Organization	MASSACHUSETTS PORT AUTHORITY		
d. Mailing Address	ONE HARBORSIDE DRIVE, 200S		
e. City/Town	EAST BOSTON	f. State	MA
g. Zip Code	02128		
h. Phone Number	617-568-3552	i. Fax	
j. Email	jstolecki@massport.com		

3.Property Owner:

☐ more than one owner

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

4.Representative:

a. First Name	MEREDITH	b. Last Name	AVERY
c. Organization	VHB		
d. Mailing Address	101 WALNUT STREET, P.O. BOX 9151		
e. City/Town	WATERTOWN	f. State	MA
g. Zip Code	02471		
h.Phone Number	617-924-1770	i.Fax	
j.Email	mavery@vhb.com		

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

a.Total Fee Paid	500.00	b.State Fee Paid	237.50	c.City/Town Fee Paid	262.50
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6.General Project Description:

7a.Project Type:

- | | |
|---|--|
| 1. <input type="checkbox"/> Single Family Home | 2. <input type="checkbox"/> Residential Subdivision |
| 3. <input type="checkbox"/> Limited Project Driveway Crossing | 4. <input type="checkbox"/> Commercial/Industrial |
| 5. <input type="checkbox"/> Dock/Pier | 6. <input type="checkbox"/> Utilities |
| 7. <input type="checkbox"/> Coastal Engineering Structure | 8. <input type="checkbox"/> Agriculture (eg., cranberries, forestry) |
| 9. <input checked="" type="checkbox"/> Transportation | 10. <input type="checkbox"/> 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)?

Massachusetts Department of Environmental Protection
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1. ☐ Yes ☒ No If yes, describe which limited project applies to this project:
2. Limited Project

8. Property recorded at the Registry of Deeds for:

a. County:	b. Certificate:	c. Book:	d. Page:
WORCESTER		45993	1

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

1. Buffer Zone & Resource Area Impacts (temporary & permanent):

☐ This is a Buffer Zone only project - 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)

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
---------------	-----------------------------	-------------------------------

a. <input type="checkbox"/> Bank	1. linear feet	2. linear feet
b. <input checked="" type="checkbox"/> Bordering Vegetated Wetland	1,152 1. square feet	2. square feet
c. <input type="checkbox"/> Land under Waterbodies and Waterways	1. Square feet	2. square feet
	3. cubic yards dredged	
d. <input type="checkbox"/> Bordering Land Subject to Flooding	1. square feet	2. square feet
	3. cubic feet of flood storage lost	4. cubic feet replaced
e. <input type="checkbox"/> 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 any)
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

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

City/Town:LEICESTER

☐ Yes ☐ No

1. square feet

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□ **Massachusetts Department of Environmental Protection**

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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 of Endangered Species program (NHESP)?

a. ☐ Yes ☒ No

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

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

b. Date of map:FROM MAP VIEWER

If yes, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18)...

c. Submit Supplemental Information for Endangered Species Review * (Check boxes as they apply)

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 wetland 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/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/mass-endangered-species-act-mesa/mesa-fee-schedule.html>)

Make check payable to "Natural Heritage & Endangered Species Fund" 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/eea/agencies/dfg/dfw/laws-regulations/cmr/321-cmr-1000-massachusetts-endangered-species-act.html#10.14>; 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 Number

b. Date submitted to NHESP

□ **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 #:

eDEP Transaction #:1026685

City/Town:LEICESTER

3. ☐ Separate MESA review completed.

Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review...

2. For coastal projects only, is any portion of the proposed project located below the mean high waterline 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

If yes, it 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)?

a. ☐ Yes ☒ No

If yes, provide name of ACEC (see instructions to WPA Form 3 or
DEP Website for ACEC locations). **Note:** electronic filers click on
Website.

b. ACEC Name

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, Explain why the project is exempt:

1. ☐ Single Family Home

☐ **Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands
WPA Form 3 - Notice of Intent
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Provided by MassDEP:
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City/Town:LEICESTER

- ☐ 1. []
- ☐ 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 by regular mail delivery.

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.
☐

a. Plan Title: **b. Plan Prepared By:** **c. Plan Signed/Stamped By:** **c. Revised Final Date:** **e. Scale:**

WORCESTER
REGIONAL AIRPORT
CAT-III ILS AND VHB
TAXIWAY WETLAND
RESTORATION PLAN

May 1, 2018

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.
☐

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 #:

eDEP Transaction #:1026685

City/Town:LEICESTER

E. Fees

- 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:

336171

2. Municipal Check Number

2. Municipal Check Number

336170

4. State Check Number

4. State Check Number

6. Payer name on check: First Name

3. Check date 6/22/18

3. Check date

5. Check date 6/22/18

5. Check date

7. Payer 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.

James Stolecki

1. Signature of Applicant

8/24/2018

2. Date

3. Signature of Property Owner(if different)

4. Date

5. Signature of Representative (if any)

6. Date _____

For Conservation Commission:

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

For MassDEP:

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

Other:

If the applicant has checked the "yes" box in Section C, Items 1-3, 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
WPA Form 3 - Notice of Wetland Fee Transmittal
Form

