



November 9, 2022

Town of Deerfield Conservation Commission  
8 Conway Street  
South Deerfield, MA 01373

RE: **Revised Notice of Intent**  
All States Materials Group Haul Road Improvements  
901 River Road, Deerfield, MA 01342

Dear Commission Members:

On behalf of All States Materials Group (ASMG), and in accordance with the Massachusetts Wetland Protection Act (WPA) M.G.L c131, s40, Kleinfelder has prepared this revised Notice of Intent (NOI) to include design revisions and information as a result of the 3<sup>rd</sup> party review of their application to widen an existing gravel road within their 212-acre facility in South Deerfield, MA.

The road widening will also include replacement of the culvert under the existing road, modification of the existing stormwater management system to accommodate the wider road, and construction of a pad site. A portion of the work is within the following resources regulated under the WPA: 100-Foot Buffer to Bordering Vegetated Wetland, Bank, Land Under Water Bodies and Waterways, and Riverfront Area.

Attached is the updated NOI Form 3 with supplemental documentation included. This revised application will be transmitted to the Department of Environmental Protection Central Regional Office once all aspects of the design are agreed upon.

We respectfully request the Commission include this project on the agenda for the next available public hearing. Please contact ASMG or Samantha Pretzel (Project Manager) at 304-288-8978 or [spretzel@kleinfelder.com](mailto:spretzel@kleinfelder.com) if you have any questions regarding this project. Thank you for your consideration on this matter.

Respectfully yours,

A handwritten signature in black ink that reads "Emma Mrowka". The signature is written in a cursive style.

Emma Mrowka  
Kleinfelder

cc: Daniel Hartman, All States Materials Group



# ALL STATES MATERIALS GROUP HAUL ROAD IMPROVEMENT PROJECT

901 River Road  
Deerfield, MA

## NOTICE OF INTENT

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## NOI FORMS

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

**WPA Form 3 – Notice of Intent**

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

Provided by MassDEP:

|                             |
|-----------------------------|
| MassDEP File Number         |
| Document Transaction Number |
| Deerfield                   |
| City/Town                   |

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



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

**A. General Information**

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

|                              |                       |              |
|------------------------------|-----------------------|--------------|
| <u>901 River Road</u>        | <u>Deerfield</u>      | <u>01342</u> |
| a. Street Address            | b. City/Town          | c. Zip Code  |
| Latitude and Longitude:      |                       |              |
| <u>42.566299</u>             | <u>-72.580223</u>     |              |
| d. Latitude                  | e. Longitude          |              |
| <u>21, 7</u>                 | <u>1, 14</u>          |              |
| f. Assessors Map/Plat Number | g. Parcel /Lot Number |              |

2. Applicant:

|                                   |                          |                  |
|-----------------------------------|--------------------------|------------------|
| <u>Daniel</u>                     | <u>Hartman</u>           |                  |
| a. First Name                     | b. Last Name             |                  |
| <u>All States Materials Group</u> |                          |                  |
| c. Organization                   |                          |                  |
| <u>901 River Road</u>             |                          |                  |
| d. Street Address                 |                          |                  |
| <u>Deerfield</u>                  | <u>MA</u>                | <u>01342</u>     |
| e. City/Town                      | f. State                 | g. Zip Code      |
| <u>(413) 843-3240</u>             | <u>dhartman@asmg.com</u> |                  |
| h. Phone Number                   | i. Fax Number            | j. Email Address |

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

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

4. Representative (if any):

|   |                                |                  |
|---|--------------------------------|------------------|
| <u>Emma</u>   | <u>Mrowka</u>                  |                  |
| a. First Name                                       | b. Last Name                   |                  |
| <u>Kleinfelder</u>                                  |                                |                  |
| c. Company  |                                |                  |
| <u>300 Westage Business Center Drive, Suite 210</u> |                                |                  |
| d. Street Address                                   |                                |                  |
| <u>Fishkill</u>                                     | <u>NY</u>                      | <u>12524</u>     |
| e. City/Town  | f. State                       | g. Zip Code      |
| <u>(845) 231 2519</u>                               | <u>emrowka@kleinfelder.com</u> |                  |
| h. Phone Number                                     | i. Fax Number                  | j. Email address |

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

|                   |                   |                       |
|-------------------|-------------------|-----------------------|
| <u>\$2,175</u>    | <u>\$1,075</u>    | <u>\$1,100</u>        |
| a. Total Fee Paid | b. State Fee Paid | c. City/Town Fee Paid |



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:        |
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| City/Town                   |

## A. General Information (continued)

### 6. General Project Description:

An existing gravel road requires improvement in order to meet Mine Safety and Health Administration requirements for heavy vehicle traffic. The proposed project would widen the road, replace the existing stream crossing, and construct a pad site to be utilized for a parking area. See attached Project Narrative for additional details.

### 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:

|           |                                       |
|-----------|---------------------------------------|
| Franklin  |                                       |
| a. County | b. Certificate # (if registered land) |
| 5069      | 235, 238                              |
| c. Book   | d. Page Number                        |

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

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

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





**WPA Form 3 – Notice of Intent**

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

Provided by MassDEP:

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Deerfield

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City/Town

**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.

| <u>Resource Area</u>                              | <u>Size of Proposed Alteration</u>                             | <u>Proposed Replacement (if any)</u> |
|---|--|--------------------------------------|
| a. <input type="checkbox"/> Designated Port Areas | Indicate size under Land Under the Ocean, below                |                                      |
| b. <input type="checkbox"/> Land Under the Ocean  | _____  |                                      |
|   | 1. square feet   |                                      |
|   | _____  |                                      |
|   | 2. cubic yards dredged   |                                      |
| c. <input type="checkbox"/> Barrier Beach         | Indicate size under Coastal Beaches and/or Coastal Dunes below |                                      |
| d. <input type="checkbox"/> Coastal Beaches       | _____  | _____                                |
|   | 1. square feet   | 2. cubic yards beach nourishment     |
| e. <input type="checkbox"/> Coastal Dunes         | _____  | _____                                |
|   | 1. square feet   | 2. cubic yards dune nourishment      |

|   | <u>Size of Proposed Alteration</u>  | <u>Proposed Replacement (if any)</u>   |
|---|---|--|
| f. <input type="checkbox"/> Coastal Banks                         | _____   |  |
|   | 1. linear feet  |  |
| g. <input type="checkbox"/> Rocky Intertidal Shores               | _____   |  |
|   | 1. square feet  |  |
| h. <input type="checkbox"/> Salt Marshes                          | _____   | _____                                  |
|   | 1. square feet  | 2. sq ft restoration, rehab., creation |
| i. <input type="checkbox"/> Land Under Salt Ponds                 | _____   |  |
|   | 1. square feet  |  |
|   | _____   |  |
|   | 2. cubic yards dredged  |  |
| j. <input type="checkbox"/> Land Containing Shellfish             | _____   |  |
|   | 1. square feet  |  |
| k. <input type="checkbox"/> 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. <input type="checkbox"/> 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

|                                   |   |
|-----------------------------------|---|
| _____                             | 1   |
| a. number of new stream crossings | b. number of replacement stream crossings |



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Deerfield

City/Town

## 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](http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm).

- a.  Yes    No      **If yes, include proof of mailing or hand delivery of NOI to:**

15th edition, August  
2021

**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

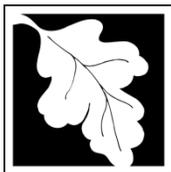
2.  Assessor's Map or right-of-way plan of site

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/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.



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

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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:

North Shore - Hull to New Hampshire border:

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](mailto:dmf.envreview-south@mass.gov)

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



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

**WPA Form 3 – Notice of Intent**

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Deerfield

City/Town

**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

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- 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.



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

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City/Town

## 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.

ASMG Haul Road Replacement

a. Plan Title

Kurt Violette

b. Prepared By

11/09/2022

d. Final Revision Date

c. Signed and Stamped by

1" = 40'

e. Scale

f. Additional Plan or Document Title

g. Date

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

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

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

8.  Attach NOI Wetland Fee Transmittal Form

9.  Attach Stormwater Report, if needed.

## 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:

13142

2. Municipal Check Number

13143

4. State Check Number

Kleinfelder Office Checking

6. Payor name on check: First Name

May 12, 2022

3. Check date

May 12, 2022

5. Check date

7. Payor name on check: Last Name



Massachusetts Department of Environmental Protection  
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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.

|   |  |            |
|---|--|------------|
|  | Daniel Hartman, PE   | 11/09/2022 |
| 1. Signature of Applicant   |  | 2. Date    |
| <hr/>   |  |            |
| 3. Signature of Property Owner (if different)                                     |  | 4. Date    |
|   |  | 11/09/2022 |
| 5. Signature of Representative (if any)   |  | 6. Date    |

### For Conservation Commission:

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

### For MassDEP:

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

### Other:

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

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



**Massachusetts Department of Environmental Protection**  
 Bureau of Resource Protection - Wetlands  
**NOI Wetland Fee Transmittal Form**  
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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



**A. Applicant Information**

1. Location of Project:

901 River Road Deerfield  
 a. Street Address b. City/Town  
 13143 \$1,075  
 c. Check number d. Fee amount

2. Applicant Mailing Address:

Daniel Hartman  
 a. First Name b. Last Name  
 All States Materials Group  
 c. Organization  
 901 River Road  
 d. Mailing Address  
 Deerfield MA 01342  
 e. City/Town f. State g. Zip Code  
 (413) 712-0759 dhartman@asmg.com  
 h. Phone Number i. Fax Number j. Email Address

3. Property Owner (if different):

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

**B. Fees**

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

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

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

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

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

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

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

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



**Massachusetts Department of Environmental Protection**  
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 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

**B. Fees** (continued)

| Step 1/Type of Activity          | Step 2/Number of Activities | Step 3/Individual Activity Fee | Step 4/Subtotal Activity Fee                           |
|----------------------------------|-----------------------------|--------------------------------|--|
| Cetegory 4 (A)                   | 1                           | \$1,450                        | \$2,175  |
| _____                            | _____                       | _____                          | _____  |
| _____                            | _____                       | _____                          | _____  |
| _____                            | _____                       | _____                          | _____  |
| _____                            | _____                       | _____                          | _____  |
| _____                            | _____                       | _____                          | _____  |
| _____                            | _____                       | _____                          | _____  |
| _____                            | _____                       | _____                          | _____  |
| <b>Step 5/Total Project Fee:</b> |                             |                                | <u>\$2,175</u>   |
| <b>Step 6/Fee Payments:</b>      |                             |                                |  |
| Total Project Fee:               |                             |                                | <u>\$2,175</u><br>a. Total Fee from Step 5             |
| State share of filing Fee:       |                             |                                | <u>\$1,075</u><br>b. 1/2 Total Fee <b>less</b> \$12.50 |
| City/Town share of filing Fee:   |                             |                                | <u>\$1,100</u><br>c. 1/2 Total Fee <b>plus</b> \$12.50 |

**C. Submittal Requirements**

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

Department of Environmental Protection  
 Box 4062  
 Boston, MA 02211

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

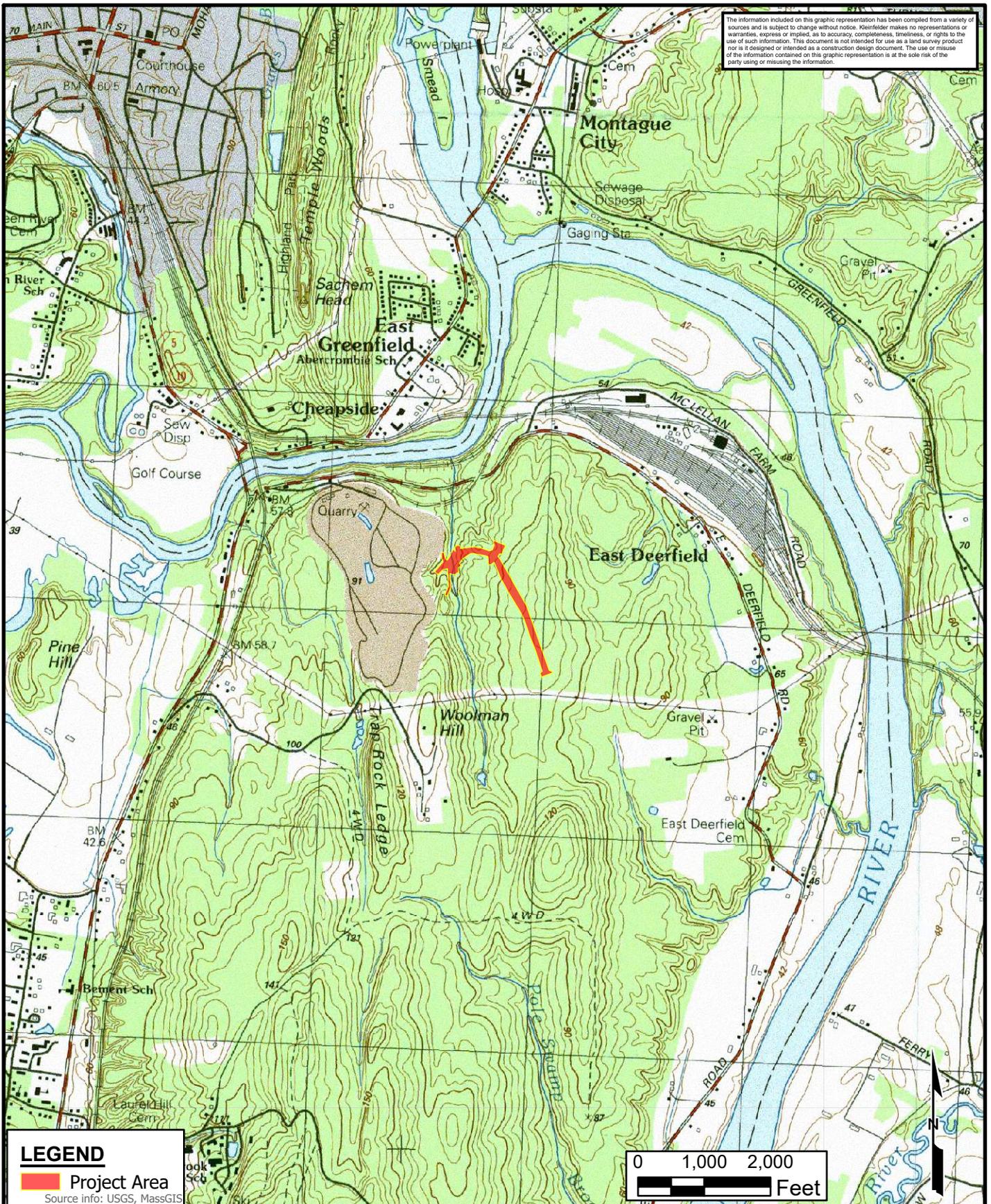
**To MassDEP Regional Office** (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)



## NOI FIGURES

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Date: 4/29/2022 User: ADAmario Path: \\azrgislabrp01\GIS\_Projects\Client\All\_States\_Materials\River\_Rd\_Project\MAPS\All\_States\_Materials\_NOI\_Figures.aprx

**LEGEND**  
 Project Area  
 Source info: USGS, MassGIS

0 1,000 2,000  
 Feet



|             |                                       |
|-------------|---------------------------------------|
| PROJECT NO. | 20221383.001A                         |
| CREATED:    | 4/29/2022                             |
| CREATED BY: | ADAmario                              |
| CHECKED BY: | EMrowka                               |
| FILE NAME:  | All_States_Materials_NOI_Figures.aprx |

**FIGURE 1**  
**USGS Locus Map**

All States Materials Group  
 Haul Road Replacement  
 901 River Road  
 Deerfield, Massachusetts

FIGURE  
**1**

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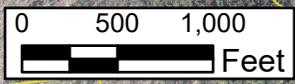
Date: 4/29/2022 User: ADAmario Path: \\azrgis\slorp01\GIS\_Projects\Client\All\_States\_Materials\River\_Rd\_Project\MAPS\All\_States\_Materials\_NOI\_Figures.aprx



