Notice of Intent

Birch Meadow Park Phase 1

0 Birch Meadow Lane
Reading, MA

Owner:
Town of Reading
16 Lowell Street
Reading, MA 01867

Submitted To:
Town of Reading
Conservation Commission
16 Lowell Street
Reading, MA 01867

Civil Engineer/ Landscape Architect:
Activitas, Inc.
70 Milton Street
Dedham, MA 02026
(781) 355-7040

Wetland Delineation (near Parking Lot):
Epsilon Associates, Inc.
Environmental Consulting Services
3 Mill & Main Place, Suite 250
Maynard, MA 01754
(978) 897-7100

Survey:
Reed Land Surveying
109 Rhode Island Road, Suite 4A
Lakeville, MA 02347
(508) 923-1191

Wetland Delineation (near SB):
ECR
PO Box 4012
Plymouth, MA 02361
(617) 529-3792

November 29, 2022

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BRP WPA Form 3 – Notice of Intent

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

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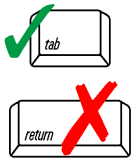
Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



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):

0 Birch Meadow Dr — a. Street Address
Reading — b. City/Town
01867 — c. Zip Code

Latitude and Longitude:
42deg 32'14.82"N — d. Latitude
70deg 06'39.29"W — e. Longitude

33 — f. Assessors Map/Plat Number
57 — g. Parcel /Lot Number

2. Applicant:

Ryan — a. First Name
Percival — b. Last Name
Tow nof Reading- Engineering — c. Organization
16 Lowell Street — d. Street Address
Reading — e. City/Town
MA — f. State
01867 — g. Zip Code
781-942-6690 — h. Phone Number
i. Fax Number
rpercival@ci.reading.ma.us — j. Email Address

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

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

4. Representative (if any):

Megan — a. First Name
Buczynski — b. Last Name
Activitas Inc. — c. Company
70 Milton Street — d. Street Address
Dedham — e. City/Town
MA — f. State
02026 — g. Zip Code
781-355-7040 — h. Phone Number
i. Fax Number
meb@activitas.com — j. Email address

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

n/a — a. Total Fee Paid
n/a — b. State Fee Paid
n/a — c. City/Town Fee Paid

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A. General Information (continued)

6. General Project Description:

Construction of a new ADA walkway across the HS site and paving of an existing gravel parking lot with new stormwater management controls.

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

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

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

1. ☐ Yes ☒ No

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

2. Limited Project Type

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

8. Property recorded at the Registry of Deeds for:

a. County	b. Certificate # (if registered land)
South Middlesex	
c. Book	**d. Page Number**
5476	184

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.

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

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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet 3. cubic feet of flood storage lost	2. square feet 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) - **specify coastal or inland**	

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ 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)

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

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

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

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

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

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

4. ☐ Restoration/Enhancement

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

a. square feet of BVW

b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings

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C. Other Applicable Standards and Requirements

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

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

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

   a. ☐ Yes ☒ No

   MA GIS, most recent

   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

   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.2.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

   c. Submit Supplemental Information for Endangered Species Review*

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

         (a) within wetland Resource Area _____ percentage/acreage

         (b) outside Resource Area _____ percentage/acreage

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

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

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

   (b) ☒ Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see https://www.mass.gov/ma-endangered-species-act-mesa-regulatory-review).
Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.
** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.

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

(c) ☐ MESA filing fee (fee information available at https://www.mass.gov/how-to/how-to-file-for-a-mesa-project-review).
Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

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

(d) ☐ Vegetation cover type map of site

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

(f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, https://www.mass.gov/service-details/exemptions-from-review-for-projectsactivities-in-priority-habitat; 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

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

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

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

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

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

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
836 South Rodney French Blvd.
New Bedford, MA 02744
Email: dmf.envreview-south@mass.gov

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: dmf.envreview-north@mass.gov

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

c. ☐ Is this an aquaculture project? d. ☐ Yes ☐ No

If yes, include a copy of the Division of Marine Fisheries Certification Letter (M.G.L. c. 130, § 57).

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

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

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

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

   b. ACEC

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

   a. ☐ Yes ☒ No

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

   a. ☐ Yes ☒ No

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

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

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

      2. ☒ A portion of the site constitutes redevelopment

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

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

      1. ☐ Single-family house

      2. ☐ Emergency road repair

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

D. Additional Information

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

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

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

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

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

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D. Additional Information (cont'd)

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

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

Refer to NOI Report for List of Drawings
a. Plan Title

Activitas Inc.
b. Prepared By

Megan Buczynski, PE
c. Signed and Stamped by

Refer to Plans
d. Final Revision Date

Refer to Plans
e. Scale

Refer to Plans
f. Additional Plan or Document Title

g. Date

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

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

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

8. ☐ Attach NOI Wetland Fee Transmittal Form

9. ☒ Attach Stormwater Report, if needed.

E. Fees

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

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

2. Municipal Check Number

3. Check date

4. State Check Number

5. Check date

6. Payor name on check: First Name

7. Payor name on check: Last Name

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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: 11/29/2022

3. Signature of Property Owner (if different)

4. Date

5. Signature of Representative (if any)

6. Date: 11/29/2022

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.

Project Description

The Town of Reading is proposing to renovate areas at Birch Meadow Park and the athletic fields associated with the High School campus. Renovations include formalizing the hard-packed gravel lot to the northwest of the track and field facility and renovating and extending accessible walkways to the south and southwest of the softball field between Birch Meadow Drive and the High School parking area. These improvements are to provide improved handicap accessibility throughout the park area.

The project limits are in two separate areas of the site. The parking lot project is located to the north of the site. There is a Bordering Vegetated Wetland to the southeast of the parking area. The walkway project is located to the south / southwest of the softball fields and there is a Bordering Vegetated Wetland to the southwest of the northwestern portion of the walkway near Birch Meadow Drive.

The project is subject to the Wetlands Protection Act (310 CMR 10.02 (2) (b) and (c)) and the Town of Reading Wetlands Protection Regulations as work falls within previously disturbed areas of the 100-foot Buffer Zone to Bordering Vegetated Wetlands (BVW). There is some work within 35' of the BVW as well which we understand to be a preferred no-touch zone by the Commission. The work within this area is also within previously disturbed area. No work is proposed within the BVW.

Refer to the Proposed Site Plans dated November 30, 2022 for more detailed information about the project.

1.0 Wetland Resource Areas

There are two Bordering Vegetated Wetlands located at the site in proximity to the projects.

Parking Lot Work

There is an existing Bordering Vegetated Wetland (BVW) to the west of the proposed parking lot renovations. Environmental Consulting & Restoration (ECR) performed a resource area review in compliance with local, state and federal requirements on July 27, 2021. The resource areas identified were as follows:

- BVW #A1 to #A27
- BVW #B1 to #B7
- BVW #C1 to #C13
- BVW #D1 to #D6

The Wetland Delineation Memo notes that there is an intermittent stream associated with the BVW, but that it is does not have a buffer zone under the state or local requirements and is not considered Riverfront Area.

The Report also notes that the site is NOT located within Estimated/Priority Habitat for Rare Species, Land Subject to Flooding, Areas of Environmental Concern, and there are NO vernal pools identified at the site.

A copy of the ECR Wetland Delineation Memo is included in the appendix of this report.

Walkway Work

There is an existing Bordering Vegetated Wetland (BVW) to the southwest of a portion of the proposed walkway area adjacent to Birch Meadow Drive. Epsilon Associates performed a resource area review in compliance with local, state and federal requirements on July 6 and 8, 2020. The resource areas identified were as follows:

- BVW #WF-100 – WF-131
- TOB #TOB-1 – TOB-18 (Inland Bank)
- Riverfront Area (RFA)
- Land Under Bodies and Waterways

It is important to note that where the culvert outlets to the east of the wetland it becomes river, however, the riverfront line stops perpendicular to the culvert outlet. All proposed work is to the north of the culvert outlet and therefore Bank, Riverfront, and Land Under Bodies and Waterways does not apply to the proposed project.

The Report also notes that the site is NOT located within Estimated/Priority Habitat for Rare Species, Land Subject to Flooding, Areas of Environmental Concern, and there are NO vernal pools identified near the project, although one was mapped as potential about 1,000 ft to the southwest of the site which is well beyond the proposed project area.

A copy of the Epsilon Wetland Delineation Memo is included in the appendix of this report.

1.1 Mitigation Measures

There is no work planned within the Resource Areas.

Parking Lot Area

Work will be performed within the 100-foot buffer zone to the BVW adjacent to the parking lot area. The majority of work will be in previously disturbed area, with a small portion of work requiring some brush removal, approximately 1,430sf. The closest distance to the BVW in previously wooded area is about 16'. Work within this area includes installation of a gravel pathway and a portion of the paved accessible walkway providing handicap access to the adjacent track and field area. Impacts from work within the buffer zone will be mitigated by Erosion and Sedimentation Control Best Management Practices (BMPs) during construction including straw wattles, silt fencing, and loam and seeding area of the area to establish ground cover as quickly as possible to reduce potential erosion impacts.