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

Provided by MassDEP:
MassDEP File #:
eDEP Transaction #:1026685
City/Town:LEICESTER

A. Applicant Information

1. Applicant:

a. First Name	JAMES	b. Last Name	STOLECKI
c. Organization	MASSACHUSETTS PORT AUTHORITY		
d. Mailing Address	ONE HARBORSIDE DRIVE, 200S		
e. City/Town	EAST BOSTON	f. State	MA
		g. Zip Code	02128
h. Phone Number	6175683552	i. Fax	
		j. Email	jstolecki@massport.com

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
	j. Email

3. Project Location:

a. Street Address	WORCESTER REGIONAL AIRPORT	b. City/Town	LEICESTER
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Are you exempted from Fee? ☐ (YOU HAVE SELECTED 'NO')

Note: Fee will be exempted if you are one of the following:

- City/Town/County/District
- Municipal Housing Authority
- Indian Tribe Housing Authority
- MBTA

State agencies are only exempt if the fee is less than \$100

B. Fees

Activity Type	Activity Number	Activity Fee	RF Multiplier	Sub Total
J.) ANY OTHER ACTIVITY NOT IN CATEGORY 1,3,4,5 OR 6;	1	500.00		500.00
		City/Town share of filing fee	State share of filing fee	Total Project Fee
		\$262.50	\$237.50	\$500.00

VANASSE HANGEN BRUSTLIN, INC.

101 WALNUT STREET • PO BOX 9151
WATERTOWN, MASSACHUSETTS 02471

CITIZENS BANK
MASSACHUSETTS
5-7017/2110

336171

CHECK DATE

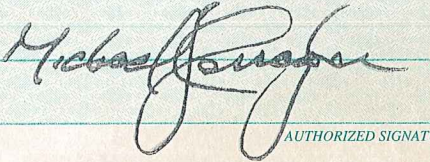
June 22, 2018

Two Hundred Sixty Two and 50/100

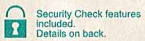
AMOUNT

\$262.50

Town of Leicester
3 Washburn Square
Leicester, MA 01524


AUTHORIZED SIGNATURE

⑈336171⑈ ⑆211070175⑆ 1130161371⑈



VANASSE HANGEN BRUSTLIN, INC.

101 WALNUT STREET • PO BOX 9151
WATERTOWN, MASSACHUSETTS 02471

CITIZENS BANK
MASSACHUSETTS
5-7017/2110

336170

CHECK DATE

June 22, 2018

Two Hundred Thirty Seven and 50/100

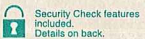
AMOUNT

\$237.50

Commonwealth of Massachusetts
DEP-Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211


AUTHORIZED SIGNATURE

⑈336170⑈ ⑆211070175⑆ 1130161371⑈



Sediment Removal and Restoration Plan

North Wetland, Worcester Regional Airport

PREPARED FOR



Massachusetts Port Authority
One Harborside Drive—Suite 200F
East Boston, MA 02128
617.568.5000

PREPARED BY



101 Walnut Street
PO Box 9151
Watertown, MA 02471
617.924.1770

June 26, 2018
Revised August 22, 2018



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1

Introduction

This Notice of Intent (NOI) is filed pursuant to the Massachusetts Wetlands Protection Act (MWPA, M.G.L. c. 131 § 40) and its implementing regulations (310 CMR 10.00). As a state agency, Massport is not subject to the Town of Leicester Wetland Protection Bylaw; however, the project has been designed to comply where possible.

The Massachusetts Port Authority (Massport) is undertaking sediment removal activities at the Worcester Regional Airport (ORH) to remove siltation caused by a January 2018 rainstorm event. The work will take place within a wetland defined by the MWPA as a Bordering Vegetated Wetland. The proposed work will consist of sediment removal within an area of approximately 1,152 square feet as described in the attached Wetland Restoration Plan (Appendix A). Photographs of the site conditions are provided in Appendix B.



List of Appendices

Appendix A: Wetland Restoration Plan, February, 2018 Revised August 22, 2018

Appendix B: Photo Log

Appendix C: Abutter Notification



Appendix A

Wetland Restoration Plan





1. Introduction

This Wetland Restoration Plan is a comprehensive plan to address the impacts associated with the stormwater-related discharges of sediment to wetland areas during construction of the Worcester Regional Airport CAT III ILS and Taxiway Project. The Plan details the following proposed actions:

- Delineating the wetland impacts associated with discharges of sediment from the project;
- Removal of sediment from the wetlands;
- Monitor and document the completion of the sediment removal;
- Establish long-term stabilization of construction areas;
- Maintenance of erosion and sediment controls until construction areas have been stabilized; and
- Monitor and respond to any re-suspension of sediment from the affected resource areas that may act as an ongoing source of turbidity to the reservoir.

In addition to the above proposed actions, the Wetland Restoration Plan provides a schedule for completing the actions and submitting documentation, as well as identifying the parties responsible for implementation and oversight of the Plan.

2. Sediment Accumulation in Wetlands

Two wetlands have been impacted by sediment discharge from the project site (Figure 1); the large wetland located north of the airfield and west of Lynde Brook; the wetland located south of the airfield and west of Lynde Brook. The following descriptions of these impacted wetlands are based on information previously submitted to DEP, and the extent of sediment accumulation in each wetland was verified by VHB wetland scientists on April 13, 2018.