**LEGEND**

- Project Area
- Tax Parcels

Source info: MassGIS



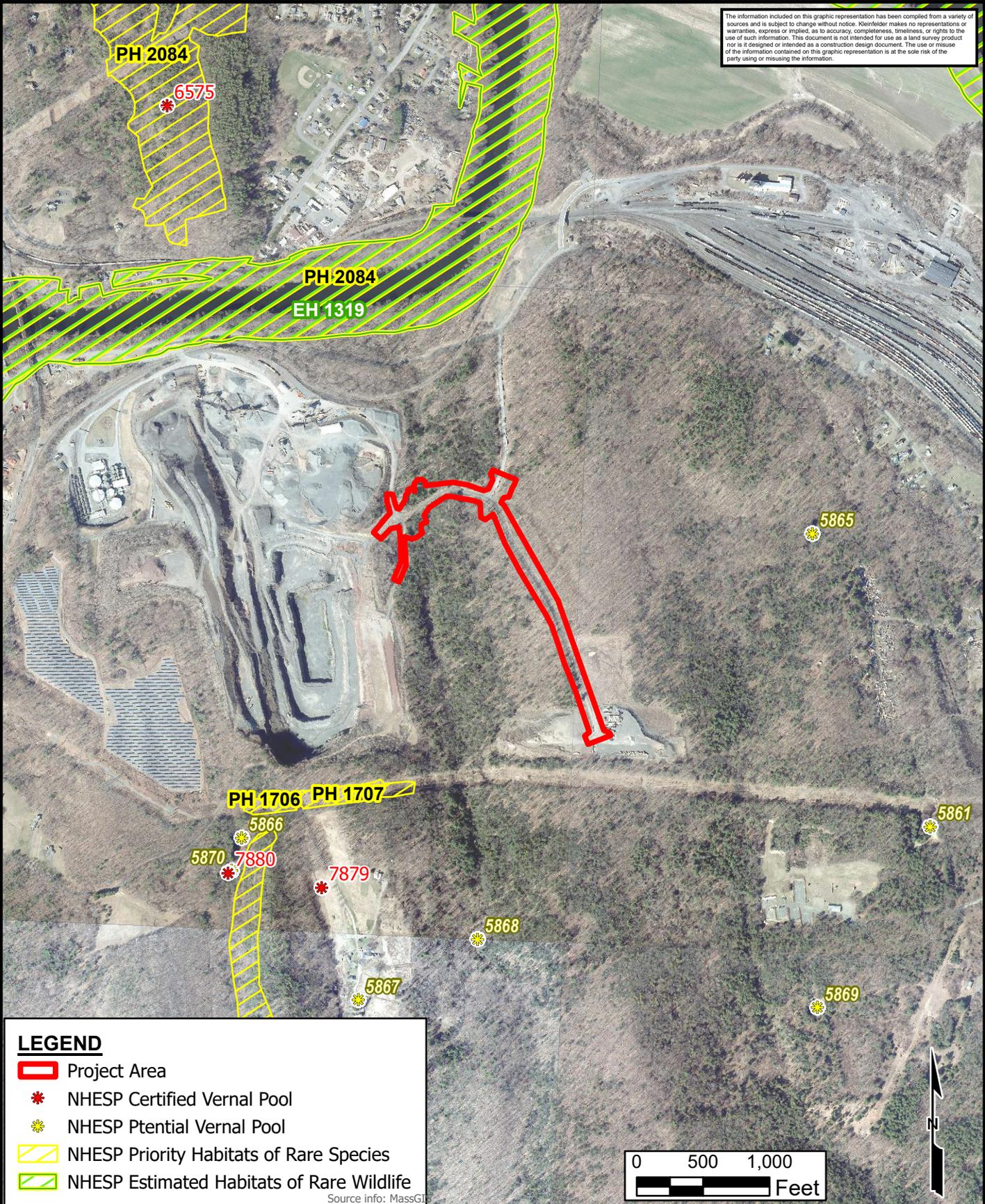
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| PROJECT NO. | 20221383.001A                         |
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| CREATED BY: | ADAmario                              |
| CHECKED BY: | EMrowka                               |
| FILE NAME:  | All_States_Materials_NOI_Figures.aprx |

**FIGURE 2**  
**Aerial Map**

All States Materials Group  
Haul Road Replacement  
901 River Road  
Deerfield, Massachusetts

FIGURE  
**2**

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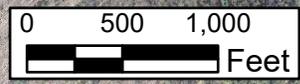
**LEGEND**

-  Project Area
  -  NHESP Certified Vernal Pool
  -  NHESP Pntial Vernal Pool
  -  NHESP Priority Habitats of Rare Species
  -  NHESP Estimated Habitats of Rare Wildlife
- Source info: MassGIS

Date: 4/29/2022 User: ADAmario Path: \\azrgis\slorp01\GIS\_Projects\Client\All\_States\_Materials\River\_Rd\_Project\MAPS\All\_States\_Materials\_NOI\_Figures.aprx



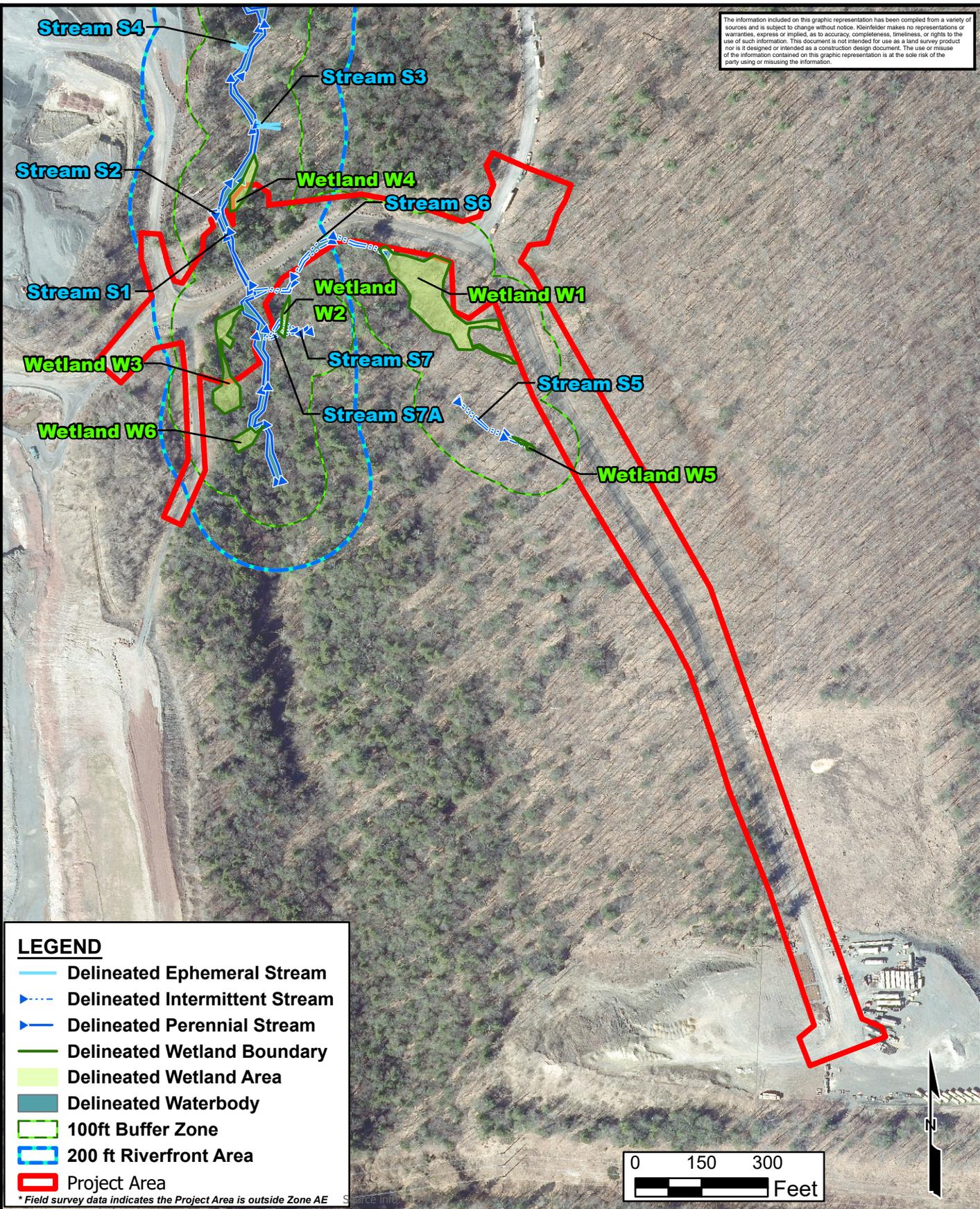
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| PROJECT NO. | 20221383.001A                         |
| CREATED:    | 4/29/2022                             |
| CREATED BY: | ADAmario                              |
| CHECKED BY: | EMrowka                               |
| FILE NAME:  | All_States_Materials_NOI_Figures.aprx |



**FIGURE 3  
NHESP Map**

All States Materials Group  
Haul Road Replacement  
901 River Road  
Deerfield, Massachusetts

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Date: 10/26/2022 User: ADAmario Path: \\azrgisstor01\GIS\_Projects\Client\All\_States\_Materials\River\_Rd\_Project\MAPS\All\_States\_Materials\_NOI\_Figures\_rev1.aprx

**LEGEND**

- Delineated Ephemeral Stream
- - - Delineated Intermittent Stream
- ▶ Delineated Perennial Stream
- Delineated Wetland Boundary
- Delineated Wetland Area
- Delineated Waterbody
- 100ft Buffer Zone
- 200 ft Riverfront Area
- Project Area

\* Field survey data indicates the Project Area is outside Zone AE



|             |  |
|-------------|--|
| PROJECT NO. | 20221383.001A                              |
| CREATED:    | 10/26/2022                                 |
| CREATED BY: | ADAmario                                   |
| CHECKED BY: | EMrowka                                    |
| FILE NAME:  | All_States_Materials_NOI_Figures_rev1.aprx |

**FIGURE 4**  
**Regulated Resources Map**

All States Materials Group  
Haul Road Replacement  
901 River Road  
Deerfield, Massachusetts

FIGURE  
**4**

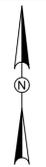


Signed By: \_\_\_\_\_ # \_\_\_\_\_

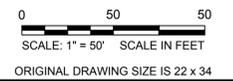
REVISIONS

| REV | DESCRIPTION           | DSN DWN | CHK APP | DATE       |
|-----|-----------------------|---------|---------|------------|
| A   | ISSUED FOR PERMITTING | KRV     | AGB     | 4/29/2022  |
| B   | ISSUED FOR PERMITTING | KRV     | SH      | 10/25/2022 |
| △   | ISSUED FOR PERMITTING | KRV     | SH      | 11/9/2022  |

**ISSUED FOR PERMITTING**



SCALE VERIFICATION  
THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING  
0 1"  
IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY



ISSUE FOR PERMIT (IFP) PLANS

ASMG HAUL ROAD DESIGN  
901 RIVER ROAD  
FRANKLIN COUNTY, MASSACHUSETTS



ALL STATES MATERIALS GROUP  
901 RIVER ROAD  
DEERFIELD, MA 01342

BUFFER ZONE & RESOURCE IMPACTS (PERMANENT)

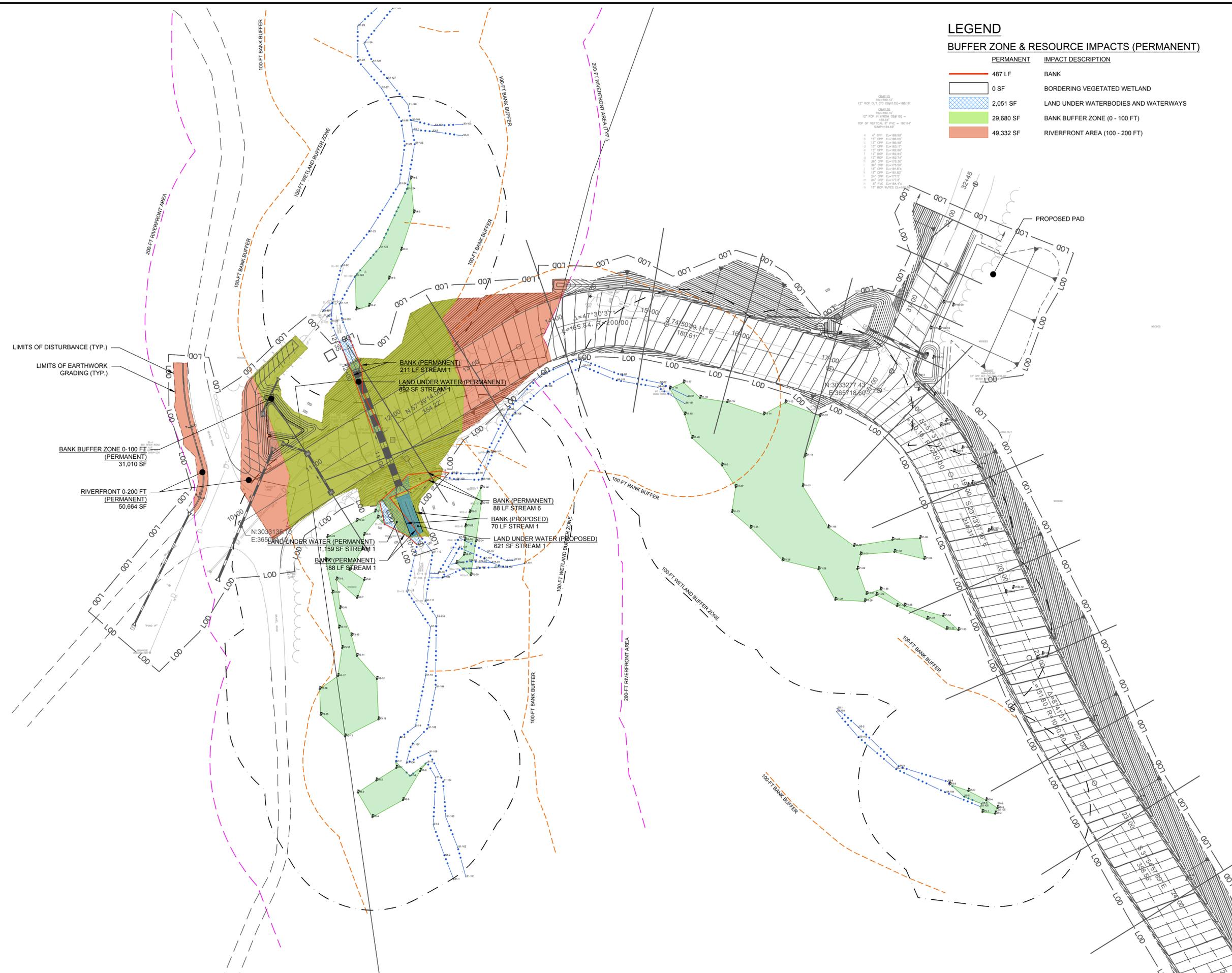
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| PROJECT NO.      | 20221383.001A |
| ISSUE DATE       | 11/09/2022    |
| CURRENT REVISION | C             |
| DESIGNED BY      | KRV           |
| DRAWN BY         | KRV           |
| CHECKED BY       | SH            |
| APPROVED BY      | JW            |