Walkway Area

A 10' wide paved walkway will be installed within the 100' buffer zone leading to Birch Meadow Drive. The walkway is approximately 30-35' from the edge of the BVWs in this location. All area from the edge of the BVW to the proposed walkway location is previously disturbed area and is currently maintained grass. Impacts from work within the buffer zone will be mitigated by Erosion and Sedimentation Control Best Management Practices (BMPs) during construction including straw wattles, silt fencing, and loam and seeding area of the area to establish ground cover as quickly as possible to reduce potential erosion impacts.

2.0 Erosion and Sedimentation Control During Construction

The project will disturb greater than one acre of soil and will therefore require coverage under the NPDES Construction General Permit (CGP). A Notice of Intent will be filed with the EPA prior to any earth moving activities. In addition, a Stormwater Pollution Prevention Plan (SWPPP) will be prepared in accordance with NPDES guidelines and implemented by the contractor. The SWPPP will detail Erosion Control BMPs such as:

- Straw Bale and Silt Fence Perimeter Controls
- Dewatering
- Pollution Prevention
- Inspection and Maintenance

These BMPs and others will prevent any adverse impacts to the Resource Areas. A SWPPP will be developed by the selected General Contractor and submitted to the Civil Engineer for review prior to the start of construction. If desired, the SWPPP can be submitted to the Conservation Agent for review as part of the Order of Conditions as well.

3.0 Stormwater Management

As noted above, the proposed stormwater management system has been designed in accordance with the "Massachusetts Stormwater Handbook" dated January 2008 (The Standards). These standards address both stormwater quantity and quality issues to ensure post construction runoff will result in no adverse impact to the resource area. Refer to the attached Stormwater Report for more detailed information.

4.0 Operation and Maintenance Plan

Indirect impacts to wetland resources associated with the discharge of runoff will be minimized through the implementation and proper maintenance of the stormwater management system. An Operation and Maintenance Plan (O&M) has been developed in draft form and will be finalized upon completion of the project. The Town of Reading will own the stormwater and utility systems on-site and will be responsible for maintaining these systems. A copy of the draft O&M can be found as an Attachment to the Stormwater Report.

5.0 Rare Species

Based on the mapping provided in the Massachusetts Natural Heritage Atlas 1 latest Edition, the project does not fall within areas designated as Estimated Habitat of Rare Wildlife or Priority Habitat of Rare Species by the Natural Heritage & Endangered Species Program (NHESP). Refer to the Resource Area Evaluation Report for the maps.

6.0 Town of Reading Wetlands Regulations Performance Standards

Section 3 of the Town of Reading Wetlands Protection Regulations defines the Performance Standards for Resource Areas. As noted previously, the applicable resource area to this project is Bordering Vegetated Wetland (BVW). In the local bylaw the following items apply to the project site:

- Item C: Fresh Water Wetlands

- Item D: Natural Zone of Vegetation
- Item I: Side Slopes Grades Near Wetlands
- Item L: Erosion Control
- Item N: Stormwater Runoff

The following is a description of how the proposed project meets the Performance Standards for each local requirement.

C. Freshwater Wetlands

1. The wetlands at the site are protected under the state and local jurisdiction.
2. There is no loss of wetlands at the site as part of this project.
3. The proposed project does not alter any wetlands on-site.
4. The Resource Areas Delineations are within the three year time period.

D. Zone of Natural Vegetation

1. No response required.
2. As noted in Section 1.1 Mitigation Measures above, at the Parking Lot Area there is work in previously wooded area about 16' away from the existing wetland to allow for the installation of the gravel pathway. At the northernmost area of the BVW, the gravel path is located within 5' of the BVW, but all work is within previously disturbed area. We do request relief from the 25' ZNV to allow for the accessible pathway work to be completed.
3. The limit of work shown on the plans accounts for the curtilage described.
4. The project does include pedestrian light poles adjacent to the gravel walkway within the ZNV. The project requests relief to this requirement to allow for appropriate lighting of the walkway area to ensure safety.
5. Relief from the ZNV as noted in item 4 above is requested.
6. If additional markers are requested by the Commission they can be provided along this edge.

I. Side Slopes Grades Near Wetlands

1. There are minimal slopes adjacent to the BVW area. However, where there is a slope it is in excess of 3:1.

L. Erosion Control

1. All disturbed areas will be stabilized and reviewed with the Conservation Agent prior to removal of any erosion controls.

N. Stormwater Runoff

1. The proposed project is a mix of new and redevelopment. The Stormwater Standards will be met to the extent practicable as described in the attached Stormwater Report.

Appendices

Abutter's Information

GIS Site Map

List of Separately Bound Drawings

Resource Area Evaluation Report

Stormwater Report (Bound Separately)

Appendix A - Abutter's Information

Assessor's Information

Patriot Properties

Reading

11/15/2022

2:15:57PM

Abutters List

Filter Used: DataProperty.AccountNumber in (6459,6412,6409,6415,6436,6410,6460,6408,6445,6411,6458,6413,6446)

0 BIRCH MEADOW

Abutters List

ParcelID	Location	Owner	Co-Owner	Mailing Address	City	State	Zip
033.0-0000-0052.0	BIRCH MEADOW	TOWN OF READING	PARK	16 LOWELL ST	READING	MA	01867
033.0-0000-0053.0	BIRCH MEADOW	TOWN OF READING	PARK	16 LOWELL ST	READING	MA	01867
033.0-0000-0054.0	BIRCH MEADOW	TOWN OF READING	PARK	16 LOWELL ST	READING	MA	01867
033.0-0000-0055.0	BIRCH MEADOW	TOWN OF READING	PARK	16 LOWELL ST	READING	MA	01867
033.0-0000-0056.0	BIRCH MEADOW	TOWN OF READING	PARK	16 LOWELL ST	READING	MA	01867
033.0-0000-0057.0	BIRCH MEADOW	TOWN OF READING	PARK	16 LOWELL ST	READING	MA	01867
033.0-0000-0059.0	BIRCH MEADOW DR	TOWN OF READING	PARK	16 LOWELL ST	READING	MA	01867
033.0-0000-0080.0	27 ARTHUR B LORD DR	TOWN OF READING	BIRCH MEADOW ELEMENTA	27 ARTHUR B LORD DR	READING	MA	01867
033.0-0000-0091.0	89 BIRCH MEADOW DR	TOWN OF READING	ARTHUR W. COOLIDGE JR H	89 BIRCH MEADOW DR	READING	MA	01867
033.0-0000-0092.0	36 ARTHUR B LORD DR	GREATER BOSTON YMCA		321 HUNTINGTON AVE	BOSTON	MA	02115
033.0-0000-0104.0	15 TENNYSON CIR	CUNHA JONATHAN M	CUNHA NATALIE A	15 TENNYSON CIRCLE	READING	MA	01867
033.0-0000-0105.0	17 TENNYSON CIR	DECESARE PAUL M	ERIN B DECESARE	17 TENNYSON CIR	READING	MA	01867
033.0-0000-0106.0	18 TENNYSON CIR	DIGIORGIO MICHAEL	DIGIORGIO JILL	18 TENNYSON CIR	READING	MA	01867

End of Report

Appendix B – GIS Site Map

Town of Reading, MA

Property

Open History

EADOW

Google Directions | Zoom

View Details

Bing Bird's Eye

Google Maps Link

Town of Reading

Reading GIS Home Page

Property Record Card

Property

Address	0 BIRCH MEADOW
ID	033.0-0000-0057.0
Neighborhood	MG

Ownership

Name	TOWN OF READING PARK
Address	16 LOWELL ST READING, MA 01867

Valuation

Total	$540,400
Land	$540,400
Last Sale	$1 on 20010101
Book/Page	5476/185
Assessment Year	2021