North Wetland

The North Wetland receives drainage from the airfield through overland flow, discharges from outfalls connected to catch basins, and from the Taxiway MSE Wall underdrain. During construction, it received direct stormwater discharge from the work area. At the completion of construction, stormwater from the north airfield will be collected by a new drainage system which includes a subsurface infiltration system. The infiltration system overflows through a 42-inch outlet structure which will discharge to a swale that conveys the stormwater to the North Wetland area.



To control and confine discharges from the Taxiway MSE Wall and surface drainage system, erosion controls (staked straw wattles, hay bales and silt fence) were installed in two concentric semicircles extending out from the toe of slope through the southern part of this wetland. Several rows of erosion and sedimentation controls (staked straw wattles, hay bales, and silt fence) have been installed along the slope and at the toe of the slope below the Wall.

Prior Discharges

Sediment was released to the North Wetland in the fall of 2016, as documented in VHB's report issued to DEP on December 9, 2016. This report documented measurable silt accumulated in the portion of the North Wetland that is within the perimeter erosion controls, with an extent of 0.45 acres (Area A on Figure 2), and that traces of silt were observed within a larger 8.54-acre area extending to the man-made channel and beaver dam. On March 28, 2017 JF White provided a restoration plan for this area. Following approval by DEP, JF White removed the sediment within Area A.

2018 Discharge

Worcester Airport experienced a heavy rain event on Monday evening, January 22nd, which continued through Tuesday afternoon, January 23rd. According to Weather Underground data, Worcester received 1.07 inches of rain during the storm. Stormwater and groundwater discharged from the discharge pipe below the Taxiway MSE Wall, and from multiple points across the riprap slope north of the Taxiway MSE Wall, and ponded in the North Wetland. DEP conducted a site visit to review the discharge on Thursday, January 25, and requested that Massport demarcate the limits of sedimentation within wetland resource areas. On February 23, 2018 Massport submitted a report and restoration plan for this area which was prepared by VHB and dated February 9, 2018.

Following the rain event, VHB wetland scientists field-delineated the limits of sedimentation within the North Wetland with orange flags and located the flags with a GeoXH Trimble unit. As documented in the February 8, 2018 report, the majority of sediment released from the slope was contained by the silt fence and erosion controls installed at the base of the slope. One area of high sedimentation, shown as Area SDA-3, on the attached Figure 2 was located within the wetland. Observed sedimentation was a maximum of 1 inch to 2 inches in depth and covered approximately 1,152 square feet (sf). An extremely thin and unmeasurable veneer of fine sediment was present on vegetation in low points within the erosion controls; however, the veneer was on plant matter only and did not accumulate to a measurable depth. VHB walked the BVW within the perimeter erosion controls and north of the controls. VHB did not observe additional deposited sediment within the herbaceous wetland north of the erosion controls.

On April 13, 2018 VHB wetland scientists revised the North Wetland to confirm the extent of wetland impacts (see Figure 2a). Within Area A (the area enclosed by the outermost sedimentation controls), we identified two zones.

Zone A extends from the toe of the slope to a sedimentation control (straw wattle) defined by a yellow dashed line, see Figure 2a. This area is densely vegetated with grasses and sedges, and with cattails in areas with deeper water. There are depressions full of water scattered across Zone A. VHB saw no silt



deposited on the vegetation within Zone A. Most of the water-filled depressions had some silt deposition consisting of a thin layer (0.5 inches thick or less) of a loose floccose sediment. This sediment disperses in water if disturbed. SA-4 had deposits of silt 1 to 2-inches deep, along toe of the slope on its southern boundary. The sediment along the toe of the slope consisted of larger particles that settled out of suspension. Further out in areas SA-4, and in all of area SA-5, the sediment consists of loose floccose sediment present in depressions. This material presumably moved into these areas from the previously described SDA-3 area after being resuspended subsequent rain event. The water above the silt was clear, unless the sediment was disturbed. VHB noted algal and likely bacterial growth on decaying grass/sedge leaves in the water pockets. The area of sediment deposition in Zone A is not continuous but consists of patches where there are water-filled depressions. The area of sediment deposition in Areas SA-4 and SA-5, based on GPS, is 2,578 sf, with over half of this area containing only the loose floccose sediment.

Zone B is between the straw wattles and the outer silt fence. One area, Area SA-6, close to the toe of slope and east of Area SA-5, had water-filled depressions with 0.25-0.5 inches of a floccose silt deposit. The area impacted (based on GPS) is 274 sf. VHB did not observe any other silt in Zone B.

Zone C is the larger wetland extending north to the man-made channel and the beaver dam. In 2017, beaver moved into this area and have reconstructed the old beaver dam, raising water levels so that much of the eastern area of this wetland is inundated and the eastern half of the man-made channel is not visible. VHB walked much of the wetland within Zone C and observed no silt or sediment on the vegetation or in wet depressions.