EXHIBIT B

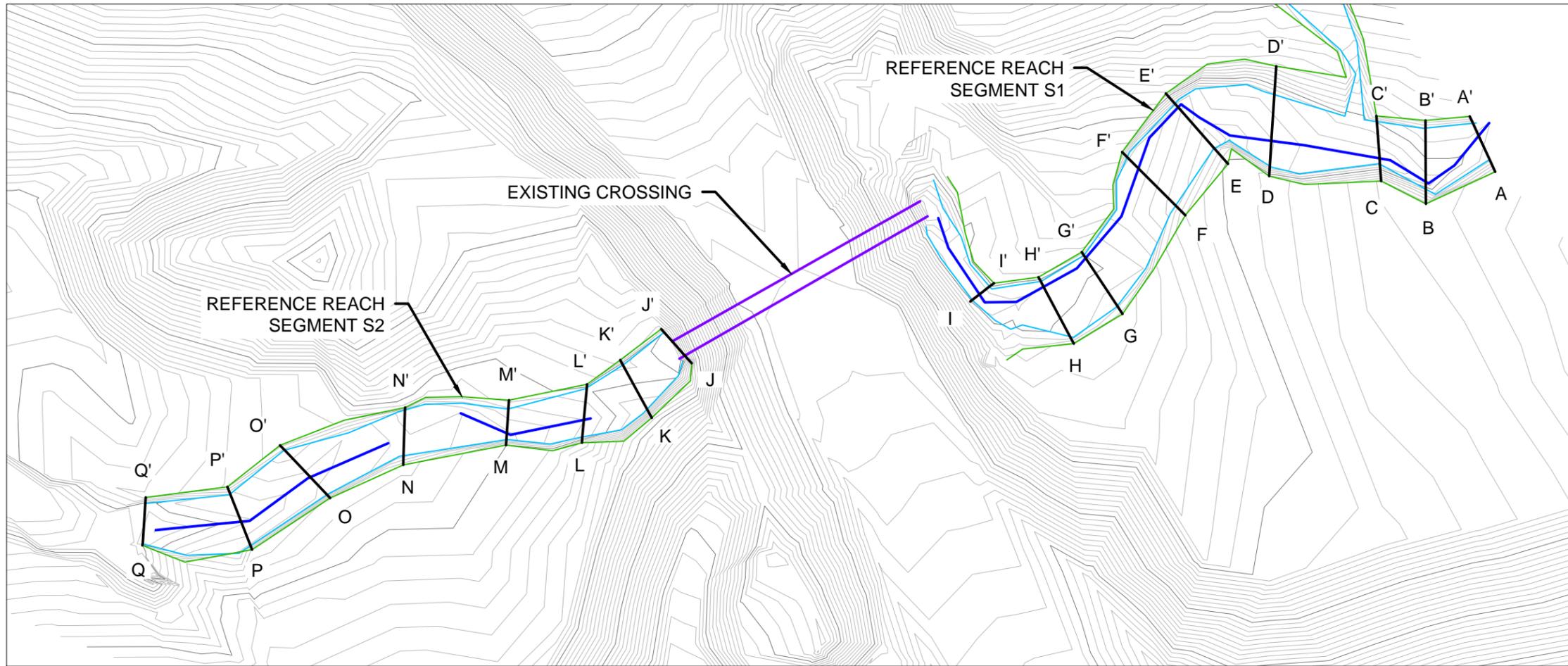
LEGEND  
BUFFER ZONE & RESOURCE IMPACTS (PERMANENT)

| PERMANENT | IMPACT DESCRIPTION                   |
|-----------|--------------------------------------|
| 487 LF    | BANK                                 |
| 0 SF      | BORDERING VEGETATED WETLAND          |
| 2,051 SF  | LAND UNDER WATERBODIES AND WATERWAYS |
| 29,680 SF | BANK BUFFER ZONE (0 - 100 FT)        |
| 49,332 SF | RIVERFRONT AREA (100 - 200 FT)       |

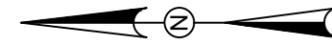
| NO. | DESCRIPTION                           | DATE       |
|-----|---------------------------------------|------------|
| 1   | 12" ROP OUT (TO CENTERLINE) = 188.17' | 11/09/2022 |
| 2   | 12" ROP IN (TO CENTERLINE) = 188.17'  | 11/09/2022 |
| 3   | 12" ROP IN (TO CENTERLINE) = 188.17'  | 11/09/2022 |
| 4   | 12" ROP IN (TO CENTERLINE) = 188.17'  | 11/09/2022 |
| 5   | 12" ROP IN (TO CENTERLINE) = 188.17'  | 11/09/2022 |
| 6   | 12" ROP IN (TO CENTERLINE) = 188.17'  | 11/09/2022 |
| 7   | 12" ROP IN (TO CENTERLINE) = 188.17'  | 11/09/2022 |
| 8   | 12" ROP IN (TO CENTERLINE) = 188.17'  | 11/09/2022 |
| 9   | 12" ROP IN (TO CENTERLINE) = 188.17'  | 11/09/2022 |
| 10  | 12" ROP IN (TO CENTERLINE) = 188.17'  | 11/09/2022 |
| 11  | 12" ROP IN (TO CENTERLINE) = 188.17'  | 11/09/2022 |
| 12  | 12" ROP IN (TO CENTERLINE) = 188.17'  | 11/09/2022 |
| 13  | 12" ROP IN (TO CENTERLINE) = 188.17'  | 11/09/2022 |
| 14  | 12" ROP IN (TO CENTERLINE) = 188.17'  | 11/09/2022 |
| 15  | 12" ROP IN (TO CENTERLINE) = 188.17'  | 11/09/2022 |
| 16  | 12" ROP IN (TO CENTERLINE) = 188.17'  | 11/09/2022 |
| 17  | 12" ROP IN (TO CENTERLINE) = 188.17'  | 11/09/2022 |
| 18  | 12" ROP IN (TO CENTERLINE) = 188.17'  | 11/09/2022 |
| 19  | 12" ROP IN (TO CENTERLINE) = 188.17'  | 11/09/2022 |
| 20  | 12" ROP IN (TO CENTERLINE) = 188.17'  | 11/09/2022 |



CAD FILE: C:\pwworking\kleinfelder\proj\2022\383\_Buffer\_Zone-Resource\_Impacts\_R1.dwg LAYOUT: EXHIBIT B  
 PLOTTED: 11/09/2022 11:52 AM BY: bur.vicente



**PLAN**  
 SCALE: 1"=30'



**LEGEND**

- EXISTING STREAM CENTERLINE
- EXISTING STREAM TOP OF BANK
- EXISTING STREAM TOE OF BANK
- EXISTING CULVERT
- EXISTING MAJOR CONTOURS (5')
- EXISTING MINOR CONTOURS (1')
- CROSS-SECTION LOCATION

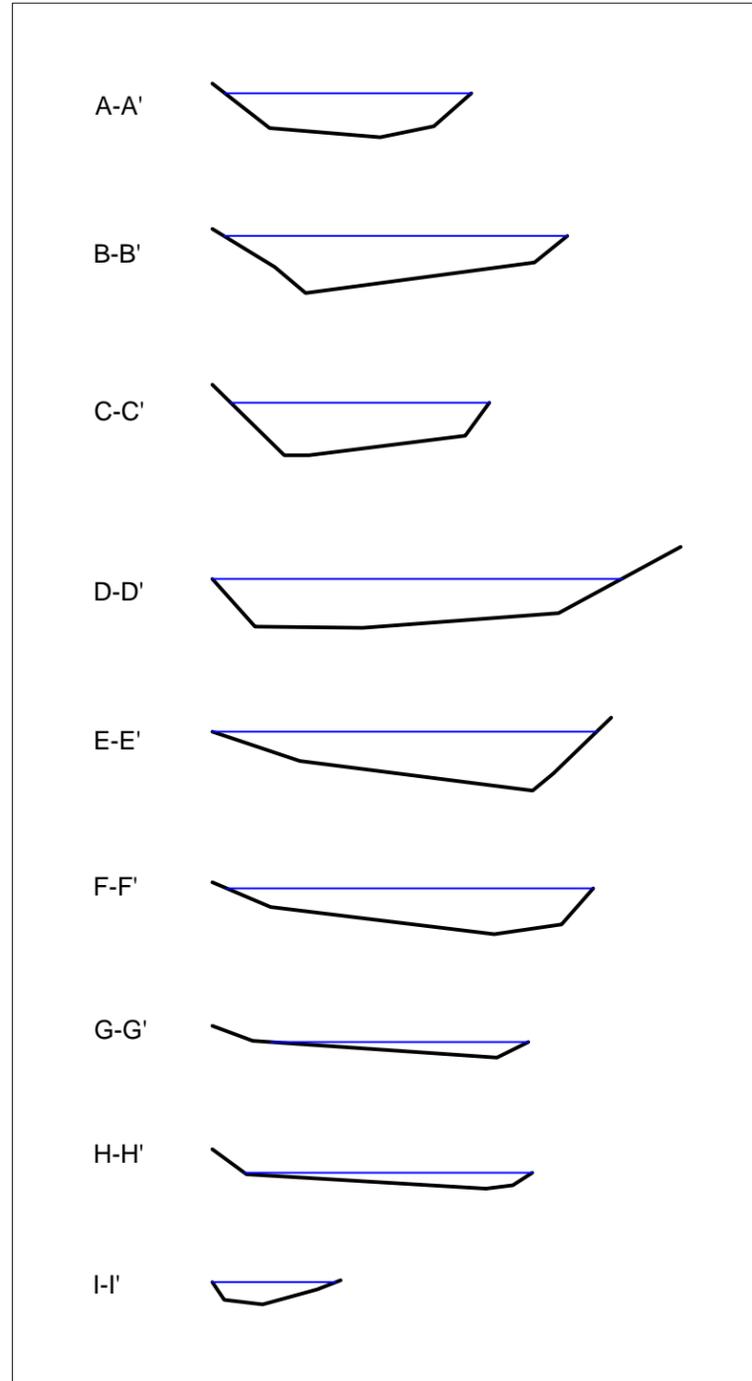


|             |                          |
|-------------|--------------------------|
| PROJECT NO. | 20221383.001A            |
| DRAWN:      | 10/11/2022               |
| DRAWN BY:   | NCD                      |
| CHECKED BY: | KRV                      |
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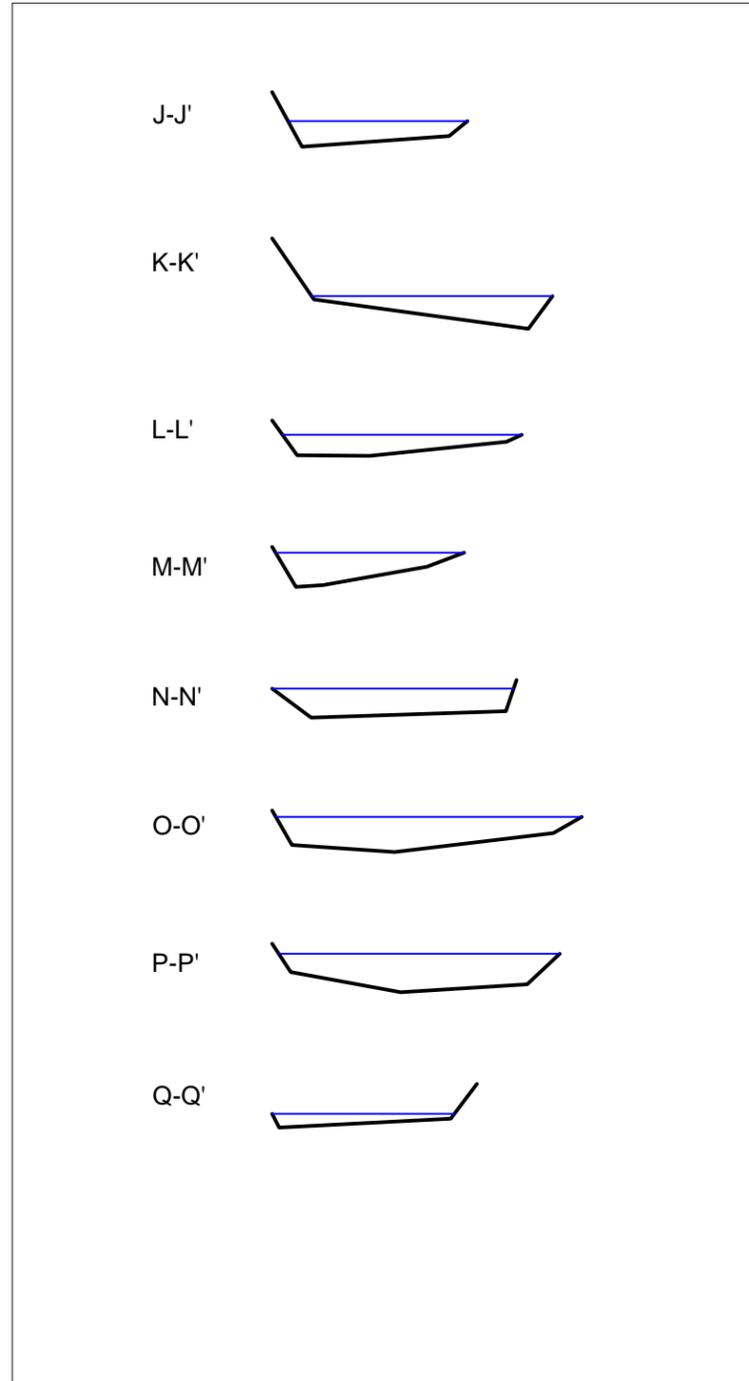
|  |
|--|
| <b>Reference Reach<br/>                 Plan</b>                                     |
| Haul Road Design<br>All States Material Group<br>901 River Rd<br>Deerfield, MA 01342 |

|        |   |
|--------|---|
| FIGURE | - |
|--------|---|

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**SEGMENT S1 CROSS-SECTIONS**  
SCALE: 1"=10'



**SEGMENT S2 CROSS-SECTIONS**  
SCALE: 1"=10'

**LEGEND**

- EXISTING STREAM BED
- BANKFULL WIDTH

| CROSS-SECTION | DISTANCE FROM CROSSING (FT) | BANKFULL WIDTH (FT) |
|---------------|-----------------------------|---------------------|
| A-A'          | -170                        | 13.49               |
| B-B'          | -153                        | 18.78               |
| C-C'          | -141                        | 14.14               |
| D-D'          | -115                        | 22.39               |
| E-E'          | -91                         | 21.02               |
| F-F'          | -74                         | 20.04               |
| G-G'          | -49                         | 14.05               |
| H-H'          | -37                         | 15.74               |
| I-I'          | -20                         | 6.76                |
| J-J'          | 0                           | 9.81                |
| K-K'          | 14                          | 13.19               |
| L-L'          | 28                          | 13.09               |
| M-M'          | 46                          | 10.31               |
| N-N'          | 72                          | 13.2                |
| O-O'          | 96                          | 16.73               |
| P-P'          | 116                         | 15.36               |
| Q-Q'          | 139                         | 9.96                |
| AVERAGE       |                             | 14.59               |

**BANKFULL WIDTH TABLE**

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|             |                          |
|-------------|--------------------------|
| PROJECT NO. | 20221383.001A            |
| DRAWN:      | 10/11/2022               |
| DRAWN BY:   | NCD                      |
| CHECKED BY: | KRV                      |
| FILE NAME:  | ASMG_221383_Bankfull.dwg |

|  |             |
|--|-------------|
| Reference Reach<br>Cross-Sections  | FIGURE<br>- |
| Haul Road Design<br>All States Material Group<br>901 River Rd<br>Deerfield, MA 01342 |             |



ATTACHMENT A  
NOI Narrative

---



## **Attachment A – Notice of Intent Narrative**

This Notice of Intent (NOI) is filed pursuant to the Massachusetts Wetlands Protection Act (WPA) (MGL Chapter 131, Section 40) and its implementing regulations (310 CMR 10.00). This narrative presents an introduction to the Haul Road Replacement Project (Project), proposed by the All States Materials Group (ASMG) in Deerfield, MA. This narrative includes a discussion of regulated resource areas associated with the Project, a description of proposed work, proposed construction mitigation measures, and a discussion of how the Project meets the performance standards of the WPA regulations. Refer to the accompanying Project plans, included as Attachment B to the NOI, for a plan layout and details of the Project components. In addition, Figures 1 through 5 present the Project Area and associated regulated resource mapping.

### **Introduction**

All States Materials Group (ASMG) proposes to improve an existing gravel haul road within their property accessed at 901 River Road in Deerfield, Massachusetts. The improved haul road has been designed to meet Mine Safety and Health Administration (MSHA) requirements to provide the operational safety, as well as the stormwater control and quality. Improvements primarily include widening the road, and replacing the existing double culvert through which a perennial tributary to the Deerfield River flows. Additional improvements incidental to the road widening include modifications to the existing stormwater system to accommodate the wider road and construction of a pad site to be used for vehicle parking.

Proposed work for the Project would occur within the following WPA regulated resources: 100-Foot Buffer to Bordering Vegetated Wetland (BVW), Bank, Land Under Water Bodies and Waterways (LUWW), and Riverfront Area. The Project meets or exceeds all performance standards under the WPA for these resources. The project is also designed to be compliant with Massachusetts Stream Crossing Standards presented in Section 310 CMR 10.54(4) of the WPA.