Land

Area	7.56
Zone	S15
Land Use	VACANT MNCPL
Land Use Code	930

Flood Zone

View the Official FEMA FIRM Map | Download FIRM Map

View Panel 25017C0311E | Download Panel 25017C0311E

Show On Map

Zoom To | Share

Search | Selection | Themes | Markup | Abutters

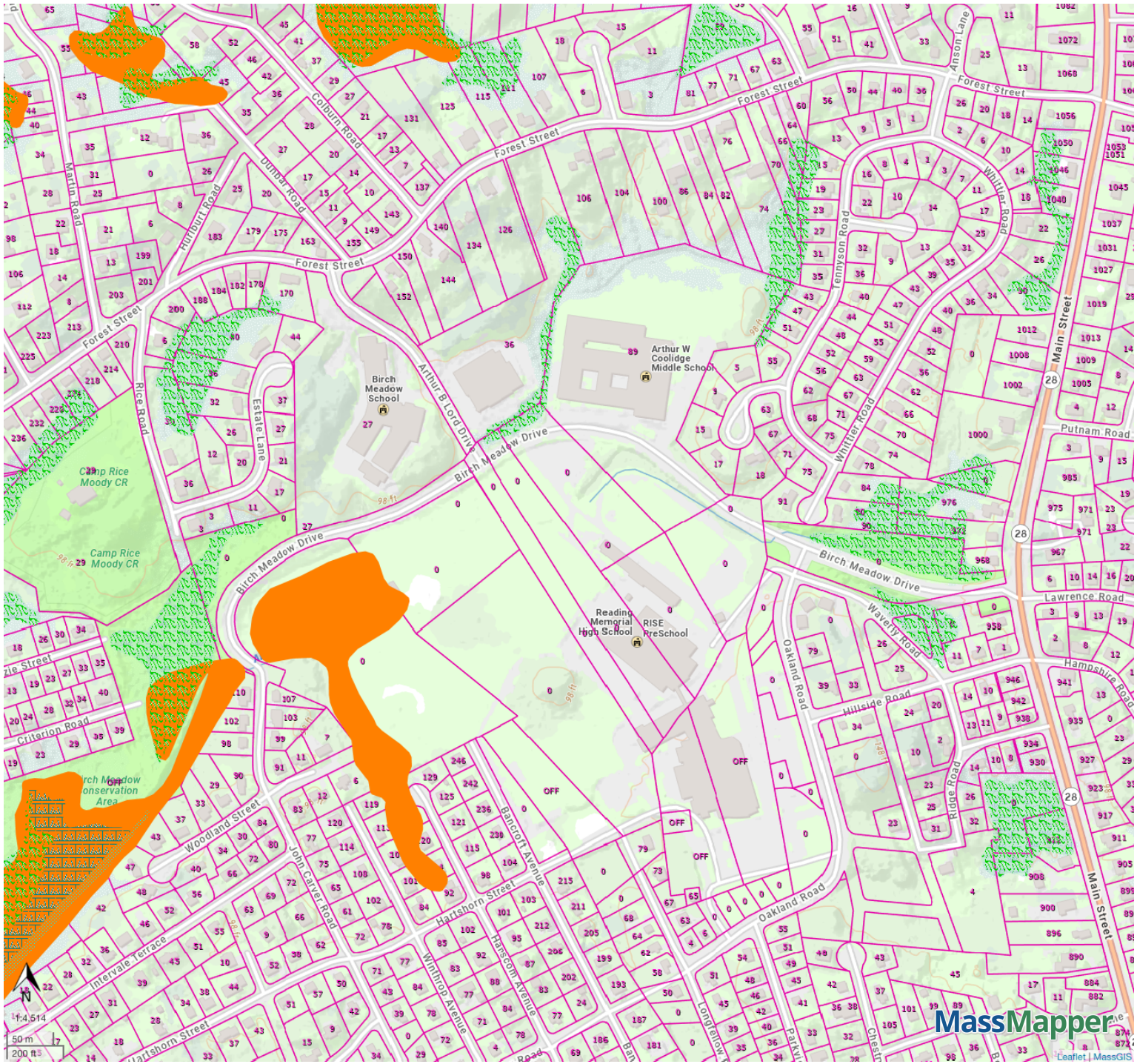
Created By Print (11-10-2022 04:15 pm)
0 views

42.535281,-71.114685

Google AppGeo

Keyboard shortcuts | Imagery ©2022 , MassGIS, Commonwealth of Massachusetts EOEA, Maxar Technologies | 100 ft | Terms of Use | Report a map error

MA GIS



Outstanding Resource Waters

- ACEC
- Cape Cod National Seashore
- Protected Shoreline
- Public Water Supply Watershed
- Retired Public Water Supply
- Scenic/Protected River
- Wildlife Refuge

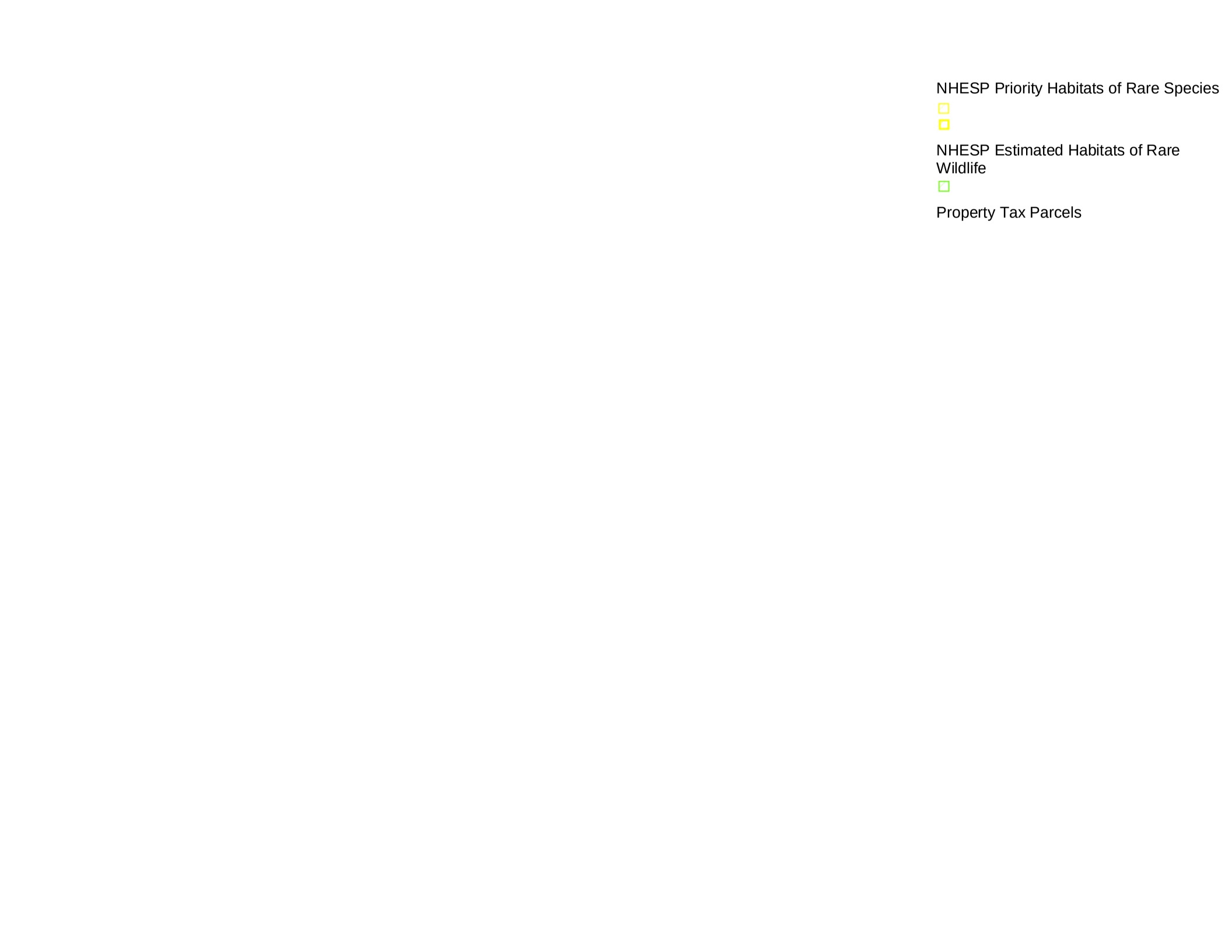
DEP Wetlands Detailed

- Barrier Beach System
- Barrier Beach-Deep Marsh
- Barrier Beach-Wooded Swamp Mixed Trees
- Barrier Beach-Coastal Beach
- Barrier Beach-Coastal Dune
- Barrier Beach-Marsh
- Barrier Beach-Salt Marsh
- Barrier Beach-Shrub Swamp
- Barrier Beach-Wooded Swamp Coniferous
- Barrier Beach-Wooded Swamp Deciduous
- Bog
- Coastal Bank Bluff or Sea Cliff
- Coastal Beach
- Coastal Dune
- Cranberry Bog
- Deep Marsh
- Barrier Beach-Open Water
- Open Water
- Rocky Intertidal Shore
- Salt Marsh
- Shallow Marsh Meadow or Fen
- Shrub Swamp
- Tidal Flat
- Wooded Swamp Coniferous
- Wooded Swamp Deciduous
- Wooded Swamp Mixed Trees

Areas of Critical Environmental Concern ACECs

FEMA National Flood Hazard Layer Polygons

- A: 1% Annual Chance of Flooding, no BFE
- AE: 1% Annual Chance of Flooding, with BFE
- AE: Regulatory Floodway
- AH: 1% Annual Chance of 1-3ft Ponding, with BFE
- AO: 1% Annual Chance of 1-3ft Sheet Flow Flooding, with
- VE: High Risk Coastal Area
- D: Possible But Undetermined Hazard
- X: 0.2% Annual Chance of Flooding
- X: 1% Drainage Area < 1 Sq. Mi.
- X: Reduced Flood Risk due to Levee
- Area Not Included
- Area with no DFIRM - Paper FIRMs in Effect


NHESP Priority Habitats of Rare Species
NHESP Estimated Habitats of Rare Wildlife
Property Tax Parcels

Appendix C – List of Separately Bound Drawings

	TOPOGRAPHIC SURVEY (SHEET 1 OF 2)
	TOPOGRAPHIC SURVEY (SHEET 2 OF 2)
L0.1	KEY PLAN
SP1.1	SITE PREPARATION PLAN SHEET I
SP1.2	SITE PREPARATION PLAN SHEET II
SP1.3	SITE PREPARATION DETAILS
L1.1	LAYOUT AND MATERIALS PLAN SHEET I
L1.2	LAYOUT AND MATERIALS PLAN SHEET II
L2.1	GRADING AND UTILITY PLAN SHEET I
L2.2	GRADING AND UTILITY PLAN SHEET II
L3.1	PLANTING PLAN SHEET I
L3.2	PLANTING PLAN SHEET II
L3.3	PLANTING DETAILS AND SCHEDULES
L5.1	DETAIL SHEET I
L5.2	DETAIL SHEET II
L5.3	DETAIL SHEET III

Appendix D – Wetland Delineation Reports

ECR

Environmental Consulting & Restoration, LLC

WETLAND DELINEATION MEMO

TO: Reed Land Surveying, Inc.