North Wetland Summary

As demonstrated by field observation and shown in Table 1 below, a total of 2,852 sf of the North Wetland, confined to Area A (2018 Zone A, B), have visible accumulations of silt. Much of this silt is a thin (0.5-inches or less) floccose material, likely bound to the flocculant that was applied to this area. Other areas are measurable accumulation of fine silt particles 1-2 inches in depth. There are no areas within the larger Area B where trace or measurable accumulations of silt were observed.

Table 1 Sediment Accumulation, North Wetland

	2017	2018 (February)	2018 (April)
Area A (Zone A, B)	0.45 ac ¹	1,152 sf ²	2,852 sf

1 Remediated by JF White

2 Included in April 2018 area

South Wetland

The South Wetland is a forested wetland south of the airfield (see Figure 3). This wetland has two sections: an upper terrace mid-slope, and a large wetland at the toe of the slope. The wetland borders an intermittent stream that flows into Lynde Brook through a small culvert under the raised access road that extends from Sylvester Street north to the outlet from the Earle Ridge discharge structure. The South Wetland is not connected to the Earle Ridge discharge and does not receive stormwater directly from the



project area. As documented in a memo prepared by VHB, dated November 22, 2017 and submitted to the DEP via email on December 1, 2017, the South Wetland was affected by stormwater runoff on October 25-26, 2017 when a 4.8-inch rainfall event caused water to pond above the Earle Ridge Discharge Structure. Water overtopped the ridge and eroded the forested slope below the ridge. Soils eroded from the slope were deposited in the wetland. A second rain event on October 29-30, with 3.34 inches of rain, caused further overtopping and erosion.

VHB wetland scientists on November 6, 2017 evaluated the extent of the sediment deposits and determined that 6,173 sf of BVW had been impacted by eroded sediment deposition, with sediment accumulations to 12 inches. DEP approved manual removal of sediment in this location. On December 18, 2017, JF White's subcontractor, RECON, installed erosion controls and began to remove sediment. This effort was halted by winter conditions including frozen ground and snow.

On April 13, 2018 VHB wetland scientists re-evaluated the current extent of sediment deposits (see Figure 4) and found a small vegetated wetland on a terrace mid-slope. This wetland is vegetated with ferns and grasses, and most of the wetland does not have sediment deposit. There is one small pile of sediment (less than 1 square yard) with up to 3 inches of accumulation. A GPS point was taken to locate this area (Area SA-3). A stream channel extends from this wetland down the slope into the larger forested wetland. The lower wetland has two remaining patches of visible, measurable sediment deposits that are 1 to 4 inches in depth. These areas were located using GPS and identified as Area SA1-1 and SA2-1. Area SA1-1 measures 563 sf, and Area SA2-1 measures 1,895 sf. Within Area SA2-1, there is a patch of granular sand/gravel material; all other areas contain sediment deposits consisting of finer silty sand. The lower channel of the stream, within Area SA-1, has patches of sediment 2-4 inches deep along the banks. Water in the lower channel is cloudy and appears to have iron-fixing bacteria present.

3. Wetland Restoration Plan

Wetland restoration is proposed in Area A in the North Wetland. The objective of the restoration in the North Wetland is to remove all measurable sediment. Restoration in the South Wetland previously authorized by DEP was completed May 3, 2018.

North Wetland Area A

Removal of the sediment deposition within the North Wetland Area A will be done consistent with JF White's previously approved restoration plan for the area north of the Taxiway MSE Wall. All work will be done under the supervision of a Wetland Scientist. The Wetland Scientist will identify areas where sediment is to be removed and will verify that sediment has been removed.

Sediment will be removed by a vacuum truck or by hand. The haul road at the top of the Taxiway MSE Wall can be used to stage a vacuum truck and extend the hose to collect the sediment.

No sediment removal is proposed within portions of Zone A and Zone B where the sediment consists of a loose thin floccuose material. This material is not possible to remove by hand, and will be difficult or impossible to remove by vacuum truck. Any removal will result in substantial damage to wetland plants.



South Wetland

As approved by DEP, the remaining sediment was removed using hand tools only, and the disturbed areas were stabilized with existing leaf debris. No plantings were proposed in this area, as the forested wetland does not have a dense herbaceous layer of wetland graminoids, therefore making seeding incompatible with the existing wetland community.

4. Stabilization of Areas Disturbed by Construction

The Worcester Regional Airport CAT-III ILS and Taxiway Project is nearing completion of construction. Several areas within the project limits do not have full vegetative cover as of the date of this report:

- Haul road, starting at the east end back to the security apron;
- Slope above north side 42" Flared End-Dissipation Basin/Level Spreader;
- ALSF area (west of Mulberry Street), including access roads to light towers, certain slopes and roadside shoulders.

At the completion of active construction in each area, these areas will be finish-graded to a smooth surface, topsoiled as needed and hydroseeded with the approved upland seed mix and tackifier. The Haul Road will be covered with loam and then hydroseeded.

5. Maintenance and Removal of Erosion and Sedimentation Controls

Massport will maintain the perimeter erosion controls within each subwatershed of the construction area until upgradient areas within that watershed are stabilized with a vegetative cover. Stabilization is defined as 75 percent cover with grass species, as determined by a Wetland Scientist. The subwatersheds include:

- North side of the airfield;
- Glide Slope MSE wall and south side of the airfield; and
- ALSF light system, west of Mulberry Street.