### **Site Description**

ASMG owns and operates a 212-acre facility on two parcels of land utilized by two businesses: Trew Stone, LLC operates a rock quarry and two hot mix asphalt plants; and All States Asphalt, LLC operates an above ground storage tank farm. The Project area within this facility is typically heavily disturbed by industrial activities. Work proposed under the scope of this NOI would occur on the east side of the existing facilities, within the center of two parcels. The west side of the Project area is bounded by the existing ASMG facility. The north, south, and east sides of the Project area are bounded by deciduous forest. Refer to Figures 1 and 2 for a USGS map and aerial map of the Project area. The existing gravel haul road, known as Lenny Lane, slopes down from east to west, with elevations ranging from 187 to 350 ft. Two gravel roads intersect the haul road with two stormwater ponds and associated drainage pipes and culverts located adjacent to the haul road. An unnamed tributary to the Deerfield River flows north, under the haul road and through a double barrel culvert. Two forested BVWs drain to the tributary south of the culvert. Two forested BVWs are mapped to the south of the haul road, draining to intermittent streams that flow into the unnamed tributary to the Deerfield River.

According to the most recently available data provided by the Massachusetts Natural Heritage and Endangered Species Program (NHESP), no Priority Habitats for Rare Species or Estimated Habitats for Rare Wildlife are mapped in the vicinity of the Project area. No certified or potential vernal pools have been mapped in the Project area. The Project area is not located within or near an Area of Critical Environmental Concern. According to the Massachusetts Department of Environmental Protection (MassDEP), the Project area is not located within an Outstanding Resource Water area and is not designated as a Wellhead Protection Area.

## **Regulated Resource Areas**

Aquatic resources in the Project area were identified and delineated by environmental scientists from Kleinfelder on October 28, 2021 and August 23, 2022, in accordance with methods developed by the MassDEP and U.S. Army Corps of Engineers (USACE). A wetland delineation memo and data forms are included in Attachment C. Resource areas are shown on Figure 4 and in the accompanying Project plans in Attachment B.

The following resource areas have been identified within the Project area:

- Bordering Vegetated Wetland (BVW)
- Land Under Waterbodies and Waterways (LUWW)
- Inland Bank
- Riverfront Area

The Project area is also located within the 100-foot Buffer Zone of BVW and Inland Bank. A 100-foot Buffer Zone extends horizontally outward from the regulated wetland resource areas, as defined in 310 CMR 10.02(2)(b). The Buffer Zone is not considered a resource area under the WPA, but areas within the Buffer Zone are under the jurisdiction of the issuing authority.

### **Bordering Vegetated Wetland**

Six BVWs were delineated in the Project Area but will not be impacted by the Project; however, Project activities will occur within the 100-foot Buffer Zone of BVW.

Wetland W1 is located south of the haul road. The wetland is fed by hillside seeps and runoff from the haul road. The wetland discharges to intermittent Stream S6 which flows into the unnamed tributary of the Deerfield River (Stream S1) immediately south of the culvert outlet. Dominant vegetation within Wetland W1 includes red maple (*Acer rubrum*), red oak (*Quercus rubra*), American hornbeam (*Carpinus caroliniana*), American elm (*Ulmus americana*), and interrupted fern (*Osmunda claytoniana*). A 100-foot Buffer Zone extends horizontally outward from the Wetland W1 boundary, and it contains woodlands and the existing haul road.

Wetland W2 is located south of the haul road. The wetland is a small, forested depression on an old forest road. The wetland drains to a braided intermittent stream (Stream S7) which flows into the unnamed tributary to the Deerfield River (Stream S1). Dominant vegetation within the wetland includes eastern hemlock, northern spicebush (*Lindera benzoin*), and sensitive fern (*Osmunda sensibilis*). A 100-foot Buffer Zone extends horizontally outward from the Wetland W2 boundary, and it contains woodlands, a portion of Streams S1, S6, S7, and S7A, and the existing haul road.

Wetland W3 is located south of the haul road. The wetland is a forested depression adjacent to Stream S1 and drains to Stream S1 at its northern extent. Wetland W3 meets BVW criteria but does not meet the hydrophytic vegetation and hydric soil requirements to be considered Waters of the U.S. under USACE regulations. Dominant vegetation within the wetland includes eastern hemlock (*Tsuga canadensis*), northern spicebush (*Lindera benzoin*), and sensitive fern (*Osmunda sensibilis*). A 100-foot Buffer Zone extends horizontally outward from the Wetland W3 boundary, and it contains woodlands, a portion of Streams S1, S6, S7, and S7A, and the existing haul road.

Wetland W4 is located north of the haul road. The wetland is a forested depression adjacent to Stream S1. Dominant vegetation within the wetland includes eastern white pine (*Pinus strobus*), northern spicebush (*Lindera benzoin*), skunk cabbage (*Symplocarpus foetidus*), wood fern (*Dryopteris carthusiana*), and striped maple (*Acer pennsylvanicum*). A 100-foot Buffer Zone extends horizontally outward from the Wetland W4 boundary, and it contains woodlands and a portion of Stream S1.

Wetland W5 is located south and west of the haul road. The wetland is a forested depression at the headwaters of intermittent Stream S5. Dominant vegetation within the wetland includes American

hornbeam (*Carpinus caroliniana*) and interrupted fern (*Osmunda claytoniana*). A 100-foot Buffer Zone extends horizontally outward from the Wetland W5 boundary, and it contains woodlands, a portion of Stream S5, Wetland W1, and the existing haul road.

Wetland W6 is located south of the haul road. The wetland is a forested depression adjacent to Stream S1 and drains to Stream S1 at its northeast extent. Wetland W6 meets BVW criteria but does not meet the hydrophytic vegetation and hydric soil requirements to be considered Waters of the U.S. under USACE regulations. Dominant vegetation within the wetland includes eastern hemlock (*Tsuga canadensis*), northern spicebush (*Lindera benzoin*), skunk cabbage (*Symplocarpus foetidus*), and marginal shield fern (*Dryopteris marginalis*). A 100-foot Buffer Zone extends horizontally outward from the Wetland W6 boundary, and it contains woodlands, Stream S1, and Wetland W3.

#### Land Under Waterbodies and Waterways, Bank, Riverfront Area

The unnamed tributary to the Deerfield River, Stream S1, which flows north under the existing haul road, is shown as perennial on the USGS topographic map (Greenfield, MA 7.5-minute quadrangle, 2013). Field investigations in October 2021 confirmed the Cowardin classification of the stream as Riverine Upper Perennial Unconsolidated Bottom Cobble-Gravel (R3UB1).

The ordinary high-water mark (OHWM) for the unnamed perennial tributary was delineated, and the feature is mapped as Stream S1. The OHWM was determined based on field indicators such as changes in slope, changes in vegetation, stain lines, and changes in bank materials. Primary channel bed substrate consists of cobble and gravel. The stream flows through mixed forest, with stream canopy cover dominated by eastern hemlock (*Tsuga canadensis*). Stream flow is currently conveyed through a double barrel culvert, each 24-36" wide. The stream width at the culvert inlet is approximately five feet with a water depth of ten inches. A plunge pool is present at the culvert outlet, with a width of approximately ten feet, and a water depth of approximately 1.5 feet.

The bank and land under waterbodies and waterways (LUWW) associated with the Stream S1 are regulated under the WPA. The 200-foot Riverfront Area, which extends horizontally from the OHWM is regulated under the WPA, as defined in 310 CMR 10.58(2)3. In the Project area this includes the existing haul road and culverted crossing of Stream S1, two additional existing roads, Wetlands W2, W3, W4, and W6, and woodland areas.

Two intermittent streams, delineated and mapped as Stream S6 and Stream S7, were identified within the Project area. Stream S6 drains Wetland W1 and receives stormwater runoff from the haul road and a stormwater culvert discharging to Wetland W1. Stream S6 is adjacent to the existing haul road and appears to follow a historic stormwater control swale. Stream S6 discharges to Stream S1. Stream S7 is an intermittent stream that originates in an off-site wetland. Wetland W2 overlaps with a braided section of the stream. Stream S7 discharges to the unnamed tributary to the Deerfield River (Stream S1). Non-continuous flow was observed in Stream S6 and S7 during the October 2021 field investigation. Streams S2, S3, S4, and S5 are located outside of the Project area, See Figure 4 and Project plans in Attachment B for resource locations.

The bank associated with intermittent Streams S6 and S7 are regulated under the WPA however no Riverfront Area is associated with intermittent streams and therefore with these features.

## **Proposed Activities**

The Project includes redevelopment of the existing gravel road known as Lenny Lane to an MSHA compliant haul road. The proposed haul road is approximately 2,680 feet and would be widened from an average width of 30 feet to 60 feet, which includes establishing new grading lines. The existing, double-barrel culverted crossing for Stream S1 would be replaced with an approximately 132-foot-long, 84-inch-wide corrugated metal pipe culvert. Widening of the haul road and the culvert replacement would necessitate the following activities:

- Re-alignment of Stream S1 and Stream S6 to meet the entrance of the replacement culvert through stream channels replicated with existing substrate;
- Modifying the existing stormwater system to accommodate the wider road; and
- Installation of pad site in the east side of the Project area, which would not impact any resources regulated under the WPA.

## Construction

Attachment B provides site plans depicting existing and proposed conditions. Construction of the proposed Project includes the following elements:

**Site Preparation:** Prior to initiating construction activities, ASMG would install erosion control devices around the work area. The area where the haul road would be widened requires clearing and grubbing to remove existing trees and shrubs. Temporary sediment traps would be established to manage stormwater runoff during construction as modifications are made to the stormwater system. Approximate locations for the temporary sediment traps are shown on Project plans in Attachment B and exact locations would be determined in the field. If flow conditions are conducive at the time of construction, ASMG may utilize basins and filter bags to manage stormwater flow during construction in lieu of temporary traps. The site would then be graded and drainage pipes and catch basins removed and disposed of off-site or abandoned in place. Excavated material to be reused on site would be stockpiled and protected with erosion control devices, and excavated material not intended for reuse would be immediately removed and disposed of. New stormwater drainage pipes would then be installed.

**Haul Road Widening and Stream Crossing Replacement:** Once grading is completed and stormwater drains installed, the existing double barrel culvert would be replaced with a new, 84 The stream would be blocked on the upstream and downstream sides of the culvert by sandbag check dams during the culvert replacement. Water would then be pumped from the upstream side to the downstream side of the culverted crossing. ASMG would use suction strainers on the pump suction line and discharge hose to reduce the turbidity of the diverted water. Compost filter sock and/or haybales would be used at the end of the discharge hose to act as a sediment trap for any disturbed silt/sedimentation during diversion activities before entering the stream. ASMG would monitor water levels at the upstream and downstream dams to ensure the pump is adequately maintaining stream flow, as well as conduct visual inspection of the discharge area, to ensure water discharged into the stream has minimal turbidity. The stream bypass and culvert installation is expected to occur over approximately 48 hours. The applicant plans to self-perform the proposed work and has the ability to plan scheduled work around weather conditions. Additionally, this stream receives the majority of its hydrology from rain events and snow melt so it is not typically flowing water at its capacity even during the higher-flow period of the year. Installation of the culvert would be scheduled to minimize potential adverse impacts during high flow conditions.

**Stormwater Management:** The facility's stormwater system is permitted and managed under its existing Environmental Protection (EPA) National Pollutant Discharge Elimination System (NPDES) permit. As part of this Project, two stormwater detention ponds (Pond 7P and 11P), three catch basins, associated drainage pipes, and one discharge point (DSN-006) will be removed to accommodate the wider haul road. Two discharge points (DSN-007 and 008) will be relocated as shown on the Project plans. Additional stormwater modifications include a constructed stormwater wetland and new drainage pipes, swales, and catch basins to connect to the relocated discharge points. For a detailed discussion of stormwater management see the Stormwater Report in Attachment D.

## Equipment

Anticipated equipment required during the construction of this project includes: bulldozers, utility trucks, dump trucks, road graders, compactors, excavators, and backhoes. Crews will require work trucks.



## Schedule

ASMG anticipates beginning construction in October 2023 and completing the Project by May 2024.

## Regulatory Compliance

The proposed Project complies with applicable performance standards for work in Bank, Riverfront Area, and LUWW. The applicant asserts that the Project is eligible for Limited Project status under 310 CMR 10.58(4) “for construction and maintenance of a roadway of minimum legal and practical width acceptable to the planning board, where reasonable alternative means of access from a public way to an upland area of the same owner is unavailable.” In order for the applicant to access the eastern portion of the property, they must cross Stream S1 and replacing the existing stream crossing rather than constructing a new crossing is the least impactful alternative. The stream crossing proposed would not restrict the flow of water, and in fact would significantly improve flow, and has been designed to minimize impacts to the extent practicable. The applicant requests that the Conservation Commission apply Limited Project status to this Project and assess compliance with performance standards to the greatest extent practicable.

Compliance with the applicable performance standards for each regulated resource that would be altered by the Project is described in more detail below.

### Buffer Zone

The Buffer Zone is not a regulated resource area, and therefore work within a Buffer Zone is not governed by specific regulatory performance standards. In general, work within a Buffer Zone is permissible when said work has been designed, or can be conditioned, such that there will be no impact on the downgradient wetland resource area(s) being buffered. As stated in 310 CMR 10.53(1) of the WPA Regulations:

*For work in Buffer Zone subject to review under 310 CMR 10.02(2)(b)3., the Issuing Authority shall impose conditions to protect the interests of the Act identified for the adjacent Resource Area... The issuing authority may consider the characteristics of the Buffer Zone, such as the presence of steep slopes, that may increase the potential for adverse impacts on Resource Areas. Conditions may include limitations on the scope and location of work in the Buffer Zone as necessary to avoid alteration of Resource Areas. The Issuing Authority may require erosion and sedimentation controls during construction, a clear limit of work, and the preservation of natural vegetation adjacent to the Resource Area and/or other measures commensurate with the scope and location of work with the Buffer Zone to protect the interests of the Act.*

The Project has been designed to address the considerations associated with buffer zones, such as erosion control and run-off. Measures have been incorporated into the Project design to ensure that work will be done in a manner that prevents impacts to downgradient wetland resources through careful management of stormwater runoff and potential sources of erosion. A clear limit of work will be identified, and erosion and sedimentation control areas will be established in the Project Area. Erosion control devices would be placed around the work area to prevent movement of debris from the disturbance area into buffer area. Temporary disturbance in vegetated areas of Buffer Zone will be restored in place and seeded with a native seed mix following completion of construction.

### Inland Bank

The general performance standards for Bank set forth in 310 CMR 10.54(4) are: *the proposed work will not impair the physical stability of the Bank; the water carrying capacity of the existing channel within the Bank; the ground water and surface water quality; the capacity of the Bank to provide breeding habitat, escape cover and food for fisheries; the capacity of the Bank to provide important wildlife habitat functions. A project or projects on a single lot, for which Notice(s) of Intent is filed on or after November 1, 1987, that (cumulatively) alter(s) up to 10% or 50 feet (whichever is less) of the length of the bank found to be*

*significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat functions. In the case of a bank of a river or an intermittent stream, the impact shall be measured on each side of the stream or river. Additional alterations beyond the above threshold may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures contained in 310 CMR 10.60. Work on a stream crossing shall be presumed to meet the performance standard set forth in 310 CMR 10.54(4)(a) provided the work is performed in compliance with the Massachusetts Stream Crossing Standards by consisting of a span or embedded culvert in which, at a minimum, the bottom of a span structure or the upper surface of an embedded culvert is above the elevation of the top of the bank, and the structure spans the channel width by a minimum of 1.2 times the bankfull width. This presumption is rebuttable and may be overcome by the submittal of credible evidence from a competent source. Notwithstanding the requirement of 310 CMR 10.54(4)(a)5., the impact on bank caused by the installation of a stream crossing is exempt from the requirement to perform a habitat evaluation in accordance with the procedures contained in 310 CMR 10.60.*

The Project has been designed to address the general performance standards for Bank resources. All impacts to Bank resources have been reduced to the greatest extent practicable and where impacts are unavoidable, Bank resources would be stabilized and restored following construction such that the Project would not impair the long-term stability of the bank. The Project would relocate portions of the banks of Stream S6 and Stream S1 via replicated stream channels constructed to relocate stream flow, mitigating the loss of bank. The water carrying capacity of the existing Stream S1, within the Bank, would increase as the replacement culvert would have a larger cross-sectional area than the double-barreled culvert currently in place. The replacement culvert would be embedded 2 feet within the upper surface above the elevation of top of bank. Hydrologic analysis of the stream indicates that the proposed culvert is appropriately sized for normal and storm flow. The replacement stream reaches will replicate upstream portions of the streams, maintaining approximate stream widths and comparable substrate. Existing materials on-site will be utilized in the stream replications.