FROM: Brad Holmes

DATE: August 5, 2021

RE: Reading High School, Reading

Per your request, Environmental Consulting & Restoration, LLC (ECR) performed a review of the existing conditions at the Reading High School property located at off Birch Meadow Drive in Reading (the site) on July 27, 2021. The purpose of the review was to identify wetland resource areas on and near the existing track and field located in the northern portion of the High School property. The weather on July 27th was mostly sunny and warm (approximately 80 degrees) with light wind and dry site conditions. Wetland resource areas are located along the northern portion of the track associated with a USGS mapped intermittent stream. ECR placed Bordering Vegetated Wetland (BVW) flags (pink/black striped) along the limits of the wetlands as follows:

BVW #A1 to #A27 – wetland along the south side of the stream
BVW #B1 to #B7 – wetland along the north side of the stream
BVW #C1 to #C13 – wetland along the north side of the stream
BVW #D1 to #D6 – wetland offsite to the northeast

The vegetated wetlands were delineated following the methodology established by the Massachusetts Department of Environmental Protection (DEP) regulations found at 310 CMR 10.55 pertaining to the delineation of Bordering Vegetated Wetlands. The delineation was performed by analyzing vegetation, hydrology within 12 inches of the surface, and soil conditions within 20 inches of the surface. The wetland contains hydric soils, saturated soils, and dominant wetland indicator plants. The Inland Banks to an U.S.G.S. mapped intermittent stream (light blue line) were also located for reference. This intermittent stream is confirmed as intermittent since the Massachusetts Streamstats Program calculates a watershed area for this stream less than 0.5 square miles (calculated at 0.37 sq. miles, see attached). Inland Bank flags (blue ribbons) #IB1 to #IB21 were placed along the southern bank and #IB100 to #IB117 along the northern bank. As a result of ECR's wetland delineation at the site, ECR is able to confirm that the site contains the following wetland resource areas and areas of Conservation Commission jurisdiction:

- Bordering Vegetated Wetlands
- 100-foot Buffer Zone to BVW

Also review of the MassGIS wetlands database reveals the following:

1. The site is not located within Estimated/Priority Habitat for Rare Species according to the Massachusetts Natural Heritage & Endangered Species Program (MaNHESP).
2. The site does not contain Certified Vernal Pools according to the MaNHESP.
3. The site does not contain areas mapped as Land Subject to Flooding (FEMA flood zone)
4. The site is not located within an Area of Critical Environmental Concern.

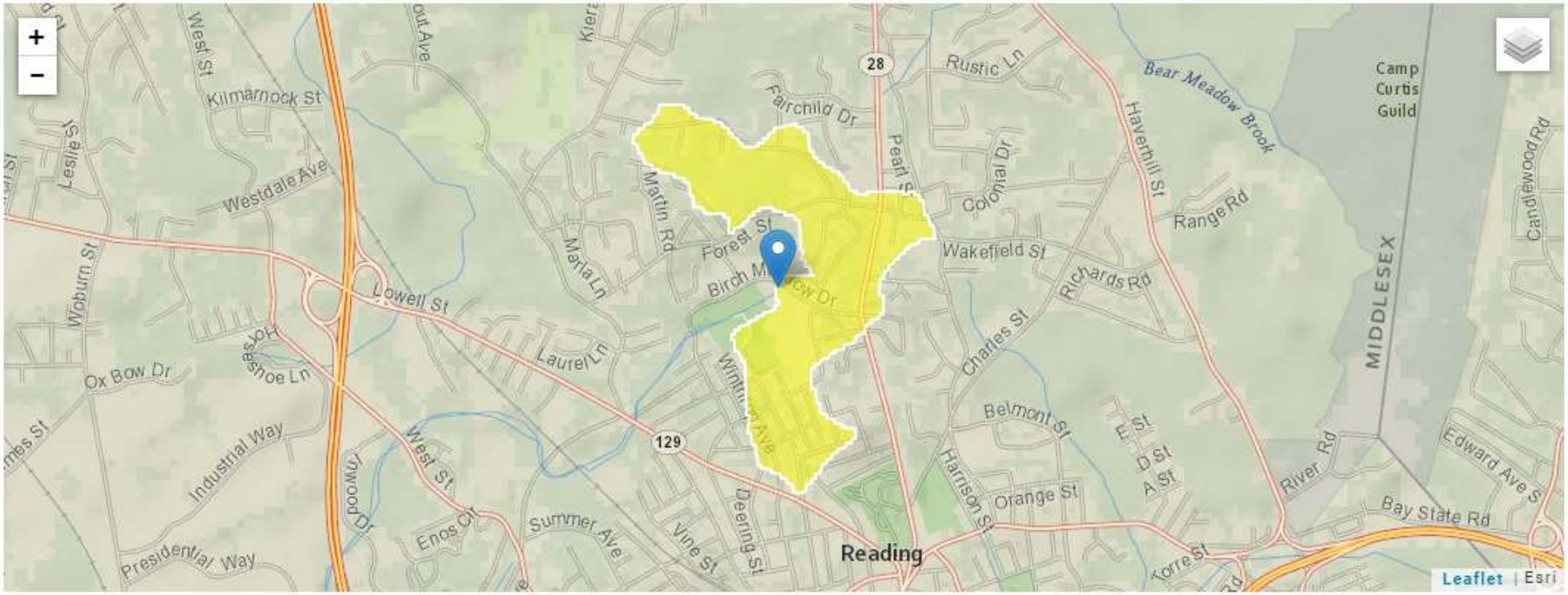
ECR
Environmental Consulting & Restoration, LLC

Upon review of this wetland delineation memo, please contact me at (617) 529 – 3792 or brad@ecrwetlands.com with any questions or requests for additional information.

Thank you,
Brad Holmes, Professional Wetland Scientist #1464
Manager

StreamStats Report

Region ID:	MA
Workspace ID:	MA20210805193228527000
Clicked Point (Latitude, Longitude):	42.53733, -71.11000
Time:	2021-08-05 15:32:45 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.37	square miles

Epsilon
ASSOCIATES INC.

Projects:\5886\Wetland Delineation

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July 16, 2020

Mr. Mark Novak
Activitas, Inc.
70 Milton Street
Dedham, MA 02026

Subject: Field Completion Memo – Castine Field (Birch Meadow Park) – Reading, MA

Dear Mr. Novak,

Epsilon Associates, Inc. ("Epsilon") has prepared this "Wetland Delineation Completion Summary" to document the wetland resource areas identified and delineated at and adjacent to Castine Field in Birch Meadow Park, Reading, MA (the "Study Area"). This memo describes the resource areas identified and delineated within the Study Area on July 6 & 8, 2020. See Attachment A, Figure 1 for a depiction of the site location. Representative site photographs are provided in Attachment B; wetland determination forms are provided in Attachment C.

It is important to note that the Study Area site visit was conducted during a Level 2 - Significant Drought issued on June 24, 2020 by the Executive Office of Energy and Environmental Affairs (EEA). This declaration was based on dry conditions present in the Northeast region in May and June 2020. On July 10, 2020 the EEA declared a Level 1 – Mild Drought in the Northeast Region. There are six drought indices used to determine the drought level: precipitation, streamflow, groundwater levels, lakes & impoundments, fire danger and evapotranspiration. Epsilon presumes that the Study Area water table was lower at the time of the site visit compared to non-drought conditions.

Study Area Description

Castine Field (the "field") is bordered by Meadow Birch Drive to the north and west; the Aberjona River to the south; and a baseball field to the east. The field sits at a lower elevation compared to the surrounding land. Most of the field appears to be nearly level and can be characterized as a concave/depression (somewhat bowl-shaped) landform. A narrow swale is located around the perimeter of the field. The swale is located at lower elevations compared to the nearly level field. Two culvert inlets, located at the western end of the field, appear to provide a hydrological connection with the Aberjona River and a Massachusetts Department of Environmental Protection (MassDEP) mapped wetland located to the west of Birch Meadow Drive.