Internal erosion controls within the construction site may be removed when upgradient areas are seeded, at the direction of Massport, and do not require approval by DEP or the Leicester Conservation Commission. In some locations, early removal of straw bales is needed in order to establish grass. When all upgradient areas are stabilized, Massport will initiate the removal of perimeter controls and notify DEP and Leicester Conservation Commission when all controls have been removed. All silt fence, filter bags and sandbags will be removed from the site. Straw wattles and straw bales may be broken and spread on-site if it is not feasible to remove them.

6. Post-Construction Monitoring

Post-construction monitoring will include two elements:

- Monitoring and documenting the completion and success of the wetland restoration; and
- Monitoring, preventing and responding to any discharge of sediment from the affected resource areas that may act as an ongoing source of turbidity to the reservoir in the long term.

Restoration Area Monitoring

Massport will monitor the restoration areas in the North Wetland and South Wetland on the following schedule:

- Weekly inspections by a Wetland Scientist for the first four weeks following sediment removal; and
- Monthly inspections by a Wetland Scientist for the completion of the 2018 growing season (through October 30, 2018).

Information collected at each monitoring event will include:

- Presence and depth of any remaining sediment;
- Plant species status in areas of sediment removal;
 - Species present
 - Percent cover
 - Established from seed mix or natural regrowth
- Representative photographs; and
- Whether additional remedial measures are warranted.

Massport will prepare and submit a report to DEP following each weekly and monthly monitoring event. A summary report will be prepared and submitted to DEP by November 15, 2018 that contains:

- Dates and photographs documenting sediment removal at each location;
- Dates of inspections;
- Representative photographs;
- Assessment of restoration success, including success in removing sediment, stabilizing residual silt, and re-establishing wetland vegetation; and
- Any additional remedial measures proposed by Massport.



Turbidity Monitoring

As required by DEP, this element of the monitoring program is intended to identify any discharges of sediment from the affected resource areas that may act as an ongoing source of turbidity to the reservoir in the long term. As noted previously in this Plan, Massport does not anticipate that there are any ongoing sources of turbidity. Nonetheless, Massport will continue to monitor turbidity for a six-month period starting in May, 2018 and has prepared this plan to monitor, respond, and prevent continuing discharges of sediment from the affected wetlands.

Massport will continue to monitor turbidity at the two discharge points; from the North Wetland (Point 4, Lynde Brook tributary) and the South Wetland (Point 12, culvert under the access road) during all storm events greater than 1.0 inches in 24 hours. Monitoring will be done in accordance with the current turbidity monitoring plan.

If turbidity levels exceed 10 NTUs, Massport will inspect the contributory area and determine if the source of the turbidity is the affected North or South Wetland, and will identify potential remedial actions. Massport will continue to distribute the turbidity monitoring logs to the DEP, Leicester Conservation Commission and the Worcester Water Department.