Impacts to ground water and surface water quality would be minimized through the use of construction BMPs including erosion and sediment control measures, which are shown in the Project Plans in Attachment B.

The existing Bank of Stream S6 shows evidence of use as a stormwater conveyance channel that has been excavated. It does not currently provide breeding habitat, escape cover, or food for fisheries. The existing Bank of Stream S1 provides limited breeding habitat, escape cover, and food for fisheries, as the stream is bordered by upland forest habitat, with limited herbaceous vegetation. A wildlife habitat evaluation for Streams S1 and S6 is included in Attachment E.

#### Stream Crossing Standards

The Project involves replacing an existing double barrel culvert with a single metal corrugated culvert to accommodate the widening of the haul road. The Project was designed to meet the Massachusetts Stream Crossing Standards to the maximum extent practicable, as required for replacement crossings. The General Provisions for stream crossing replacements as stated in 310 CMR 10.53(8): *Any person proposing the replacement of an existing stream crossing shall demonstrate to the Issuing Authority that the impacts of the crossing have been avoided where possible, and when not possible have been minimized and that mitigation measures have been provided to contribute to the protection of the interests identified in M.G.L. c. 131, § 40. An applicant will be presumed to have made this showing if the project is designed as follows: (a) If the project includes replacement of an existing non-tidal crossing, the applicant demonstrates to the satisfaction of the Issuing Authority that the crossing complies with the Massachusetts Stream Crossing Standards to the maximum extent practicable. At a minimum, in evaluating the potential to comply with the standards to the maximum extent practicable the applicant shall consider site constraints in meeting the standard, undesirable effects of risk in meeting the standard and the environmental benefit of meeting the standard compared to the cost by evaluating the following: The potential for downstream flooding;*

*Upstream and downstream habitat (in-stream habitat, wetlands); Potential for erosion and head-cutting; Stream stability; Habitat fragmentation caused by the crossing; The amount of stream mileage made accessible by the improvements; Storm flow conveyance; Engineering design constraints specific to the crossing; Hydrologic constraints specific to the crossing; Impacts to wetlands that would occur by improving the crossing; Potential to affect property and infrastructure, and Cost of replacement.*

Prior to selecting a crossing culvert type and size, the proposed crossing was evaluated based on bankfull width and openness requirements. The Massachusetts Stream Crossing Standards use the following parameters:

- Minimum crossing width (culvert span or diameter) = 1.2 times the bankfull width of the reference reach.
- Minimum openness (flow area / culvert) = 0.82.
- Minimum embedment depth = 2 feet.

However, the presumption that those parameters are best practice for an individual water crossing is rebuttable and may be overcome with credible evidence from a competent source. Evaluation of the existing and proposed crossing by Professional Engineers concluded that following the stream crossing standards in this instance would far exceed the flow requirements and would require additional impacts.

Bankfull width of Stream S1 was determined from seventeen (17) cross-sections along the reference reach. Nine (9) sections were upstream of the crossing (segment S1) and eight (8) sections were downstream of the crossing (segment S2). Sections were longitudinally spaced at approximately 15 to 25 feet. Bankfull width ranged from approximately 7 to 22 feet. Average bankfull width was calculated as 14.6 ft. This corresponds to a 1.2 bankfull width of 17.5 feet. To satisfy the bankfull requirement, a box or arch culvert with a span of 18 feet or greater would be required. Refer to the attached Reference Reach Plan and Cross-Sections for details on the bankfull width determination (Figure 6).

Culvert length for the proposed crossing is 133 feet. An openness of 0.82 requires a minimum flow area of 109 square feet. Assuming a box culvert with 18 feet span and a required embedment depth of 2 feet, a rise of 9 feet (7 feet above ground) would be required to satisfy the openness requirement.

A crossing that meets these bankfull width and openness requirements would be constrained by the footprint of the existing road and culverted crossing. Installation of a span of that size would require extensive additional tree clearing and grading in the riverfront area surrounding Stream S1 over the proposed crossing. Stormwater calculations reported in the Stormwater Report indicate that an 18-foot span is not required and that the proposed 84-inch culvert is capable of passing more than the 100-year storm volume. A larger span would greatly exceed the required storm capacity while the proposed culvert is more appropriate in meeting design flow capacities and avoiding adverse impacts to upstream or downstream flows and stages. For those reasons, meeting the 1.2 bankfull width and 0.82 openness ratio was not deemed practical or appropriate for this project and an 84-inch CMP was proposed. Refer to Section 2.2 of the Stormwater Management Report for the hydraulic analysis of the proposed crossing.

The Project has been designed to comply with the Massachusetts Stream Crossing Standards to the maximum extent practicable. Existing conditions do not produce downstream flooding and the culvert replacement would not change the potential for flooding. The existing double barrel culvert currently blocks the movement of debris at the inlet and is perched at the outlet with a plunge pool, causing aquatic habitat fragmentation. The replacement culvert would be an embedded 84-inch corrugated metal pipe which would improve flow conditions, eliminate the plunge pool at the outlet, and provide aquatic habitat continuity. The larger replacement culvert will increase the hydraulic capacity of the crossing and will further reduce potential for erosion and head cutting. Portions of the existing streams S1 and S6 will be rerouted to replicated stream channels to tie into the culvert inlet. The replicated stream channels have been designed to match the delineated stream widths and existing substrate, which will decrease the likelihood of erosion and head cutting. The culvert pipe outlet will be stabilized with existing natural stream substrate, and

erosion and head cutting is not expected due to the increased hydraulic capacity of the replacement culvert. The replacement culvert has been designed to accommodate storm events and would provide appropriate storm flow conveyance.

### Land Under Waterbodies and Waterways

The general performance standard set forth in 301 CMR 10.56(4) are; *(a) Where the presumption set forth in 310 CMR 10.56(3) is not overcome, any proposed work within Land under Water Bodies and Waterways shall not impair the following: 1. The water carrying capacity within the defined channel, which is provided by said land in conjunction with the banks; 2. Ground and surface water quality; 3. The capacity of said land to provide breeding habitat, escape cover and food for fisheries; and 4. The capacity of said land to provide important wildlife habitat functions. A project or projects on a single lot, for which Notice(s) of intent is filed on or after November 1, 1987, that (cumulatively) alter(s) up to 10% or 5,000 square feet (whichever is less) of land in this resource area found to be significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat functions. Work on a stream crossing shall be presumed to meet the performance standard set forth in 310 CMR 10.56(4)(a) provided the work is performed in compliance with the Massachusetts Stream Crossing Standards by consisting of a span or embedded culvert in which, at a minimum, the bottom of a span structure or the upper surface of an embedded culvert is above the elevation of the top of the bank, and the structure spans the channel width by a minimum of 1.2 times the bankfull width. This presumption is rebuttable and may be overcome by the submittal of credible evidence from a competent source. Notwithstanding the requirements of 310 CMR 10.56(4)(a)4., the impact on Land under Water Bodies and Waterways caused by the installation of a stream crossing is exempt from the requirement to perform a habitat evaluation in accordance with the procedures established under 310 CMR 10.60.*

The Project has been designed to address and comply with general performance standards for LUWW. The Project would increase the water carrying capacity of the defined channel as the replacement culvert would have a larger cross-sectional area than the double-barreled culvert currently in place. Impacts to ground water and surface water quality would be minimized through the use of construction BMPs including erosion and sediment control measures, which are shown in the Project plans in Attachment B. The existing LUWW of Stream S1 provides limited breeding habitat, escape cover, and food for fisheries. Fish were observed in the stream during the October field investigations. The culvert replacement will improve access to breeding habitat, escape cover, and food for fisheries as the embedded single barrel culvert will better allow fish passage by eliminating debris catching on the double barrel culvert and eliminating the plunge pool at the culvert exit. The replacement culvert would be embedded 2 feet with the upper surface above the elevation of top of bank and hydrologic analysis of the stream indicates that the proposed culvert is appropriately sized for normal and storm flow. The replacement stream reach will replicate upstream portions of the stream, maintaining approximate stream width and utilizing existing substrate.

### Riverfront Area

The general performance standards for riverfront area set forth in 301 CMR 10.58(4) are: *Where the presumption set forth in 310 CMR 10.58(3) is not overcome, the applicant shall prove by a preponderance of the evidence that there are no practicable and substantially equivalent economic alternatives to the proposed project with less adverse effects on the interests identified in M.G.L. c.131 § 40 and that the work, including proposed mitigation, will have no significant adverse impact on the riverfront area to protect the interests identified in M.G.L. c. 131 § 40. In the event that the presumption is partially overcome, the issuing authority shall make a written determination setting forth its grounds in the Order of Conditions and the partial rebuttal shall be taken into account in the application of 310 CMR 10.58 (4)(d)1.a. and c.; the issuing authority shall impose conditions in the Order that contribute to the protection of interests for which the riverfront area is significant. (a) Protection of Other Resource Areas. The work shall meet the*

*performance standards for all other resource areas within the riverfront area, as identified in 310 CMR 10.30 (Coastal Bank), 10.32 (Salt Marsh), 10.55 (Bordering Vegetated Wetland), and 10.57 (Land Subject to Flooding). When work in the riverfront area is also within the buffer zone to another resource area, the performance standards for the riverfront area shall contribute to the protection of the interests of M.G.L. c. 131, § 40 in lieu of any additional requirements that might otherwise be imposed on work in the buffer zone within the riverfront area. (b) Protection of Rare Species. No project may be permitted within the riverfront area which will have any adverse effect on specified habitat sites of rare wetland or upland, vertebrate or invertebrate species, as identified by the procedures established under 310 CMR 10.59 or 10.37, or which will have any adverse effect on vernal pool habitat certified prior to the filing of the Notice of Intent. (c) Practicable and Substantially Equivalent Economic Alternatives. There must be no practicable and substantially equivalent economic alternative to the proposed project with less adverse effects on the interests identified in M.G.L. c. 131 § 40. (d) No Significant Adverse Impact. The work, including proposed mitigation measures, must have no significant adverse impact on the riverfront area to protect the interests identified in M.G.L. c. 131, § 40.*

The Project was designed to address the performance standards identified in 310 CMR 10.58(4) for the work conducted in Riverfront Area. As demonstrated in the “Alternatives Analysis” section (below), the chosen haul road improvements and stream crossing replacement represents the alternative for which there are no other substantially equivalent economic alternatives to the proposed Project with less adverse effects.

The project will not impact habitat of rare species according to the most recent Natural Heritage & Endangered Species Program mapping or any certified vernal pool according to the most recent Massachusetts GIS mapping.

In order for the applicant to access the east side of their property they must cross Stream S1, as it extends the length of the property. Improving the existing crossing of Stream S1 requires less impacts and expense than installing a new crossing in a different location. Because of the constraints of the site, there is no practicable and substantially equivalent economic alternative.

Within the 200-foot riverfront area, the Commission may allow alteration of up to 5,000 sqft or 10% of the riverfront area provided that a 100-foot wide undisturbed vegetated area is maintained and stormwater is managed according to the Massachusetts Stormwater Policy. The project proposes 120,729 sqft of temporary and 79,012 sqft of permanent impact, a total of 199,741 sqft to the riverfront area, 10% of the total area on the parcel (1,959,000 sqft). However, the temporarily impacted portion will be allowed to revegetate so only 4% of the riverfront area on site would be permanently altered. Vegetation clearing within the riverfront area will be limited to extent necessary for the footprint of the widened road and culvert installation. As described, there is no access to the east side of the property without crossing this stream and improving the existing crossing would have far less clearing in the riverfront area associated with it than installing a new crossing. The proposed project does comply with Massachusetts Stormwater Policy and would not impair the capacity of the riverfront area to provide wildlife habitat functions. Erosion and sedimentation controls have been incorporated into the project design to protect groundwater and surface water quality.

### Abutters

In compliance with WPA Section 10.05(4), no abutter notifications are required for the Project, as the Project is solely within a parcel greater than 50 acres and no abutter lots are located within one hundred feet from the Project area.

### **Stormwater Management**

Runoff generated from non-vegetated surfaces will be collected and managed in accordance with the Massachusetts Stormwater Management Policy and the standards at 310 CMR 10.05(6)(k) in significant improvement to existing conditions. The proposed Project will improve existing conditions within the



Project Area by including a stormwater management system that provides groundwater recharge, attenuates peak flows and provides water quality treatment. Full details on the system (including supporting calculations) are included in the accompanying Stormwater Management Report (Attachment D).

Compliance with the 10 stormwater management standards cited in Section 310 CMR 10.05(6)(k) of the WPA Regulations and the Town of Deerfield Stormwater Regulations is evaluated in the Stormwater Management Report.

## **Alternatives Analysis**

Based upon the presence of Riverfront Area resources in the Project Area, the Project proponent performed an alternatives analysis, as described below.

The improved haul road must conform to MSHA standards in order to use it for heavy vehicle traffic and so the width and grade of the proposed road cannot be altered. ASMG designed the road to minimize impacts to regulated resources and comply with Massachusetts Stream Crossing Standards to the maximum extent practicable. ASMG proposes to widen the existing road to 60 feet and replace the existing double barrel culvert stream crossing. The chosen alternative utilizes an 84-inch corrugated metal pipe culvert to replace the existing culvert. Alternatives considered and rejected include 1.) installing a span rather than a culvert; 2.) installing a larger culvert; and 3.) routing a new road through a different alignment within the facility. These alternatives were rejected as economically infeasible; a span and larger culvert both exceed the hydrological requirements of the stream and would create larger disturbance footprints; and routing a new road would have created a much larger disturbance footprint than the selected alternative and would potentially impact additional regulated resources, while still requiring at least one stream crossing.

The chosen alternative represents the least impactful option that satisfies the stream's hydrologic requirements and meets MSHA standards, and although it crosses regulated resources, it is the alternative that minimizes impacts while meeting the Project purpose and need.

## **Avoidance and Minimization Measures**

The expanded haul road has been sited to reduce impacts to wetland resources, LUWW, Inland Bank, and the Riverfront Area to the greatest extent practicable. The Project has been designed to avoid impacts to BVW and the new culvert for the unnamed tributary to the Deerfield River would improve flow conditions. Erosion and sediment control measures will be implemented to minimize temporary impacts to regulated resource areas during the construction phase of the Project. The measures include Best Management Practices (BMPs) specified in guidelines developed by the DEP and the U.S. Environmental Protection Agency (EPA). Proper implementation of the erosion and sedimentation control measures includes:

- Minimize exposed soil areas through sequencing and temporary stabilization;
- Place structures to manage stormwater runoff and erosion; and
- Establish a permanent vegetative cover or other forms of stabilization following construction and as soon as practicable.

## **Construction Best Management Practices**

Construction best management practices to be implemented during construction include temporary stabilization, permanent seeding, and erosion and sedimentation controls. These practices will be initiated as soon as practicable in appropriate areas within the Project area.

### **Temporary Stabilization**

Any areas of exposed soil or stockpiles that will remain inactive for more than 14 days will be surrounded by erosion control devices and covered with polyurethane sheeting or stabilized with mulch.

### Permanent Seeding

Upon completion of the Project, all disturbed areas will be seeded with a native seed mix. The site will be stabilized with biodegradable erosion control blankets, with a layer of straw hay and seed underneath. The seed mix will be applied at a rate specified by the manufacturer.

### Erosion Control Barriers

Prior to any ground disturbance, an approved erosion control barrier, specifically silt fence and weed-free hay bales, will be installed around the limit of disturbance of the work area. If construction progresses beyond a single day, barriers will be installed around the base of stockpiles and other erosion prone areas. The barriers will be entrenched into the substrate to prevent underflow. If sediment has accumulated to a depth which impairs proper functioning of the barrier, it will be removed by hand or by machinery operating upslope of the barriers. This material will be either reused in the Project Area or disposed of at a suitable offsite location. Any damaged sections of the barrier will be repaired or replaced immediately upon discovery.

### Catch Basin Inlet Protection

The inlets of existing and proposed catch basins will be protected from sediment inflow during the work period by surrounding them with a barrier of staked straw bales or by installing Silt Sacks®. If straw bales are used, a layer of non-woven filter fabric shall be placed beneath the grate of each basin. If sediment has collected behind the barrier or in the Silt Sack® to a point where it impairs proper functioning, it will be removed and will be either reused onsite or disposed of at a suitable offsite location.