MassDEP wetland datalayers, available on MassGIS, does not identify Castine Field as a wetland (see Figure 2), but the Federal Fish & Wildlife Service National Wetlands Inventory identifies Castine Field as a Palustrine ("P") Emergent ("EM") Persistent ("1") Seasonally Flooded/Saturated ("C") Excavated ("x") wetland. The area is mapped as Udorthents, wet substratum by the Natural Resource Conservation Service ("NRCS") Web Soil Survey (see Figure 4).

The entirety of the field was identified as previously disturbed Bordering Vegetated Wetland ("BVW"). Wetland flags WF-100 through WF-131 were established around the perimeter of the field. Hydrophytic vegetation, hydric soil indicators and wetland hydrology indicators were present within the perimeter swale described above. These strong wetland indicators extended beyond the swale and into portions of the western and northern field perimeter. Dominant hydrophytic vegetation species within the swale include cattail (*Typha latifolia*), arrow-arum (*peltandra virginica*), arrow-leaved tearthumb (*Persicaria sagittate*), tussock sedge (*Carex stricta*), jewelweed (*Impatiens capensis*), sensitive fern (*Onoclea sensibilis*), purple loosestrife (*Lythrum salicaria*), pointed broom sedge (*Carex scoparia*), lake sedge (*Carex lacustris*), blunt spikesedge (*Eleocharis obtusa*), *Poa sp.*, *Solidago sp.*, and curly dock (*Rumex crispus*).

Castine Field is routinely mowed, and it is Epsilon's understanding that the field has experienced historic alterations and is used periodically for recreational purposes. Due to historic and recurring vegetation disturbances, most of the field lacks strong evidence of hydrophytic vegetation. Vegetation identification was limited within the field due to recent mowing. Dominant vegetation species identified within the field include plantain (*Plantago rugelii*), *Poa sp*., and clover (*Medicago sp.)*. To determine if the field exhibited indicators of hydric soil and wetland hydrology, Epsilon augured and/or dug eight soil observation test pits. The observation pits were conducted in a north to south alignment across the center of the field and along the eastern end of the field. Hydric soil and wetland hydrology indicators were observed within each observation pit. Water table observations in each pit ranged from depths of 9" (within the perimeter swale/lower elevations) to 16" (in the center of the field/higher elevations). The wetland hydrology indicators observed provide evidence that the site has a continuing wetland hydrologic regime and that observed hydric soils are not relicts of a past hydrologic regime. Wetland Determination Data Forms (Attachment C) were completed for one wetland-upland transect within the Study Area. The wetland data plot was conducted in an area that appeared to be the "driest" portion of the field, and/or where the hydroperiod and soils may be more problematic. The approximate location of the data plots are identified on an aerial map in Attachment C.

Recorded soil observations were made from the undisturbed wall/floor of small hand dug pits. A typical soil profile within the field consisted of a ±6" ^A horizon with a fine sandy loam texture. The underlying ^Bg1 horizon appears to be Human Transported Material ("HTM") consisting of a gravelly fine to medium sand. Gravel was subangular and ranged from 0-4" in diameter. The ^Bg1 layer generally extended for ~6" and was very dense/well compacted. The Bg2 horizon extended beyond depths of 18" and consisted of a fine sand material. Horizon boundary distinctness (i.e., the vertical distance through which the bottom of one horizon grades (transitions) into the next) throughout the field was abrupt to clear. Horizon boundary topography (i.e., the lateral undulation

and continuity of the boundary between horizons) throughout the field was clear. Based on the observations noted above it appears that the field has experienced significant disturbance in the past.

The USGS mapped perennial Aberjona River (the "river") flows in a westerly direction from an underground culvert outlet, near the baseball field to the east of Castine Field, to the river's culvert crossing at Birch Meadow Drive. The riverbanks are located nearly parallel to the field and appear to have experienced historical straightening. The frame of a water control structure was noted east of the Birch Meadow Drive culvert crossing. Perceptive water flow was noted within western reaches of the channel, while stagnant pools appeared to be present within the eastern reaches of the channel. The riverbank was delineated with Top of Bank ("TOB") flags TOB-1 through TOB-18.

The current Federal Emergency Management Agency ("FEMA") Flood Insurance Rate Map ("FIRM") dated 6/4/2010 Community Panel Number 25017C0311E indicates that Castine Field is not located within the 100-year floodplain (see Attachment A, Figure 3). According to the current FEMA FIRM the area is mapped as Zone X - 0.2% annual chance flood hazard.

State and town regulated wetland resource areas identified by Epsilon within the Study Area include:

- Inland Bank ("Bank"),
- Riverfront Area ("RFA"),
- Bordering Vegetated Wetland ("BVW"), and
- Land under Water Bodies and Waterways ("LUW").

According to the Natural Heritage and Endangered Species Program (Natural Heritage Atlas, 2017), there is no mapped Priority and Estimated Habitats within or adjacent to the Study Area. There are no mapped certified or potential vernal pools within the Study Area (see Attachment A, Figure 2). There are two certified vernal pools and one potential vernal pool mapped within 1,000 feet southwest of the Study Area.

If you have any questions regarding this wetland delineation summary, please do not hesitate to contact me at (978) 461-6237 or via email at mkelly@epsilonassociates.com

Sincerely,
EPSILON ASSOCIATES, INC.

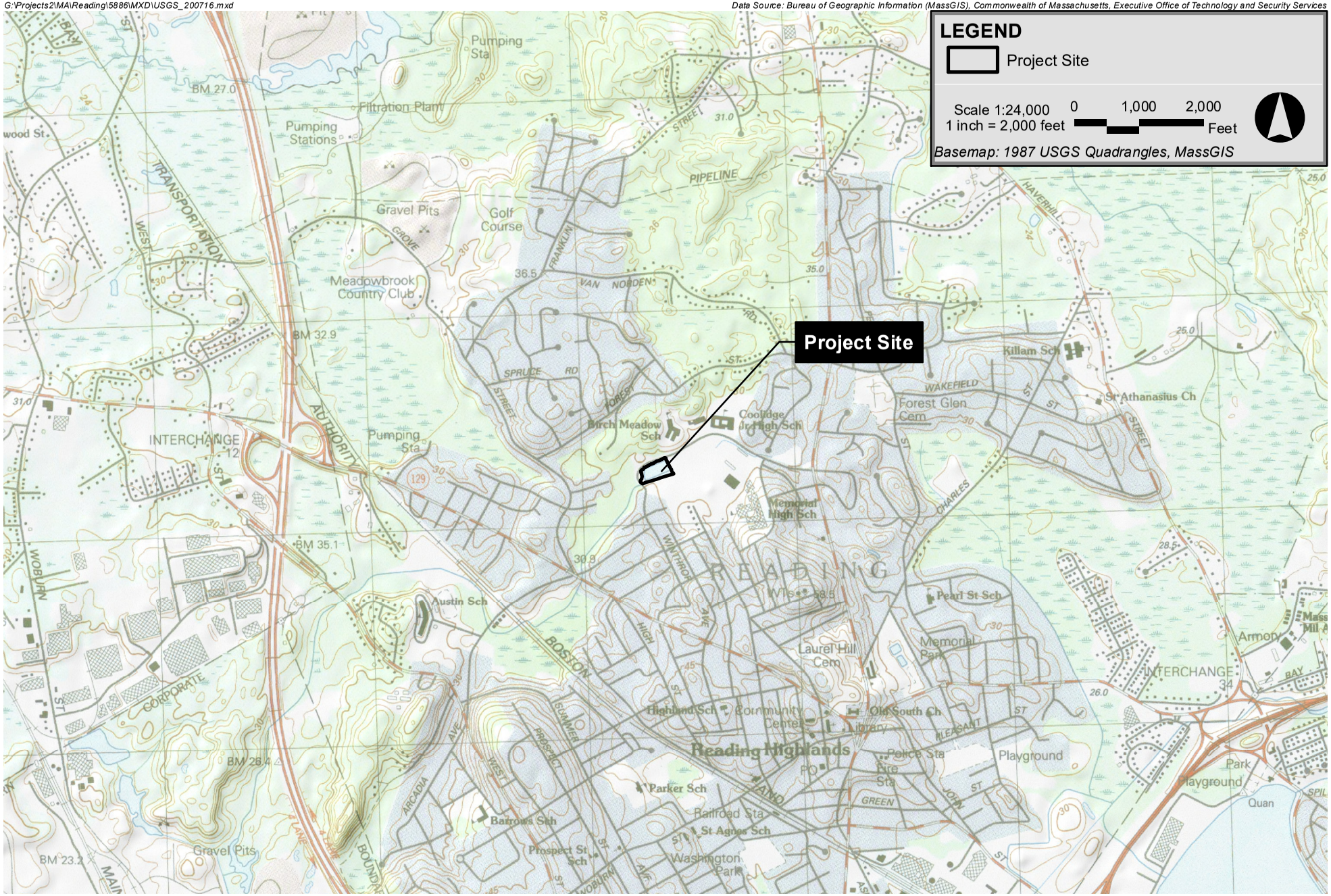
Matthew Kelly
Senior Scientist

Attachment A

Figures

G:\Projects2\MA\Reading\5886\MXD\USGS_200716.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Castine Field – Birch Meadow Park Reading, MA