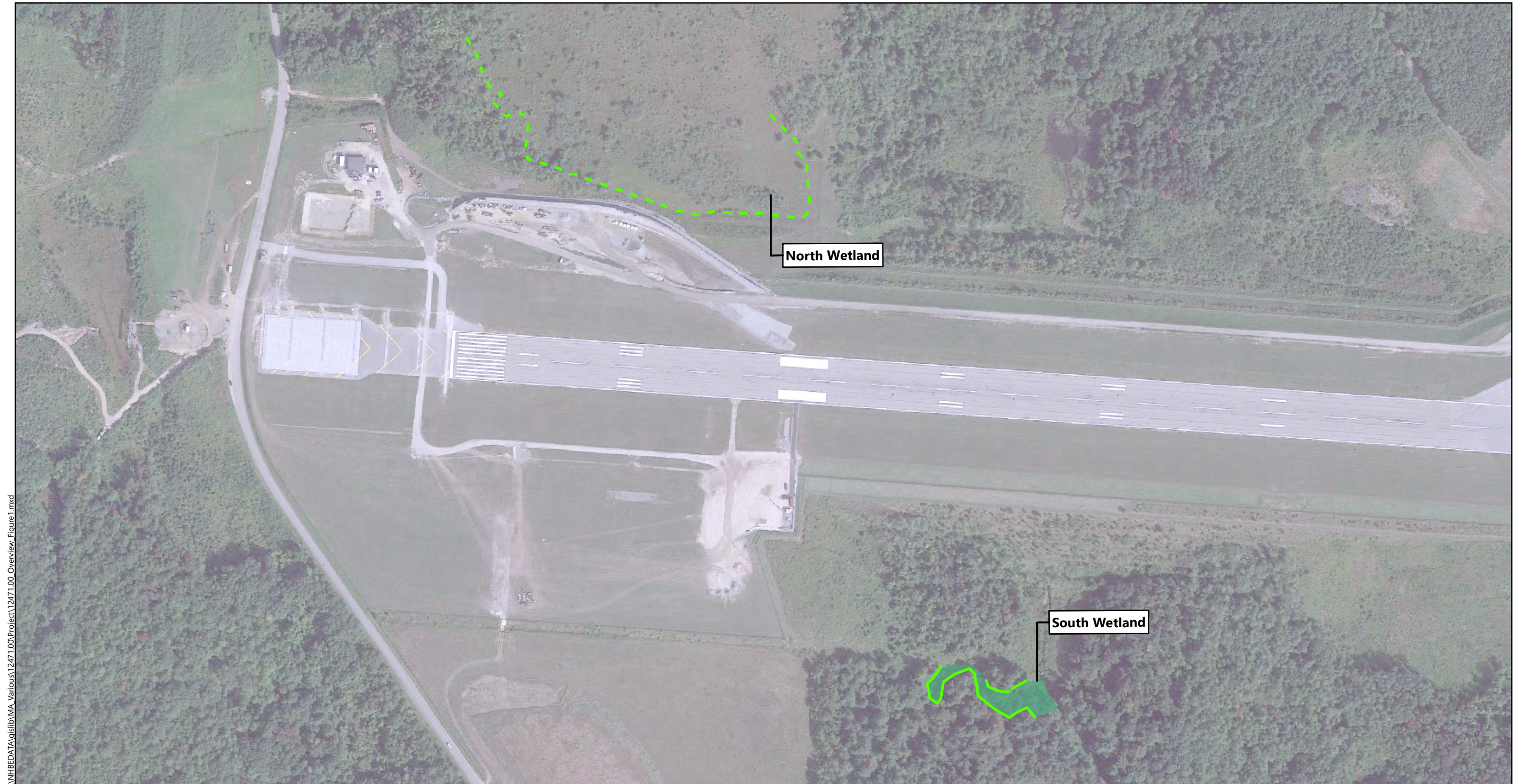


7. Summary Schedule and Responsible Parties

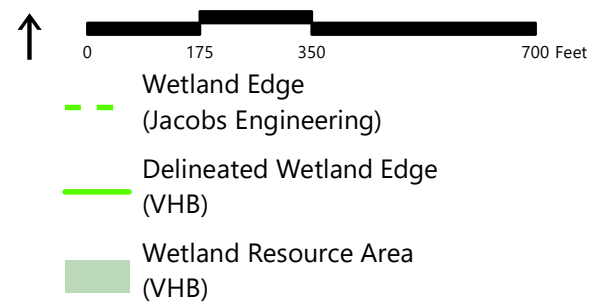
As required by DEP, this section provides a summary schedule of the actions listed in Sections 3 through 6, above, and identifies the responsible parties.

Table 2 Summary Schedule and Responsible Parties

Location	Action	Date	By
North Wetland Haul Road	Remove sediment Place topsoil, seed	Following LCC authorization Following completion of all construction	JF White Massport
ALSF Area	Hydroseed for permanent stabilization	Following completion of duct bank repairs (by October 1)	JF White
Perimeter Erosion Controls	Maintain until upgradient areas are stabilized	On-going	JF White
Project Site & Restoration Area Monitoring	Weekly inspections	Until October 30, 2018	Massport
Restoration Area Monitoring	Summary Report	November, 2018	Massport
Turbidity Monitoring	Rainfall Events greater than 1.0 inch	Until November 2019	Massport



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ORH Sediment Accumulation Evaluation

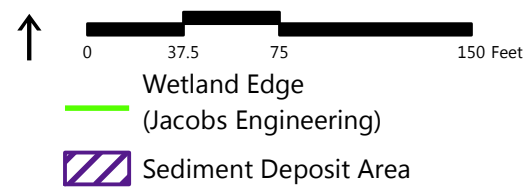
Leicester, Massachusetts

Wetland Overview Map

Source: VHB, MassGIS,
Google Imagery September 2017



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ORH Sediment Accumulation Evaluation