### Temporary Sediment Traps

Temporary sediment traps will be installed and maintained to control stormwater runoff until uphill areas are stabilized and stormwater system modifications are in place. If sediment accumulates to a depth which impairs proper functioning of the trap, it will be removed and either reused onsite or disposed of at a suitable offsite location.

### Diversion Swales

Diversion swales will be constructed to collect runoff from construction areas and convey it to the temporary sediment traps. The temporary diversion swales will remain in place until the sediment trap is no longer required.

### Dewatering Filters

If flow conditions are conducive, stormwater runoff may be directed into basins and/or filter bags located in upland, well-vegetated areas.

## **Summary**

The Applicant respectfully requests that the Deerfield Conservation Commission find these measures adequately protective of the interests identified in the WPA and issue an Order of Conditions approving the work described in this NOI and shown on the accompanying plans.



ATTACHMENT B  
Project Plans

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ATTACHMENT C  
Wetland Memorandum

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## TECHNICAL MEMORANDUM

TO: Mr. Daniel J. Hartman, PE, All States Materials Group  
FROM: Eileen Piskura, Kleinfelder Environmental Permitting Lead  
CC: Sami Pretzel, P.E., Kleinfelder  
DATE: October 24, 2022  
**SUBJECT: Wetland and Watercourse Delineation Memorandum for the Haul Road Improvements and New Pad Site Project**

Kleinfelder Project No.: 20221383.001A

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Kleinfelder Inc. (Kleinfelder) has prepared a *Wetland and Watercourse Delineation Memorandum* (memo) as part of the environmental investigation conducted for All States Materials Group (ASMG) in support of planned haul road improvements and new pad site development. The limit of the investigation is defined by the Study Area, as shown on Figure 2. The following memo summarizes this investigation.

### BACKGROUND

Kleinfelder delineated wetlands and watercourses along portions of the haul road located on the eastern portion of the ASMG facility located at 901 River Road, Deerfield, MA (Study Area). The Study Area is approximately 25.34 acres within the Town of Deerfield, Franklin County, Massachusetts (MA) and can be located on the United States Geological Survey (USGS) Greenfield, MA 7.5-minute series topographical quadrangle (National Geographic Society, 2013) (Figure 1).

The Study Area is composed primarily of deciduous forest along an active haul road on the east side of the ASMG facility. The Study Area drains to an unnamed tributary (delineated Stream S1) of the Deerfield River and is in the Bear River – Deerfield River basin (HUC12, 010802030502).

One surface water identified by the U.S. Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) is located within the Study Area. It is identified as a Riverine Upper Perennial Unconsolidated Bottom Permanently Flooded (R3UBH) stream and is shown on Figure 2 (USFWS, 2018).

The Natural Resources Conservation Service (NRCS) web soil survey indicates ten soil map units located within the Study Area. The soil units and corresponding hydric soil ratings are shown in **Table 1** (NRCS, 2018).

**Table 1. NRCS Mapped Soils Within the Study Area**

| Soil Map Unit | Description  | Hydric Rating By Map Unit (%) |
|---------------|--|-------------------------------|
| <b>9A</b>     | Birdsall mucky silt loam, 0 to 2 percent slopes            | 100                           |
| <b>131B</b>   | Yalesville-Holyoke complex, 3 to 8 percent slopes, rocky   | 5                             |
| <b>223B</b>   | Scio silt loam, 3 to 8 percent slopes                      | 10                            |
| <b>235F</b>   | Poocham silt loam, 25 to 60 percent slopes                 | 0                             |
| <b>255C</b>   | Windsor loamy sand, 8 to 15 percent slopes                 | 0                             |
| <b>258B</b>   | Amostown fine sandy loam, 3 to 8 percent slopes            | 0                             |
| <b>397B</b>   | Wethersfield very fine sandy loam, 3 to 8 percent slopes   | 2                             |
| <b>397D</b>   | Wethersfield very fine sandy loam, 15 to 25 percent slopes | 1                             |
| <b>601</b>    | Pits, quarry   | 0                             |
| <b>656</b>    | Udorthents-Urban land complex                              | 0                             |

Source: USDA NRCS WebSoil Survey, accessed at:  
<https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>

## METHODOLOGY

On October 28, 2021 and August 23, 2022, Kleinfelder wetland scientist Emma Mrowka and environmental scientist Olivia Footit performed investigations to identify and delineate wetlands and watercourses potentially regulated under the Massachusetts Wetland Protection Act and the federal Clean Water Act (MA Wetland Protection Act, 1995; Clean Water Act of 1972).

Kleinfelder used the Antecedent Precipitation Tool (U.S. Army Corps of Engineers, 2019) to compare precipitation and temperatures during the field efforts against the 30-year average.

To identify and delineate wetlands, Kleinfelder followed routine wetland determination methodology, as described in the U.S. Army Corps of Engineers (USACE) *Wetland Delineation Manual, Technical Report Y-87-1* (Environmental Laboratory, 1987) using wetland criteria in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0)* (USACE, 2012), and *Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act* (MA Department of Environmental Protection [MassDEP], 1995) (BVW Manual). Wetland indicator status for all observed vegetation was noted based upon the National Wetland Plant List version 3.5 (USACE 2020). To identify and delineate watercourses, Kleinfelder performed an evaluation based on typical watercourse characteristics such as defined streambed and streambanks, exclusion of terrestrial vegetation, hydrologically-sorted substrate material, and the presence of an ordinary high water mark (OHWM). Stream categorization follows flow regimes (perennial, intermittent, or ephemeral) defined by the USACE.

Wetlands and watercourses were classified following *Classification of Wetlands and Deepwater Habitats of the United States* (FGDC 2013). Kleinfelder mapped aquatic resource boundaries and sample points with a Global Positioning System (GPS) unit and photographed resources and representative upland areas.

## RESULTS

**Table 2** details the weather and climate condition during the two field delineation visits.

**Table 2. Precipitation Analysis**

| Date     | Previous 48 hr. Precipitation (in.) <sup>1</sup> | High Temp (°F) <sup>1</sup> | APT Condition <sup>2</sup> | Season <sup>2</sup> | Palmer Drought Severity Index <sup>2</sup> |
|----------|--|-----------------------------|----------------------------|---------------------|--|
| 10/28/21 | 0.91   | 55                          | Normal Condition           | Wet Season          | Extreme Wetness                            |
| 8/23/22  | 0.03   | 78                          | Drier than Normal          | Dry Season          | Moderate Drought                           |

<sup>1</sup>Data taken from the Greenfield Number 3 Station. <sup>2</sup>Output from USACE Antecedent Precipitation Tool (v1.0.19).

Six palustrine forested (PFO) wetlands, two perennial streams, three intermittent streams, and two ephemeral streams were identified and delineated within the Study Area (Figure 2). USACE Wetland Determination Data Forms, MassDEP Bordering Vegetated Wetland Forms, and photographs are provided in Appendices A and B.

- Wetland W1 (PFO):** This 0.47-acre PFO depressional wetland is fed by hillside seeps and stormwater runoff from a culvert adjacent to the haul road. The primary indicators of hydrology observed were Surface Water (A1), High Water Table (A2), Saturation (A3), and Water-Stained Leaves (B9). Secondary indicators of wetland hydrology include Drainage Patterns (B10), Geomorphic Position (D3), and FAC-Neutral Test (D5). The dominant tree species were *Acer rubrum* and *Quercus rubrum*. The dominant shrub species were *Carpinus caroliniana* and *Ulmus americana*, and the dominant herbaceous species was *Osmunda claytoniana*. Soils met the criteria for hydric soil field indicator Depleted Matrix (F3).
- Wetland W2 (PFO):** This 0.02-acre PFO depressional wetland is located on an old forest road and drains to stream S7. The primary indicators of hydrology observed were Surface Water (A1), High Water Table (A2), Saturation (A3), and Water-Stained Leaves (B9). Secondary indicators of wetland hydrology include Drainage Patterns (B10), Geomorphic Position (D3), and FAC-Neutral Test (D5). The dominant tree species found within this wetland was *Tsuga canadensis*. The dominant shrub was *Lindera benzoin*, and the dominant herbaceous species was *Onoclea sensibilis*. Soils met the criteria for hydric soil field indicator Depleted Matrix (F3).
- Wetland W3 (PFO):** This 0.16-acre PFO depressional wetland is located at the toe of slope in the valley of stream S1. The wetland drains to S1 at its northern extent. Wetland W3 meets criteria as a Bordering Vegetated Wetland but does not meet hydrophytic vegetation and hydric soil indicators to be considered a wetland under USACE guidance. See Appendix A for the corresponding MassDEP Bordering Vegetated Wetland Delineation Field Data Form. The indicators of hydrology observed were Drainage patterns in BVW and Geomorphic Position. The dominant tree species found within the wetland was *Tsuga canadensis*. The dominant shrub was *Lindera benzoin*, and the dominant herbaceous species were *Osmunda claytonia* and *Dryopteris marginalis*. Soils were a silt loam with a dark matrix color of 7.5YR 3/2 with no redoximorphic features, characteristic of forested landscapes. No hydric soil field indicator was met.

- **Wetland W4 (PFO):** This 0.07-acre PFO depressional wetland is located adjacent to stream S1, within the floodplain. The primary indicator of hydrology observed was Oxidized Rhizospheres on Living Roots (C3). Secondary indicators of wetland hydrology include Geomorphic Position (D3), and FAC-Neutral Test (D5). The dominant tree species found within this wetland was *Pinus strobus*. The dominant shrub was *Lindera benzoin*, and the dominant herbaceous species were *Symplocarpus foetidus*, *Dryopteris carthusiana*, and *Acer pensylvanicum*. Soils met the criteria for hydric soil field indicator Depleted Matrix (F3).
- **Wetland W5 (PFO):** This 0.009-acre PFO depressional wetland is located on a hillslope at the headwaters of intermittent stream S5. The PFO cover type is assigned due to the influence of trees rooted outside of the wetland but providing canopy cover. The primary indicator of hydrology observed was Water-Stained Leaves (B9). Secondary indicators of wetland hydrology include Drainage Patterns (B10) and FAC-Neutral Test (D5). No trees were rooted within the wetland. The dominant shrub was *Carpinus caroliniana*, and the dominant herbaceous species were *Osmunda claytoniana* and *Onoclea sensibilis*. Soils met the criteria for hydric soil field indicators Depleted Matrix (F3) and Redox Dark Surface (F6).
- **Wetland W6 (PFO):** This 0.04-acre PFO depressional wetland is located at the toe of slope in the valley of stream S1. The wetland drains to S1 at its northeastern extent. Wetland W6 meets criteria as a Bordering Vegetated Wetland, but does not meet hydric soil indicators to be considered a wetland under USACE guidance. See Appendix A for the corresponding MassDEP Bordering Vegetated Wetland Delineation Field Data Form. The indicators of hydrology observed were Drainage patterns in BVW and Geomorphic Position. The dominant tree species found within the wetland was *Tsuga canadensis*. The dominant shrub was *Lindera benzoin*, and the dominant herbaceous species were *Symplocarpus foetidus*, *Dryopteris marginalis*, and *Toxicodendron radicans*. Soils were a silt loam with a dark matrix color of 7.5YR 3/2 with no redoximorphic features, characteristic of forested landscapes. No hydric soil field indicator was met.
- **Stream S1 (R3UB1):** This perennial stream flows north through the study area, crossing under the haul road. The Cowardin classification of S1 is Riverine Upper Perennial Unconsolidated Bottom Cobble-Gravel (R3UB1). Flowing water was present in the channel, the average OHWM was eight feet, and the average top of bank width was ten feet. Primary channel bed substrate consisted of cobble and gravel. Stream S1 is a tributary to Deerfield River, located off site.
- **Stream S2 (R3UB1):** This perennial stream is an approximately eight-foot-long watercourse from an outfall culvert into S1. Flowing water was present in the channel, the average OHWM was five feet, and the average top of bank width was five feet. Primary channel bed substrate consisted of cobble, gravel, and silt.
- **Stream S3 (R6SB3):** This ephemeral stream originates at a hillside seep and flows into S1. The Cowardin classification of S3 is Riverine Ephemeral Streambed Cobble-Gravel (R6SB3). Non-continuous flow was present in the channel, the average OHWM was one foot, and the average top of bank width was three feet. Primary channel bed substrate consisted of cobble, gravel, and silt.
- **Stream S4 (R6SB3):** This ephemeral stream originates from a hillside and flows into S1 from the west. Non-continuous flow was present in the channel, the average OHWM was one foot, and the average top of bank width was three feet. Primary channel bed substrate consisted of gravel, silt, and clay.
- **Stream S5 (R4SB3):** This intermittent stream originates at a hillside seep and flows west. Outside of the study area the stream dissipates to a wetland, then re-channelizes as stream S7. The Cowardin classification of S5 is Riverine Intermittent Streambed Cobble-

Gravel (R4SB3). Flowing water was present in the channel, the average OHWM was 1.5 feet, and the average top of bank width was three feet. Primary channel bed substrate consisted of gravel, clay, and silt.

- **Stream S6 (R4SB3):** This intermittent stream originates from wetland W1 and additionally receives flow from a stormwater outlet along the haul road. S6 flows into Stream S1 at the S1 haul road crossing inlet. Non-continuous flow was present in the channel, the average OHWM was three feet, and the average top of bank width was five feet. Primary channel bed substrate consisted of cobble and gravel.
- **Stream S7 (R4SB3):** This intermittent stream originates from S5 and an offsite wetland and flows into Stream S1. S7 flows through a portion of Wetland W2 and contains a braided channel, S7A. Non-continuous flow was present in the channel, the average OHWM was two feet, and the average top of bank width was three feet. Primary channel bed substrate consisted of cobble and gravel.

## SUMMARY

Kleinfelder conducted wetland and watercourse investigations on October 28, 2021 and August 23, 2022 for ASMG in support of planned haul road improvements and new pad site development within the Town of Deerfield, Franklin County, Massachusetts. Six PFO wetlands, two perennial streams, three intermittent streams, and two ephemeral streams were identified and delineated within the Study Area.

## LIMITATIONS

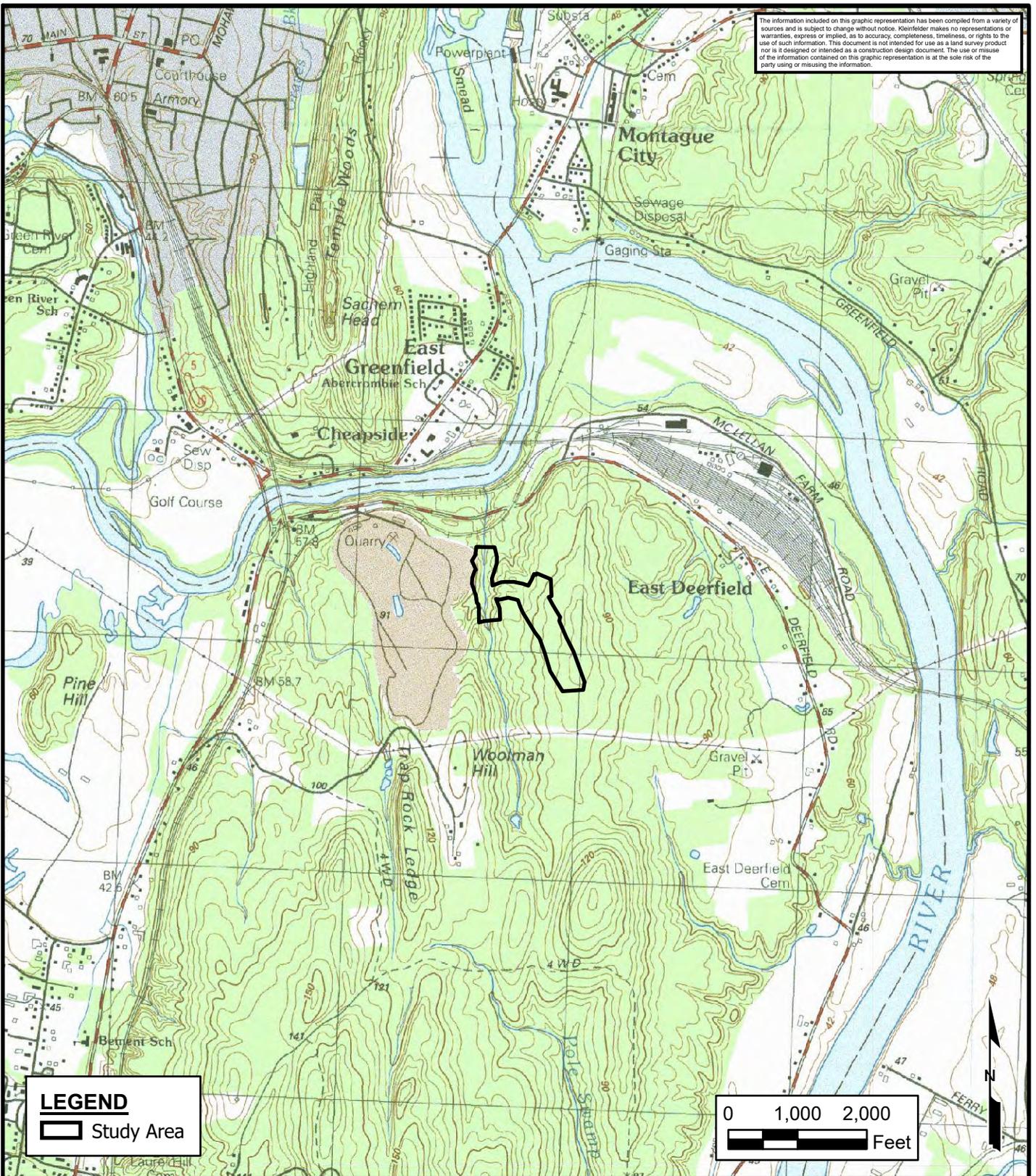
- This investigation was limited to the Study Area shown herein. Kleinfelder did not examine areas outside of the Study Area, thus no information is provided regarding the presence or absence of regulated wetlands and watercourses outside of the Study Area.
- This investigation was conducted on the date indicated. Human-induced or natural changes at the Study Area may occur after this date which may cause changes in the presence and extent of regulated wetlands and watercourses.
- The findings of the Study Area investigation completed by Kleinfelder were limited to the date of the investigation, and this report reflects the conditions at that time. In circumstances where a site has been developed prior to the Study Area investigation, the presence or absence of pre-construction wetlands or watercourses and their estimated extents within the Study Area is beyond the scope of this report.