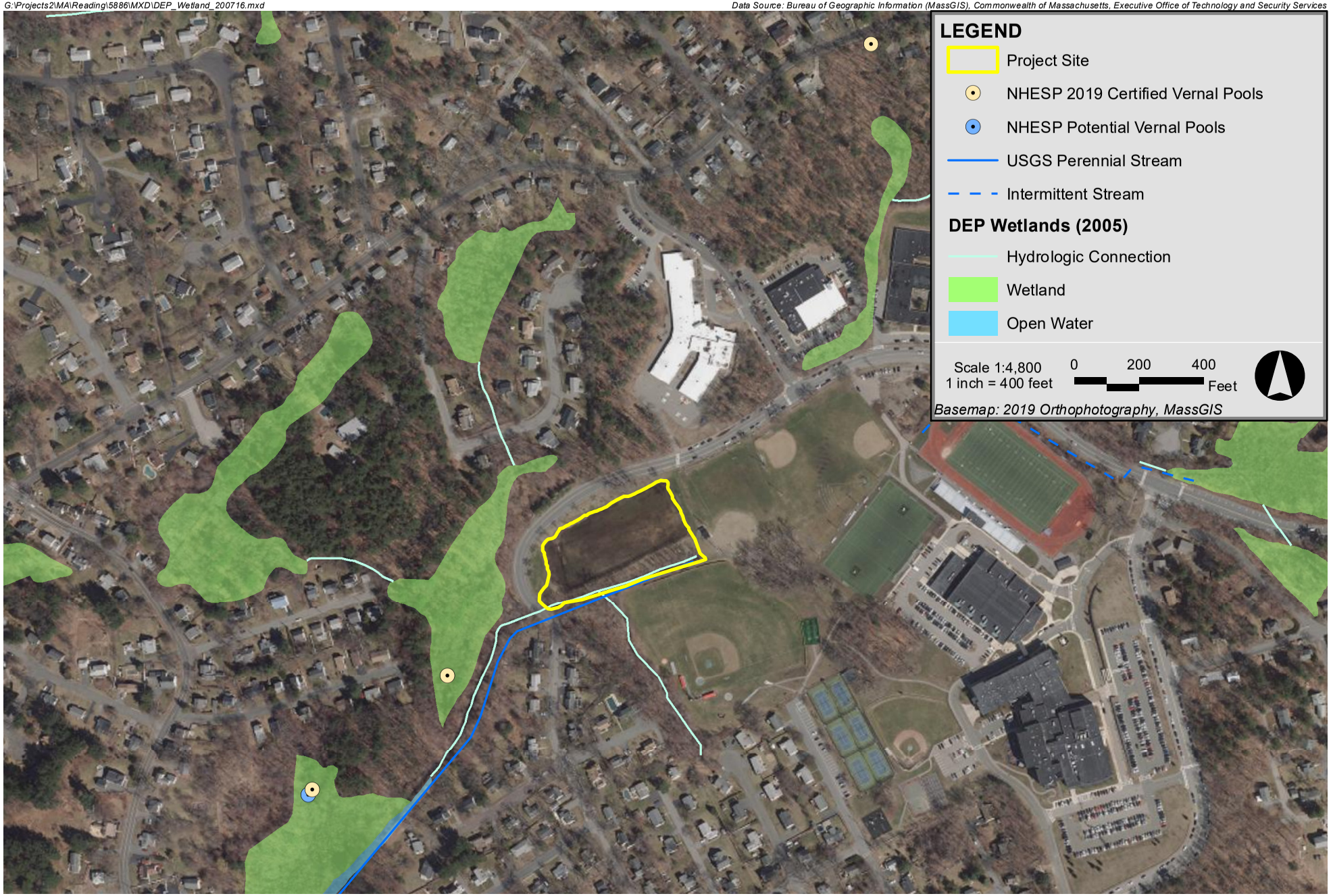
Epsilon ASSOCIATES INC.

Figure 1

USGS Site Locus

G:\Projects2\MA\Reading\5886\MXD\DEP_Wetland_200716.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Castine Field – Birch Meadow Park Reading, MA

Epsilon ASSOCIATES INC.

Figure 2

MassDEP Wetland Map (including CVP & PVP data)

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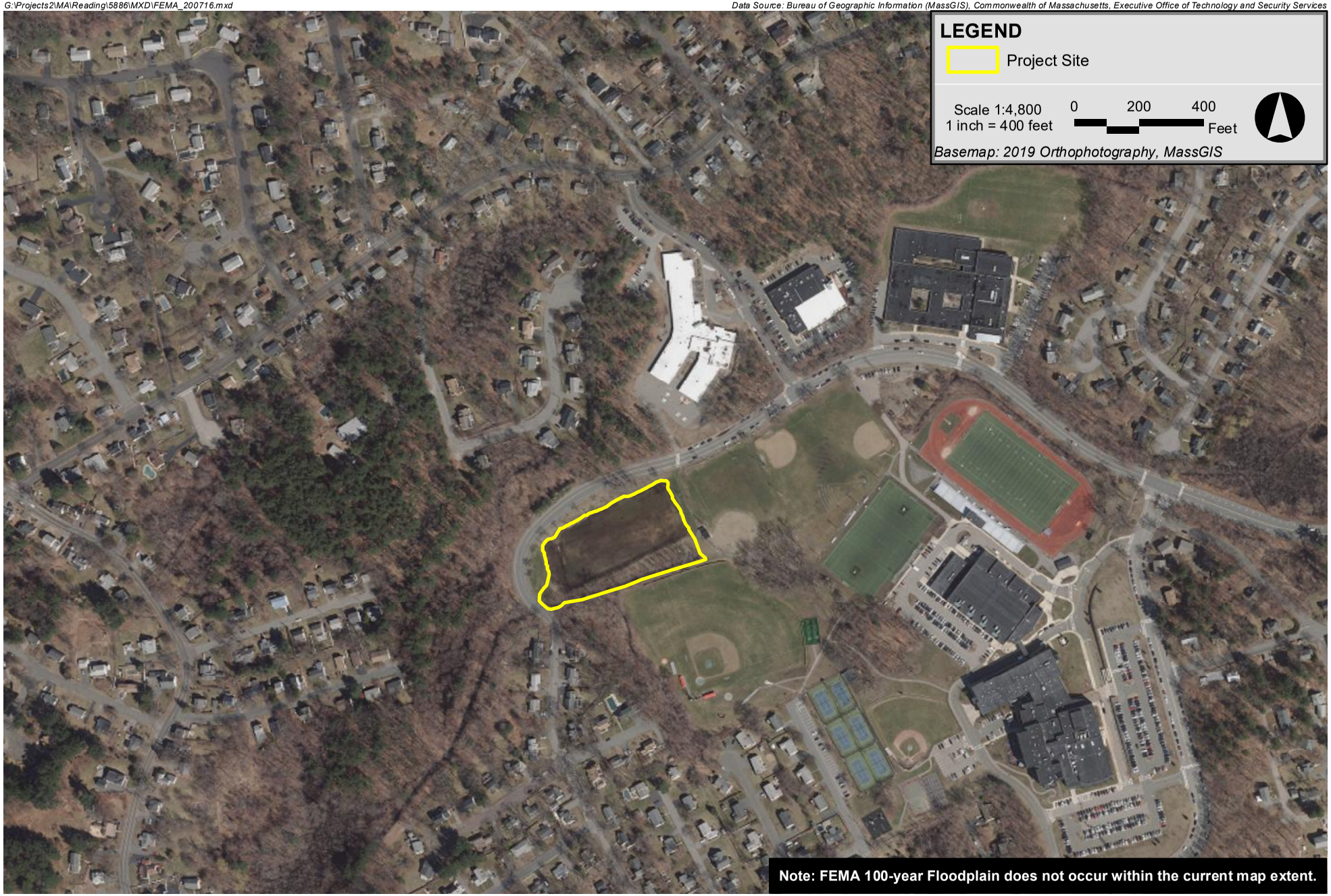
Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Castine Field – Birch Meadow Park Reading, MA

Epsilon ASSOCIATES INC.