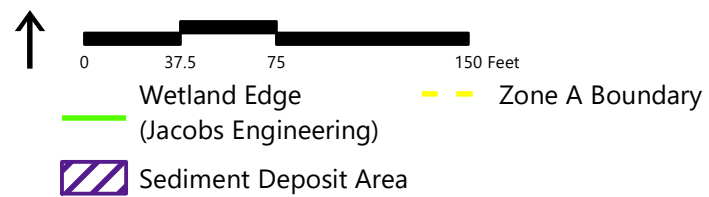
Leicester, Massachusetts

**Areas of Sediment
Accumulation**

Source: VHB, MassGIS,
Google Imagery Sptember 2017



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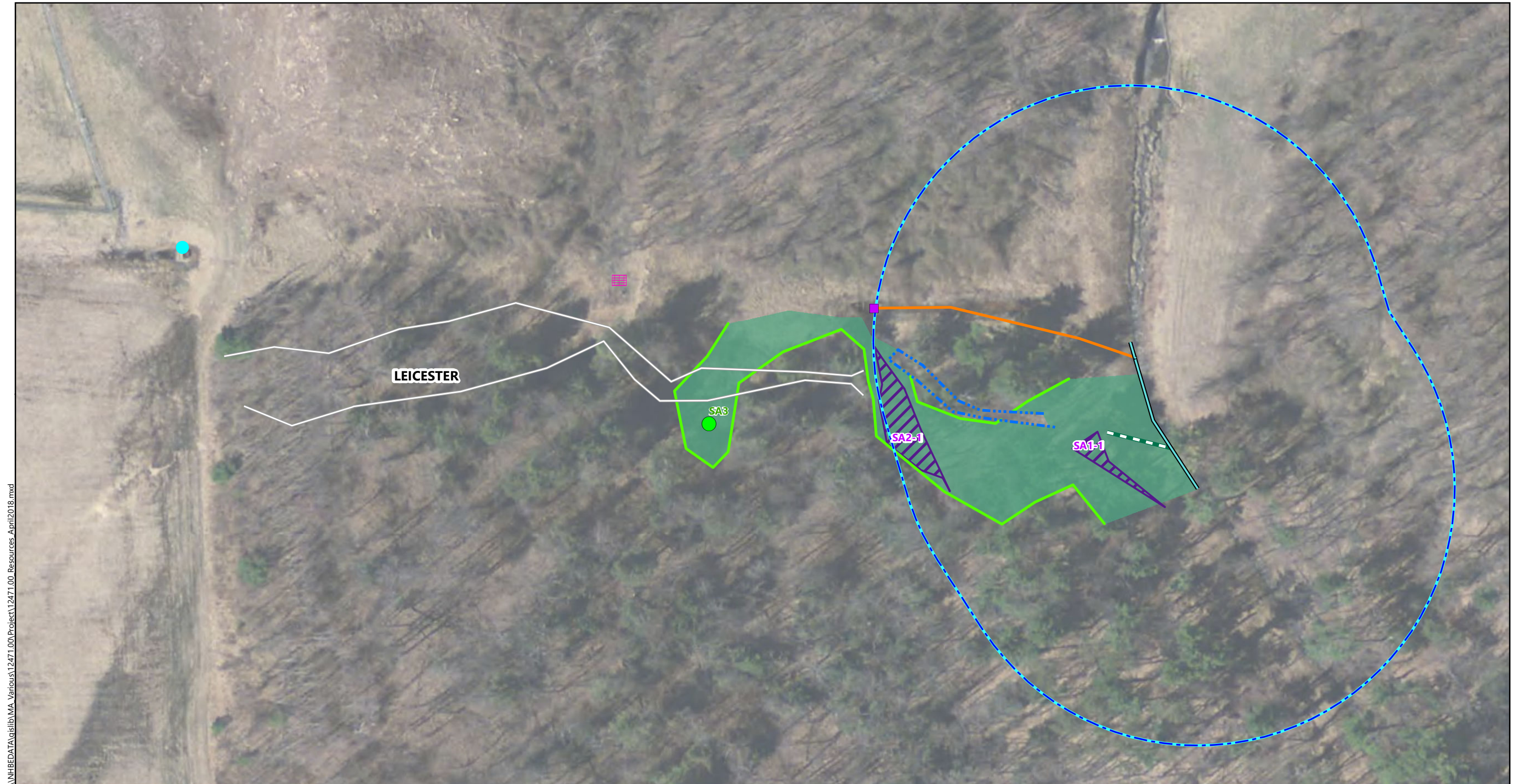


ORH Sediment Accumulation Evaluation

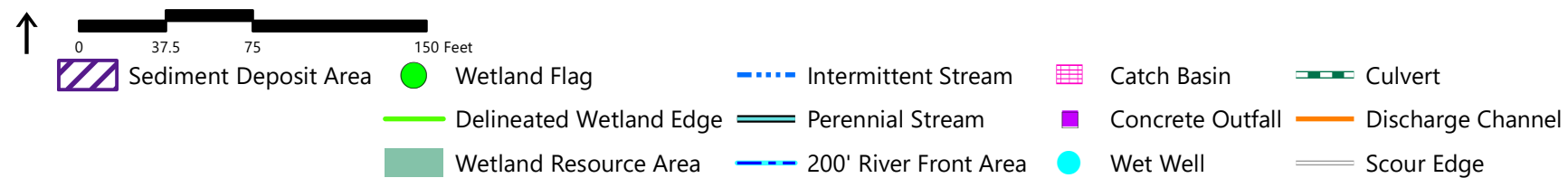
Leicester, Massachusetts

**Areas of Sediment
Accumulation
April 2018 - North**

Source: VHB, MassGIS,
Google Imagery September 2017



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ORH Sediment Accumulation Evaluation

Leicester, Massachusetts


Areas of Sediment Accumulation April 2018 - South


Source: VHB, MassGIS





Appendix B

Photo Log


PHOTOGRAPHIC LOG		
Client Name: MassPort		Site Location: Worcester Airport
		Project No. 12471.04
Photo No. 1	Date: 1/29/2018	
Direction Photo Taken: North		
Description: View of the wetland North of the Taxiway MSE Wall.		

PHOTOGRAPHIC LOG		
Client Name: MassPort		Site Location: Worcester Airport
		Project No. 12471.04
Photo No. 2	Date: 1/29/2018	
Direction Photo Taken: North		
Description: View of SA-5 in the wetland North of the Taxiway MSE Wall.		