## REFERENCES

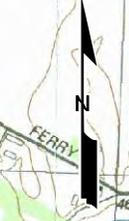
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# FIGURES

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**LEGEND**  
 Study Area



**USGS Quad Name: Greenfield, MA**  
**Town of Deerfield, Franklin County, Massachusetts**  
**Center of Page: 72°34'43"W 42°33'58"N**

|             |                                 |
|-------------|---------------------------------|
| PROJECT NO. | 20221383.001A                   |
| CREATED:    | 11/12/2021                      |
| CREATED BY: | ADAmario                        |
| CHECKED BY: | EMrowka                         |
| FILE NAME:  | All_States_Materials_Online_Map |

**Location Map**

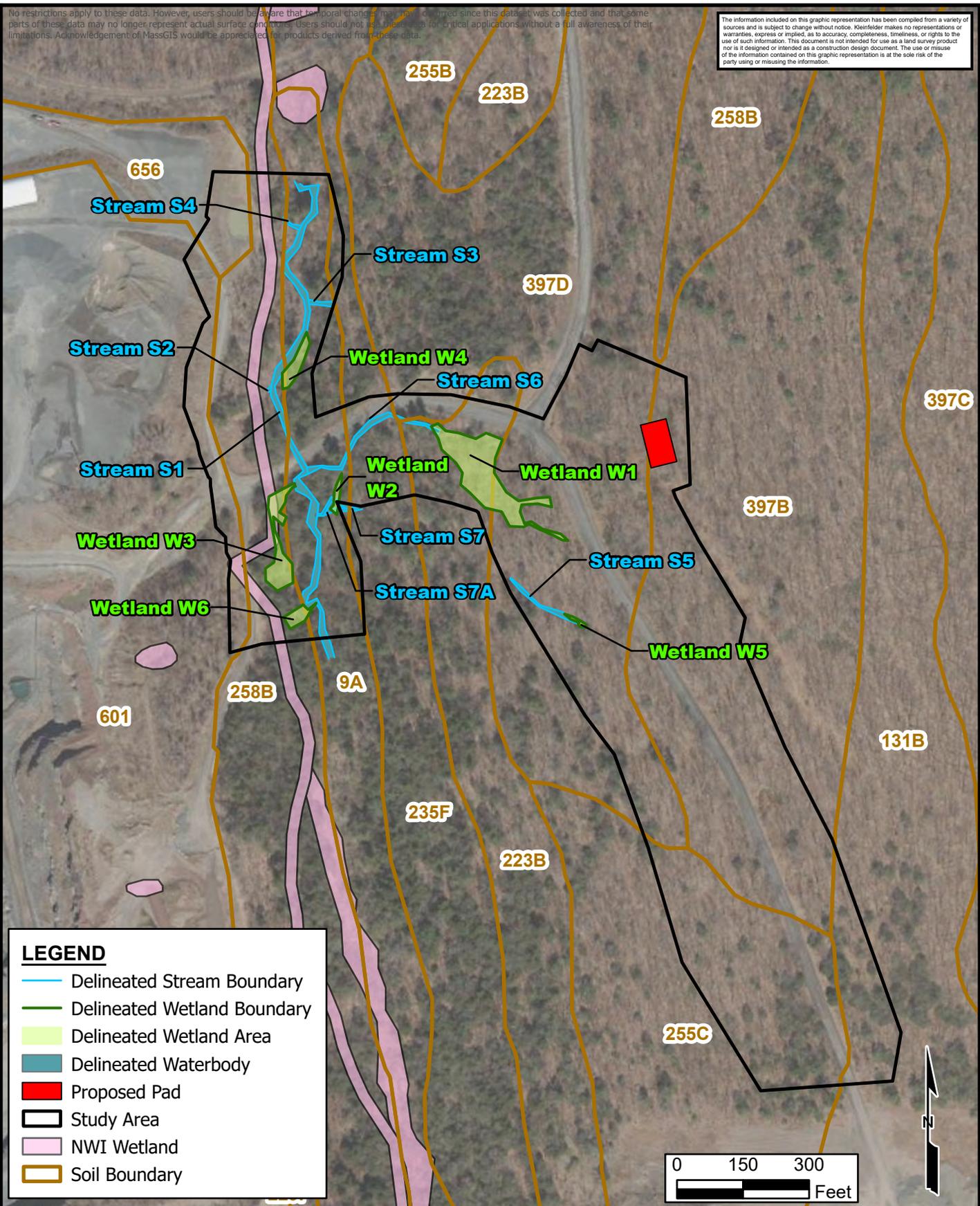
All States Materials Group  
 Haul Road Improvements  
 901 River Road  
 Deerfield, Massachusetts

FIGURE  
**1**

No restrictions apply to these data. However, users should be aware that temporal changes may have occurred since this dataset was collected and that some parts of these data may no longer represent actual surface conditions. Users should not rely on this data for critical applications without a full awareness of their limitations. Acknowledgement of MassGIS would be appreciated for products derived from these data.

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Date: 10/24/2022 User: ADAmario Path: \\azrgisstor01\GIS\_Projects\Client\VAI\_States\_Materials\River\_Rd\_Project\WAPS\VAI\_States\_Materials\_Online\_Map.aprx



**LEGEND**

- Delineated Stream Boundary
- Delineated Wetland Boundary
- Delineated Wetland Area
- Delineated Waterbody
- Proposed Pad
- Study Area
- NWI Wetland
- Soil Boundary

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|             |                                 |
|-------------|---------------------------------|
| PROJECT NO. | 20221383.001A                   |
| CREATED:    | 10/24/2022                      |
| CREATED BY: | ADAmario                        |
| CHECKED BY: | EMrowka                         |
| FILE NAME:  | All_States_Materials_Online_Map |

**Wetland Delineation**

All States Materials Group  
Haul Road Improvements  
901 River Road  
Deerfield, Massachusetts

FIGURE  
**2**

# **APPENDIX A**

## **FIELD DATA FORMS**

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: \_\_\_\_\_ City/County: \_\_\_\_\_ Sampling Date: \_\_\_\_\_

Applicant/Owner: \_\_\_\_\_ State: \_\_\_\_\_ Sampling Point: \_\_\_\_\_

Investigator(s): \_\_\_\_\_ Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_

Subregion (LRR or MLRA): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No \_\_\_\_\_

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

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

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes _____ No _____<br>Hydric Soil Present? Yes _____ No _____<br>Wetland Hydrology Present? Yes _____ No _____ | <b>Is the Sampled Area within a Wetland?</b> Yes _____ No _____<br>If yes, optional Wetland Site ID: _____ |
| Remarks: (Explain alternative procedures here or in a separate report.)  |  |

### HYDROLOGY

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

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

Sampling Point: \_\_\_\_\_

| <u>Tree Stratum</u> (Plot size: _____ )                       | Absolute % Cover | Dominant Species? | Indicator Status |  |
|---|------------------|-------------------|------------------|--|
| 1. _____  | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)   |
| 2. _____  | _____            | _____             | _____            |  |
| 3. _____  | _____            | _____             | _____            |  |
| 4. _____  | _____            | _____             | _____            |  |
| 5. _____  | _____            | _____             | _____            |  |
| 6. _____  | _____            | _____             | _____            |  |
| 7. _____  | _____            | _____             | _____            |  |
| _____ = Total Cover   |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by:<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____  |
| <u>Sapling/Shrub Stratum</u> (Plot size: _____ )              |                  |                   |                  |  |
| 1. _____  | _____            | _____             | _____            |  |
| 2. _____  | _____            | _____             | _____            |  |
| 3. _____  | _____            | _____             | _____            |  |
| 4. _____  | _____            | _____             | _____            |  |
| 5. _____  | _____            | _____             | _____            |  |
| 6. _____  | _____            | _____             | _____            |  |
| 7. _____  | _____            | _____             | _____            |  |
| _____ = Total Cover   |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br>___ 1 - Rapid Test for Hydrophytic Vegetation<br>___ 2 - Dominance Test is >50%<br>___ 3 - Prevalence Index is ≤3.0 <sup>1</sup><br>___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| <u>Herb Stratum</u> (Plot size: _____ )                       |                  |                   |                  |  |
| 1. _____  | _____            | _____             | _____            |  |
| 2. _____  | _____            | _____             | _____            |  |
| 3. _____  | _____            | _____             | _____            |  |
| 4. _____  | _____            | _____             | _____            |  |
| 5. _____  | _____            | _____             | _____            |  |
| 6. _____  | _____            | _____             | _____            |  |
| 7. _____  | _____            | _____             | _____            |  |
| 8. _____  | _____            | _____             | _____            |  |
| 9. _____  | _____            | _____             | _____            |  |
| 10. _____   | _____            | _____             | _____            |  |
| 11. _____   | _____            | _____             | _____            |  |
| 12. _____   | _____            | _____             | _____            |  |
| _____ = Total Cover   |                  |                   |                  | <b>Definitions of Vegetation Strata:</b><br><br><b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.<br><br><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.<br><br><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.<br><br><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.       |
| <u>Woody Vine Stratum</u> (Plot size: _____ )                 |                  |                   |                  |  |
| 1. _____  | _____            | _____             | _____            |  |
| 2. _____  | _____            | _____             | _____            |  |
| 3. _____  | _____            | _____             | _____            |  |
| 4. _____  | _____            | _____             | _____            |  |
| _____ = Total Cover   |                  |                   |                  | <b>Hydrophytic Vegetation Present?</b> Yes _____ No _____  |
| Remarks: (Include photo numbers here or on a separate sheet.) |                  |                   |                  |  |



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: \_\_\_\_\_ City/County: \_\_\_\_\_ Sampling Date: \_\_\_\_\_

Applicant/Owner: \_\_\_\_\_ State: \_\_\_\_\_ Sampling Point: \_\_\_\_\_

Investigator(s): \_\_\_\_\_ Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_

Subregion (LRR or MLRA): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No \_\_\_\_\_

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

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

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes _____ No _____<br>Hydric Soil Present? Yes _____ No _____<br>Wetland Hydrology Present? Yes _____ No _____ | <b>Is the Sampled Area within a Wetland?</b> Yes _____ No _____<br>If yes, optional Wetland Site ID: _____ |
| Remarks: (Explain alternative procedures here or in a separate report.)  |  |

### HYDROLOGY

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

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

Sampling Point: \_\_\_\_\_

| <u>Tree Stratum</u> (Plot size: _____ )                       | <u>Absolute % Cover</u> | <u>Dominant Species?</u> | <u>Indicator Status</u> |  |
|---|-------------------------|--------------------------|-------------------------|--|
| 1. _____  | _____                   | _____                    | _____                   | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)   |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
|   | _____ = Total Cover     |                          |                         | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by:<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____  |
| <u>Sapling/Shrub Stratum</u> (Plot size: _____ )              |                         |                          |                         |  |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
|   | _____ = Total Cover     |                          |                         | <b>Hydrophytic Vegetation Indicators:</b><br>___ 1 - Rapid Test for Hydrophytic Vegetation<br>___ 2 - Dominance Test is >50%<br>___ 3 - Prevalence Index is ≤3.0 <sup>1</sup><br>___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| <u>Herb Stratum</u> (Plot size: _____ )                       |                         |                          |                         |  |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
| 8. _____  | _____                   | _____                    | _____                   |  |
| 9. _____  | _____                   | _____                    | _____                   |  |
| 10. _____   | _____                   | _____                    | _____                   |  |
| 11. _____   | _____                   | _____                    | _____                   |  |
| 12. _____   | _____                   | _____                    | _____                   |  |
|   | _____ = Total Cover     |                          |                         | <b>Definitions of Vegetation Strata:</b><br><br><b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.<br><br><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.<br><br><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.<br><br><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.       |
| <u>Woody Vine Stratum</u> (Plot size: _____ )                 |                         |                          |                         |  |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
|   | _____ = Total Cover     |                          |                         | <b>Hydrophytic Vegetation Present?</b> Yes _____ No _____  |
| Remarks: (Include photo numbers here or on a separate sheet.) |                         |                          |                         |  |



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: \_\_\_\_\_ City/County: \_\_\_\_\_ Sampling Date: \_\_\_\_\_

Applicant/Owner: \_\_\_\_\_ State: \_\_\_\_\_ Sampling Point: \_\_\_\_\_

Investigator(s): \_\_\_\_\_ Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_

Subregion (LRR or MLRA): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No \_\_\_\_\_

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

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

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes _____ No _____<br>Hydric Soil Present? Yes _____ No _____<br>Wetland Hydrology Present? Yes _____ No _____ | <b>Is the Sampled Area within a Wetland?</b> Yes _____ No _____<br>If yes, optional Wetland Site ID: _____ |
| Remarks: (Explain alternative procedures here or in a separate report.)  |  |