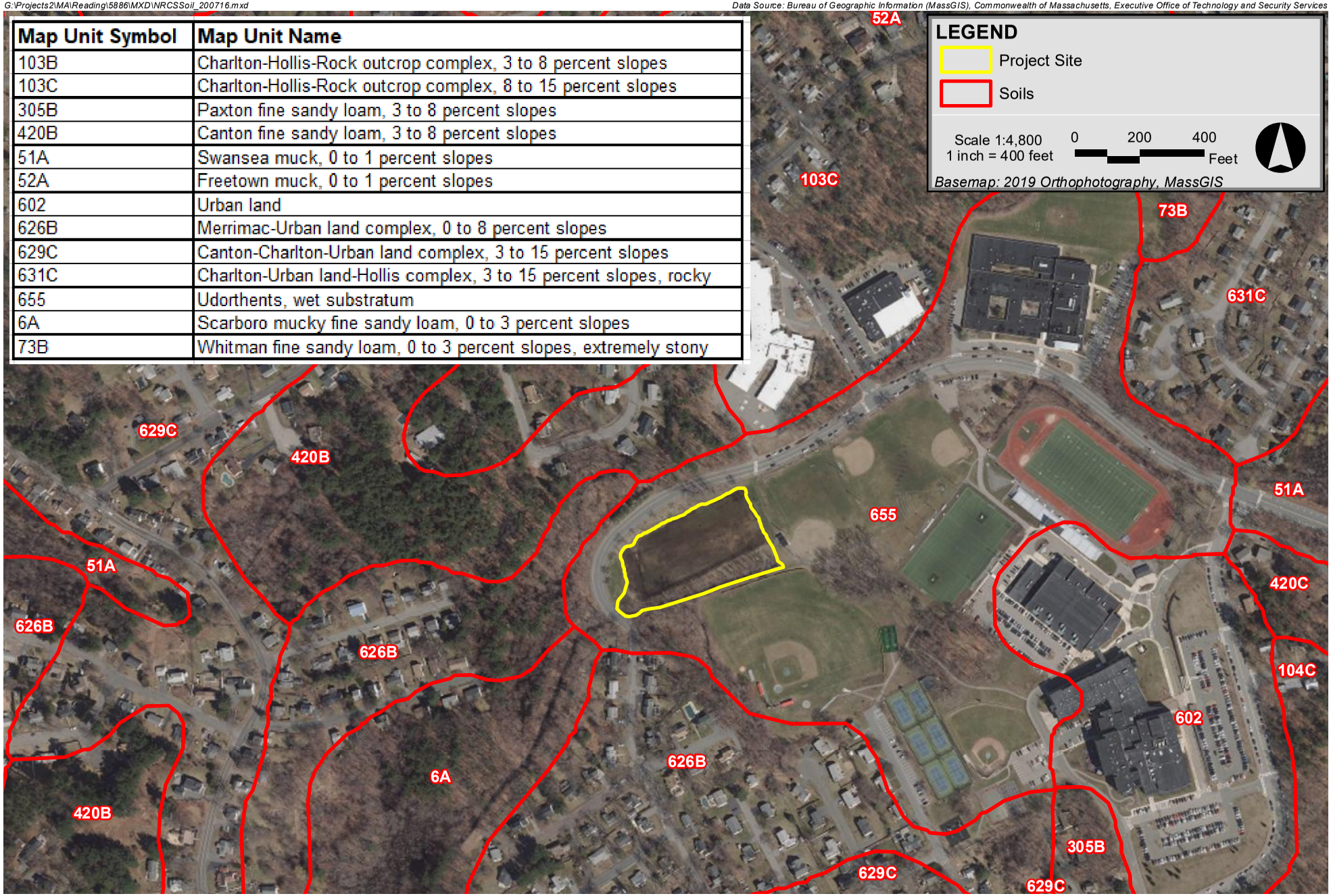
Figure 3

FEMA 100-year Floodplain Map

G:\Projects2\MA\Reading\5886\MXD\NRCSSoil_200716.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Map Unit Symbol	Map Unit Name
103B	Charlton-Hollis-Rock outcrop complex, 3 to 8 percent slopes
103C	Charlton-Hollis-Rock outcrop complex, 8 to 15 percent slopes
305B	Paxton fine sandy loam, 3 to 8 percent slopes
420B	Canton fine sandy loam, 3 to 8 percent slopes
51A	Swansea muck, 0 to 1 percent slopes
52A	Freetown muck, 0 to 1 percent slopes
602	Urban land
626B	Merrimac-Urban land complex, 0 to 8 percent slopes
629C	Canton-Charlton-Urban land complex, 3 to 15 percent slopes
631C	Charlton-Urban land-Hollis complex, 3 to 15 percent slopes, rocky
655	Udorthents, wet substratum
6A	Scarboro mucky fine sandy loam, 0 to 3 percent slopes
73B	Whitman fine sandy loam, 0 to 3 percent slopes, extremely stony



Castine Field – Birch Meadow Park Reading, MA

Epsilon Associates Inc.

Figure 4
NRCS Soil Map

Attachment B

Site Photographs

Photo 1: View southwest from northeast corner of the field. Wetland vegetation is obvious within the northern perimeter swale.

Photo 2: View southeast of Castine Field from the northern perimeter. Wetland vegetation is present within the northern perimeter swale.

Photo 3: View of culvert outlet located in the northwest corner of the Study Area. Wetland vegetation is obvious from this view.

Photo 4: View of culvert outlet located in the southwest corner of the Study Area. Wetland vegetation is obvious from this view.

Photo 5: View northeast from the southwest corner of the field. Wetland vegetation is obvious in this corner of the field.

Photo 6: View of the northeast corner of the field. Wetland vegetation is obvious in this corner of the field

Photo 7: View west from the eastern perimeter of the field. Arrow pointing to shovel located in observation test pit.

Photo 8: View northwest from southern perimeter of the field. Lawn mower tire ruts were observed within the southern perimeter swale.

Photo 9: View of soil profile from augured observation pit #1. This pit was located along the south central perimeter of the field. Hydric soil indicators were observed within 12″ of the soil surface and the water table was measured at 13″ below the soil surface.

Photo 10: View of soil profile from augured observation pit #2. This pit was located towards the center of the field. Hydric soil indicators were observed within 12″ of the soil surface and the water table was measured at 16″ below the soil surface.

Photo 11: View of soil profile from augured observation pit #3. This pit was located towards the center of the field. Hydric soil indicators were observed within 12″ of the soil surface and the water table was measured at 14″ below the soil surface.

Photo 12: View of soil profile from augured observation pit #4. This pit was located along the north central perimeter of the field. Hydric soil indicators were observed within 12″ of the soil surface and the water table was measured at 16″ below the soil surface.

Photo 13: View of A-horizon from soil observation pit #7 located in the east central portion of the field.

Photo 14: Soil observation pit #7. Standing water was observed at 16″ below the soil surface at this location. Hydric soil indicators were present within the upper 12″ of mineral soil.

Photo 15: View of upland soil observation plot located along eastern slope above Castine Field.

Photo 16: View of material augured at depths between 21 and 27 inches..

Photo 17: Aberjona River at culvert outlet near southeast corner of Castine Field.

Photo 18: Typical view of Aberjona River located south of Castine Field.

Attachment C

U.S. Army Corps of Engineers Wetland Determination Data Forms

WETLAND DELINEATION DATA FORM - Northcentral and Northeast Region

Upland Plot

Project/Site: **Castine Field - Birch Meadow Park** City/County: **Reading/Middlesex** Sampling Date: **7/8/2020**

Applicant/Owner: **Activitas Inc.** State: **MA** Sampling Point: **Upland**

Investigator(s): **Epsilon (MK)** Section, Township, Range: **N/A**

Landform (hillslope, terrace, etc.): **Slope** Local relief (concave, convex, none): **slope** Slope (%): **0-5**

Subregion (LRR or MLRA): **LRR R** Lat: **42.536501** Long: **-71.113351** Datum: **NAD83**

Soil Map Unit Name: **Udorthents, wet substratum** NWI classification: **N/A**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No **X** (If no, explain in Remarks.)

Are Vegetation **X**, Soil **X**, or Hydrology **X** significantly disturbed? Are "Normal Circumstances" present? Yes ____ No **X**

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No **X**	**Within a Wetland?** **Yes** ____ **No** **X**
Wetland Hydrology Present?	Yes ____	No **X**	If yes, optional Wetland Site ID: ____

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

The Northeast drought region of Massachusetts was in a Level 2 - Significant Drought at the time of the site visit. The sampling point is located in an area that is routinely mowed and soils are presumed to have been previously disturbed as part of the park creation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Seconary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No **X**	Depth (inches): ____
Water Table Present?	Yes ____	No **X**	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No **X**	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

See photos in Attachment B. Plot location is identifed on the attached aerial map.

VEGETATION *Upland*

Sampling Point: **Upland**

Common Name	Scientific Name	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30' radius)		% Cover	Species?	Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
		0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
		0	= Total Cover	
Herb Stratum (Plot size: 5' radius)				
1. plaintain	*Plantago rugelii*	10	yes	FAC
2. clover	*Medicago sp.*	30	yes	N/A
3.	*Poa sp.*	5	No	N/A
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		45	= Total Cover	
Woody Vine Stratum (Plot size: 30' radius)				
1.				
2.				
3.				
4.				
		0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤ 3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
See attached photos. Plot locatioon is identifeid on the attached aerial map.

SOIL *Upgradient*

Sampling Point: **Upland**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR2/2	100					lfs	A HTM Horizon
11-15	10YR2/1	100					fsl	Ab Horizon
15-21	2.5Y5/3	100					fs	B1 Horizon
21-27	5Y5/1	95	10YR4/4	5	C	M	fs	Bg Horizon

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M-Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ___ Coast Prairie Redox (A16) (LRR K, L, R)
- ___ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ___ Dark Surface (S7) (LRR K, L)
- ___ Polyvalue Below Surface (S8) (LRR K, L)
- ___ Thin Dark Surface (S9) (LRR K, L)
- ___ Iron-Manganese Masses (F12) (LRR K, L, R)
- ___ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ___ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:

See attached photos. Plot locatoon is identifeid on the attached aerial map.