PHOTOGRAPHIC LOG		
Client Name: MassPort	Site Location: Worcester Airport	Project No. 12471.04
Photo No. 3	Date: 1/29/2018	
Direction Photo Taken: North		
Description: View of SA-5 in the wetland North of the Taxiway MSE Wall.		

PHOTOGRAPHIC LOG		
Client Name: MassPort	Site Location: Worcester Airport	Project No. 12471.04
Photo No. 4	Date: 6/6/2018	
Direction Photo Taken: North		
Description: View of the wetland North of the Taxiway MSE Wall.		

PHOTOGRAPHIC LOG

Client Name: MassPort		Site Location: Worcester Airport	Project No. 12471.04
Photo No. 5	Date: 5/30/2018		
Direction Photo Taken: East			
Description: View of SA-4 within the wetland North of the Taxiway MSE Wall.			

PHOTOGRAPHIC LOG


Client Name: MassPort		Site Location: Worcester Airport	Project No. 12471.04
Photo No. 6	Date: 5/30/2018		
Direction Photo Taken: East			
Description: View of SA-5 the wetland north of the Taxiway MSE Wall.			


PHOTOGRAPHIC LOG

Client Name: MassPort		Site Location: Worcester Airport	Project No. 12471.04
Photo No. 7	Date: 5/30/2018		
Direction Photo Taken: North			
Description: View of SA-5 north of the Taxiway MSE Wall.			


PHOTOGRAPHIC LOG

Client Name: MassPort		Site Location: Worcester Airport	Project No. 12471.04
Photo No. 8	Date: 5/30/2018		
Direction Photo Taken: West			
Description: View of SA-4 accumulations immediately outside of the erosion controls within the wetland north of the MSE Wall.			


PHOTOGRAPHIC LOG		
Client Name: MassPort		Site Location: Worcester Airport
Project No. 12471.04		
Photo No. 9	Date: 5/30/2018	
Direction Photo Taken: North		
Description: View of the wetland north of the MSE Wall looking out at Zone B.		


PHOTOGRAPHIC LOG		
Client Name: Massport		Site Location: Worcester Airport
Project No. 12471.04		
Photo No. 10	Date: 8/14/18	
Direction Photo Taken: North		
Description: View of wetland north of the MSE Wall.		

PHOTOGRAPHIC LOG

Client Name: Massport		Site Location: Worcester Airport		Project No. 12471.04	
Photo No. 11	Date: 8/15/18	<div>Aug 14, 2018 at 8:47:59 AM Worcester</div> 			
Direction Photo Taken: Northwest					
Description: View of SA1-1, fifteen weeks after sediment removal was conducted. Leaf debris was hand raked over the exposed soils following removal.					

PHOTOGRAPHIC LOG

Client Name: Massport		Site Location: Worcester Airport	Project No. 12471.04
Photo No. 12	Date: 8/14/2018		
Direction Photo Taken: Northwest			
Description: View of SA2-1, fifteen week after sediment removal was conducted. Leaf debris was hand raked over exposed soils following removal.			

PHOTOGRAPHIC LOG		
Client Name: Massport		Site Location: Worcester Airport
		Project No. 12471.04
Photo No. 13	Date: 8/14/2018	
Direction Photo Taken: Northesat		
Description: View of SA3, fifteen weeks after sediment removal was conducted. Leaf debris was hand raked over the exposed soils following removal.		



Appendix C

Abutter Notification

**NOTIFICATION TO ABUTTERS UNDER THE
MASSACHUSETTS WETLANDS PROTECTION ACT**

Pursuant to the requirements of the Massachusetts Wetlands Protection Act (M.G.L. Chapter 131, Section 40), you are hereby notified of the following: The Massachusetts Port Authority (Massport) has filed a Notice of Intent with the Leicester Conservation Commission proposing to conduct sediment removal within a 1,500 sf area of a vegetated wetland to the north of the Worcester Regional Airport airfield. Copies of the NOI may be examined at the Leicester Conservation Commission office located in the Leicester Town Hall at 3 Washburn Square, between the hours of 8 AM and 5 PM on Mondays, Wednesdays, and Thursdays; and between the hours of 8 AM and 7 PM on Tuesdays. For more information, call the Leicester Conservation Commission at (508) 892-7007. The NOI may also be examined at ORH, by appointment. For more information call Jim Stolecki at (617) 568-3552. Copies of the NOI may be obtained by calling Meredith Avery at VHB at (617) 607.2604. Notice of the public hearing, including its date, time, and place, will be published in the Worcester Telegram & Gazette and will be posted in the Leicester Town Hall not less than 48 hours in advance of the hearing. You may also contact the Department of Environmental Protection Central Regional Office at (508) 792-7650 for more information about this Notice or the Wetlands Protection Act.



List of Property Owners

PARCEL 6-C1-0
CITY OF WORCESTER WATER
DEPT OF PUBLIC WORKS
20 EAST WORCESTER STREET
WORCESTER, MA 01604

PARCEL 6-C7-0
MASSPORT
ONE HARBORSIDE DR STE 200S
EAST BOSTON, MA 02128-2909

PARCEL 5-A6.7-0
MASSPORT
ONE HARBORSIDE DR STE 200S
EAST BOSTON, MA 02128-2909