WETLAND DELINEATION DATA FORM - Northcentral and Northeast Region

Wetland Plot

Project/Site: **Castine Field - Birch Meadow Park** City/County: **Reading/Middlesex** Sampling Date: **7/6/2020**

Applicant/Owner: **Activitas Inc.** State: **MA** Sampling Point: **Wetland**

Investigator(s): **Epsilon (MK)** Section, Township, Range: **N/A**

Landform (hillslope, terrace, etc.): **Depression** Local relief (concave, convex, none): **nearly flat** Slope (%): **0-1**

Subregion (LRR or MLRA): **LRR R** Lat: **42.536441** Long: **-71.11358** Datum: **NAD83**

Soil Map Unit Name: **Udorthents, wet substratum** NWI classification: **N/A**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No **X** (If no, explain in Remarks.)

Are Vegetation **X**, Soil **X**, or Hydrology **X** significantly disturbed? Are "Normal Circumstances" present? Yes ____ No **X**

Are Vegetation **X**, Soil **X**, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes **X**	No ____	**Within a Wetland?** **Yes X** **No** ____
Wetland Hydrology Present?	Yes **X**	No ____	If yes, optional Wetland Site ID: ____

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

The Northeast drought region of Massachusetts was in a Level 2 - Significant Drought at the time of the site visit. The sampling point is located in an area that is routinely mowed and soils are presumed to have been previously disturbed as part of the park creation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

____ Surface Water (A1)	____ Water-Stained Leaves (B9)	____ Surface Soil Cracks (B6)
____ High Water Table (A2)	____ Aquatic Fauna (B13)	____ Drainage Patterns (B10)
____ Saturation (A3)	____ Marl Deposits (B15)	____ Moss Trim Lines (B16)
____ Water Marks (B1)	____ Hydrogen Sulfide Odor (C1)	**X** Dry-Season Water Table (C2)
____ Sediment Deposits (B2)	**X** Oxidized Rhizospheres on Living Roots (C3)	____ Crayfish Burrows (C8)
____ Drift Deposits (B3)	____ Presence of Reduced Iron (C4)	**X** Saturation Visible on Aerial Imagery (C9)
____ Algal Mat or Crust (B4)	____ Recent Iron Reduction in Tilled Soils (C6)	____ Stunted or Stressed Plants (D1)
____ Iron Deposits (B5)	____ Thin Muck Surface (C7)	____ Geomorphic Position (D2)
X Inundation Visible on Aerial Imagery (B7)	____ Other (Explain in Remarks)	____ Shallow Aquitard (D3)
____ Sparsely Vegetated Concave Surface (B8)		____ Microtopographic Relief (D4)
		____ FAC-Neutral Test (D5)

Seconary Indicators (minimum of two required)

Field Observations:

Surface Water Present?	Yes ____	No **X**	Depth (inches): ____
Water Table Present?	Yes **X**	No ____	Depth (inches): 16
Saturation Present? (includes capillary fringe)	Yes **X**	No ____	Depth (inches): 13

Wetland Hydrology Present? **Yes X** **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

See photos in Attachment B. Plot location is identifed on the attached aerial map.

VEGETATION *Upland*

Sampling Point: **Wetland**

Common Name	Scientific Name	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30' radius)		% Cover	Species?	Status
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2.				
3.				
4.				
5.				
6.				
7.				
		0	= Total Cover	
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1. plaintain	*Plantago rugelii*	10	yes	FAC
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3.	*Poa sp.*	5	No	N/A
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		45	= Total Cover	
Woody Vine Stratum (Plot size: 30' radius)				
1.				
2.				
3.				
4.				
		0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

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Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
See attached photos. Plot locatioon is identifeid on the attached aerial map.

SOIL *Upgradient*

Sampling Point: **Wetland**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-0								Oi - Slightly decompossed organic matter
0-6	10YR2/1	100					fsl	A Horizon with Oxidized rhizospheres
6-12	2.5Y4/2	70	10YR4/4	30	C	M	s	Bg1 gravelly fine to medium sand
12-18	5Y5/1	100	10YR4/4	5	C	M	fs	Bg2

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M-Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ___ Coast Prairie Redox (A16) (LRR K, L, R)
- ___ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ___ Dark Surface (S7) (LRR K, L)
- ___ Polyvalue Below Surface (S8) (LRR K, L)
- ___ Thin Dark Surface (S9) (LRR K, L)
- ___ Iron-Manganese Masses (F12) (LRR K, L, R)
- ___ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ___ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

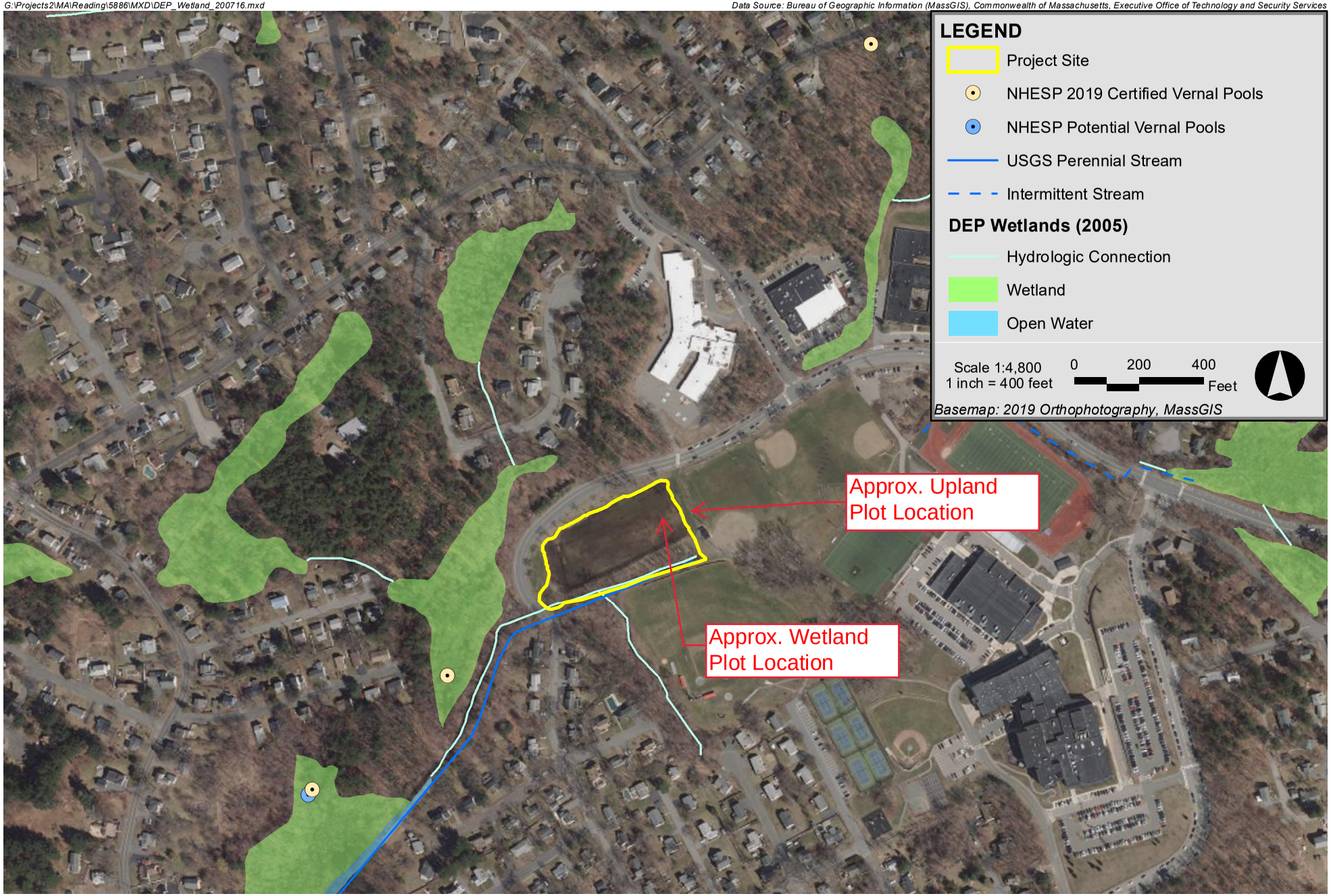
Hydric Soil Present? **Yes** X **No** ___

Remarks:

See attached photos. Plot locatoon is identifeid on the attached aerial map. Bg1 horizon had subangular gravel with diameters ranging between 0-4". This horizon was very dense with redoximorphic accumulation.

G:\Projects2\MA\Reading\5886\MXD\DEP_Wetland_200716.mxd

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Castine Field – Birch Meadow Park Reading, MA

Epsilon Associates Inc.

Figure 2

MassDEP Wetland Map (including CVP & PVP data)

Appendix E – Stormwater Report

Bound Separately