### HYDROLOGY

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

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

Sampling Point: \_\_\_\_\_

| <u>Tree Stratum</u> (Plot size: _____ )                       | <u>Absolute % Cover</u> | <u>Dominant Species?</u> | <u>Indicator Status</u> |   |
|---|-------------------------|--------------------------|-------------------------|---|
| 1. _____  | _____                   | _____                    | _____                   | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)  |
| 2. _____  | _____                   | _____                    | _____                   |   |
| 3. _____  | _____                   | _____                    | _____                   |   |
| 4. _____  | _____                   | _____                    | _____                   |   |
| 5. _____  | _____                   | _____                    | _____                   |   |
| 6. _____  | _____                   | _____                    | _____                   |   |
| 7. _____  | _____                   | _____                    | _____                   |   |
| _____ = Total Cover   |                         |                          |                         | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by:<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____   |
| <u>Sapling/Shrub Stratum</u> (Plot size: _____ )              |                         |                          |                         |   |
| 1. _____  | _____                   | _____                    | _____                   |   |
| 2. _____  | _____                   | _____                    | _____                   |   |
| 3. _____  | _____                   | _____                    | _____                   |   |
| 4. _____  | _____                   | _____                    | _____                   |   |
| 5. _____  | _____                   | _____                    | _____                   |   |
| 6. _____  | _____                   | _____                    | _____                   |   |
| 7. _____  | _____                   | _____                    | _____                   |   |
| _____ = Total Cover   |                         |                          |                         |   |
| <u>Herb Stratum</u> (Plot size: _____ )                       |                         |                          |                         | <b>Hydrophytic Vegetation Indicators:</b><br>___ 1 - Rapid Test for Hydrophytic Vegetation<br>___ 2 - Dominance Test is >50%<br>___ 3 - Prevalence Index is $\leq 3.0^1$<br>___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. _____  | _____                   | _____                    | _____                   |   |
| 2. _____  | _____                   | _____                    | _____                   |   |
| 3. _____  | _____                   | _____                    | _____                   |   |
| 4. _____  | _____                   | _____                    | _____                   |   |
| 5. _____  | _____                   | _____                    | _____                   |   |
| 6. _____  | _____                   | _____                    | _____                   |   |
| 7. _____  | _____                   | _____                    | _____                   |   |
| 8. _____  | _____                   | _____                    | _____                   |   |
| 9. _____  | _____                   | _____                    | _____                   |   |
| 10. _____   | _____                   | _____                    | _____                   |   |
| 11. _____   | _____                   | _____                    | _____                   |   |
| 12. _____   | _____                   | _____                    | _____                   |   |
| _____ = Total Cover   |                         |                          |                         |   |
| <u>Woody Vine Stratum</u> (Plot size: _____ )                 |                         |                          |                         | <b>Definitions of Vegetation Strata:</b><br><br><b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.<br><br><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.<br><br><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.<br><br><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.  |
| 1. _____  | _____                   | _____                    | _____                   |   |
| 2. _____  | _____                   | _____                    | _____                   |   |
| 3. _____  | _____                   | _____                    | _____                   |   |
| 4. _____  | _____                   | _____                    | _____                   |   |
| _____ = Total Cover   |                         |                          |                         |   |
| <b>Hydrophytic Vegetation Present?</b> Yes _____ No _____     |                         |                          |                         |   |
| Remarks: (Include photo numbers here or on a separate sheet.) |                         |                          |                         |   |



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: \_\_\_\_\_ City/County: \_\_\_\_\_ Sampling Date: \_\_\_\_\_

Applicant/Owner: \_\_\_\_\_ State: \_\_\_\_\_ Sampling Point: \_\_\_\_\_

Investigator(s): \_\_\_\_\_ Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_

Subregion (LRR or MLRA): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No \_\_\_\_\_

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

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

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes _____ No _____<br>Hydric Soil Present? Yes _____ No _____<br>Wetland Hydrology Present? Yes _____ No _____ | <b>Is the Sampled Area within a Wetland?</b> Yes _____ No _____<br>If yes, optional Wetland Site ID: _____ |
| Remarks: (Explain alternative procedures here or in a separate report.)  |  |

### HYDROLOGY

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

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

Sampling Point: \_\_\_\_\_

| <u>Tree Stratum</u> (Plot size: _____ )                       | <u>Absolute % Cover</u> | <u>Dominant Species?</u> | <u>Indicator Status</u> |  |
|---|-------------------------|--------------------------|-------------------------|--|
| 1. _____  | _____                   | _____                    | _____                   | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)   |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
|   | _____ = Total Cover     |                          |                         | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by:<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____  |
| <u>Sapling/Shrub Stratum</u> (Plot size: _____ )              |                         |                          |                         |  |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
|   | _____ = Total Cover     |                          |                         | <b>Hydrophytic Vegetation Indicators:</b><br>___ 1 - Rapid Test for Hydrophytic Vegetation<br>___ 2 - Dominance Test is >50%<br>___ 3 - Prevalence Index is ≤3.0 <sup>1</sup><br>___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| <u>Herb Stratum</u> (Plot size: _____ )                       |                         |                          |                         |  |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
| 8. _____  | _____                   | _____                    | _____                   |  |
| 9. _____  | _____                   | _____                    | _____                   |  |
| 10. _____   | _____                   | _____                    | _____                   |  |
| 11. _____   | _____                   | _____                    | _____                   |  |
| 12. _____   | _____                   | _____                    | _____                   |  |
|   | _____ = Total Cover     |                          |                         | <b>Definitions of Vegetation Strata:</b><br><br><b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.<br><br><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.<br><br><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.<br><br><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.       |
| <u>Woody Vine Stratum</u> (Plot size: _____ )                 |                         |                          |                         |  |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
|   | _____ = Total Cover     |                          |                         | <b>Hydrophytic Vegetation Present?</b> Yes _____ No _____  |
| Remarks: (Include photo numbers here or on a separate sheet.) |                         |                          |                         |  |



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: \_\_\_\_\_ City/County: \_\_\_\_\_ Sampling Date: \_\_\_\_\_

Applicant/Owner: \_\_\_\_\_ State: \_\_\_\_\_ Sampling Point: \_\_\_\_\_

Investigator(s): \_\_\_\_\_ Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_

Subregion (LRR or MLRA): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No \_\_\_\_\_

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

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

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes _____ No _____<br>Hydric Soil Present? Yes _____ No _____<br>Wetland Hydrology Present? Yes _____ No _____ | <b>Is the Sampled Area within a Wetland?</b> Yes _____ No _____<br>If yes, optional Wetland Site ID: _____ |
| Remarks: (Explain alternative procedures here or in a separate report.)  |  |

### HYDROLOGY

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

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

Sampling Point: \_\_\_\_\_

| <u>Tree Stratum</u> (Plot size: _____ )                       | <u>Absolute % Cover</u> | <u>Dominant Species?</u> | <u>Indicator Status</u> |  |
|---|-------------------------|--------------------------|-------------------------|--|
| 1. _____  | _____                   | _____                    | _____                   | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)   |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
| _____ = Total Cover   |                         |                          |                         | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by:<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____  |
| <u>Sapling/Shrub Stratum</u> (Plot size: _____ )              |                         |                          |                         |  |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
| _____ = Total Cover   |                         |                          |                         |  |
| <u>Herb Stratum</u> (Plot size: _____ )                       |                         |                          |                         | <b>Hydrophytic Vegetation Indicators:</b><br>___ 1 - Rapid Test for Hydrophytic Vegetation<br>___ 2 - Dominance Test is >50%<br>___ 3 - Prevalence Index is ≤3.0 <sup>1</sup><br>___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
| 8. _____  | _____                   | _____                    | _____                   |  |
| 9. _____  | _____                   | _____                    | _____                   |  |
| 10. _____   | _____                   | _____                    | _____                   |  |
| 11. _____   | _____                   | _____                    | _____                   |  |
| 12. _____   | _____                   | _____                    | _____                   |  |
| _____ = Total Cover   |                         |                          |                         |  |
| <u>Woody Vine Stratum</u> (Plot size: _____ )                 |                         |                          |                         | <b>Definitions of Vegetation Strata:</b><br><br><b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.<br><br><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.<br><br><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.<br><br><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.       |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| _____ = Total Cover   |                         |                          |                         |  |
| <b>Hydrophytic Vegetation Present?</b> Yes _____ No _____     |                         |                          |                         |  |
| Remarks: (Include photo numbers here or on a separate sheet.) |                         |                          |                         |  |



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: \_\_\_\_\_ City/County: \_\_\_\_\_ Sampling Date: \_\_\_\_\_

Applicant/Owner: \_\_\_\_\_ State: \_\_\_\_\_ Sampling Point: \_\_\_\_\_

Investigator(s): \_\_\_\_\_ Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_

Subregion (LRR or MLRA): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No \_\_\_\_\_

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

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

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes _____ No _____<br>Hydric Soil Present? Yes _____ No _____<br>Wetland Hydrology Present? Yes _____ No _____ | <b>Is the Sampled Area within a Wetland?</b> Yes _____ No _____<br>If yes, optional Wetland Site ID: _____ |
| Remarks: (Explain alternative procedures here or in a separate report.)  |  |

### HYDROLOGY

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

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

Sampling Point: \_\_\_\_\_

| <u>Tree Stratum</u> (Plot size: _____ )                       | <u>Absolute % Cover</u> | <u>Dominant Species?</u> | <u>Indicator Status</u> |  |
|---|-------------------------|--------------------------|-------------------------|--|
| 1. _____  | _____                   | _____                    | _____                   | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)   |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
| _____ = Total Cover   |                         |                          |                         | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by:<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____  |
| <u>Sapling/Shrub Stratum</u> (Plot size: _____ )              |                         |                          |                         |  |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
| _____ = Total Cover   |                         |                          |                         |  |
| <u>Herb Stratum</u> (Plot size: _____ )                       |                         |                          |                         | <b>Hydrophytic Vegetation Indicators:</b><br>___ 1 - Rapid Test for Hydrophytic Vegetation<br>___ 2 - Dominance Test is >50%<br>___ 3 - Prevalence Index is ≤3.0 <sup>1</sup><br>___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
| 8. _____  | _____                   | _____                    | _____                   |  |
| 9. _____  | _____                   | _____                    | _____                   |  |
| 10. _____   | _____                   | _____                    | _____                   |  |
| 11. _____   | _____                   | _____                    | _____                   |  |
| 12. _____   | _____                   | _____                    | _____                   |  |
| _____ = Total Cover   |                         |                          |                         |  |
| <u>Woody Vine Stratum</u> (Plot size: _____ )                 |                         |                          |                         | <b>Definitions of Vegetation Strata:</b><br><br><b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.<br><br><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.<br><br><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.<br><br><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.       |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| _____ = Total Cover   |                         |                          |                         |  |
| <b>Hydrophytic Vegetation Present?</b> Yes _____ No _____     |                         |                          |                         |  |
| Remarks: (Include photo numbers here or on a separate sheet.) |                         |                          |                         |  |



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: \_\_\_\_\_ City/County: \_\_\_\_\_ Sampling Date: \_\_\_\_\_

Applicant/Owner: \_\_\_\_\_ State: \_\_\_\_\_ Sampling Point: \_\_\_\_\_

Investigator(s): \_\_\_\_\_ Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_

Subregion (LRR or MLRA): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No \_\_\_\_\_

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

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

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes _____ No _____<br>Hydric Soil Present? Yes _____ No _____<br>Wetland Hydrology Present? Yes _____ No _____ | <b>Is the Sampled Area within a Wetland?</b> Yes _____ No _____<br>If yes, optional Wetland Site ID: _____ |
| Remarks: (Explain alternative procedures here or in a separate report.)  |  |

### HYDROLOGY

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

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

Sampling Point: \_\_\_\_\_

| <u>Tree Stratum</u> (Plot size: _____ )                       | <u>Absolute % Cover</u> | <u>Dominant Species?</u> | <u>Indicator Status</u> |  |
|---|-------------------------|--------------------------|-------------------------|--|
| 1. _____  | _____                   | _____                    | _____                   | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)   |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
|   | _____ = Total Cover     |                          |                         | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by:<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____  |
| <u>Sapling/Shrub Stratum</u> (Plot size: _____ )              |                         |                          |                         |  |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
|   | _____ = Total Cover     |                          |                         | <b>Hydrophytic Vegetation Indicators:</b><br>___ 1 - Rapid Test for Hydrophytic Vegetation<br>___ 2 - Dominance Test is >50%<br>___ 3 - Prevalence Index is ≤3.0 <sup>1</sup><br>___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| <u>Herb Stratum</u> (Plot size: _____ )                       |                         |                          |                         |  |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
| 8. _____  | _____                   | _____                    | _____                   |  |
| 9. _____  | _____                   | _____                    | _____                   |  |
| 10. _____   | _____                   | _____                    | _____                   |  |
| 11. _____   | _____                   | _____                    | _____                   |  |
| 12. _____   | _____                   | _____                    | _____                   |  |
|   | _____ = Total Cover     |                          |                         | <b>Definitions of Vegetation Strata:</b><br><br><b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.<br><br><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.<br><br><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.<br><br><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.       |
| <u>Woody Vine Stratum</u> (Plot size: _____ )                 |                         |                          |                         |  |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
|   | _____ = Total Cover     |                          |                         | <b>Hydrophytic Vegetation Present?</b> Yes _____ No _____  |
| Remarks: (Include photo numbers here or on a separate sheet.) |                         |                          |                         |  |



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: \_\_\_\_\_ City/County: \_\_\_\_\_ Sampling Date: \_\_\_\_\_

Applicant/Owner: \_\_\_\_\_ State: \_\_\_\_\_ Sampling Point: \_\_\_\_\_

Investigator(s): \_\_\_\_\_ Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_

Subregion (LRR or MLRA): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No \_\_\_\_\_

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

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

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes _____ No _____<br>Hydric Soil Present? Yes _____ No _____<br>Wetland Hydrology Present? Yes _____ No _____ | <b>Is the Sampled Area within a Wetland?</b> Yes _____ No _____<br>If yes, optional Wetland Site ID: _____ |
| Remarks: (Explain alternative procedures here or in a separate report.)  |  |

### HYDROLOGY

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

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

Sampling Point: \_\_\_\_\_

| <u>Tree Stratum</u> (Plot size: _____ )                       | <u>Absolute % Cover</u> | <u>Dominant Species?</u> | <u>Indicator Status</u> |  |
|---|-------------------------|--------------------------|-------------------------|--|
| 1. _____  | _____                   | _____                    | _____                   | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)   |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
|   | _____ = Total Cover     |                          |                         | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by:<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____  |
| <u>Sapling/Shrub Stratum</u> (Plot size: _____ )              |                         |                          |                         |  |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
|   | _____ = Total Cover     |                          |                         | <b>Hydrophytic Vegetation Indicators:</b><br>___ 1 - Rapid Test for Hydrophytic Vegetation<br>___ 2 - Dominance Test is >50%<br>___ 3 - Prevalence Index is ≤3.0 <sup>1</sup><br>___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| <u>Herb Stratum</u> (Plot size: _____ )                       |                         |                          |                         |  |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
| 8. _____  | _____                   | _____                    | _____                   |  |
| 9. _____  | _____                   | _____                    | _____                   |  |
| 10. _____   | _____                   | _____                    | _____                   |  |
| 11. _____   | _____                   | _____                    | _____                   |  |
| 12. _____   | _____                   | _____                    | _____                   |  |
|   | _____ = Total Cover     |                          |                         | <b>Definitions of Vegetation Strata:</b><br><br><b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.<br><br><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.<br><br><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.<br><br><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.       |
| <u>Woody Vine Stratum</u> (Plot size: _____ )                 |                         |                          |                         |  |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
|   | _____ = Total Cover     |                          |                         | <b>Hydrophytic Vegetation Present?</b> Yes _____ No _____  |
| Remarks: (Include photo numbers here or on a separate sheet.) |                         |                          |                         |  |



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: \_\_\_\_\_ City/County: \_\_\_\_\_ Sampling Date: \_\_\_\_\_

Applicant/Owner: \_\_\_\_\_ State: \_\_\_\_\_ Sampling Point: \_\_\_\_\_

Investigator(s): \_\_\_\_\_ Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_

Subregion (LRR or MLRA): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No \_\_\_\_\_

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

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

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes _____ No _____<br>Hydric Soil Present? Yes _____ No _____<br>Wetland Hydrology Present? Yes _____ No _____ | <b>Is the Sampled Area within a Wetland?</b> Yes _____ No _____<br>If yes, optional Wetland Site ID: _____ |
| Remarks: (Explain alternative procedures here or in a separate report.)  |  |

### HYDROLOGY

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

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

Sampling Point: \_\_\_\_\_

| <u>Tree Stratum</u> (Plot size: _____ )                       | <u>Absolute % Cover</u> | <u>Dominant Species?</u> | <u>Indicator Status</u> |  |
|---|-------------------------|--------------------------|-------------------------|--|
| 1. _____  | _____                   | _____                    | _____                   | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)   |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
|   | _____ = Total Cover     |                          |                         | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by:<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____  |
| <u>Sapling/Shrub Stratum</u> (Plot size: _____ )              |                         |                          |                         |  |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
|   | _____ = Total Cover     |                          |                         | <b>Hydrophytic Vegetation Indicators:</b><br>___ 1 - Rapid Test for Hydrophytic Vegetation<br>___ 2 - Dominance Test is >50%<br>___ 3 - Prevalence Index is ≤3.0 <sup>1</sup><br>___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| <u>Herb Stratum</u> (Plot size: _____ )                       |                         |                          |                         |  |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
| 8. _____  | _____                   | _____                    | _____                   |  |
| 9. _____  | _____                   | _____                    | _____                   |  |
| 10. _____   | _____                   | _____                    | _____                   |  |
| 11. _____   | _____                   | _____                    | _____                   |  |
| 12. _____   | _____                   | _____                    | _____                   |  |
|   | _____ = Total Cover     |                          |                         | <b>Definitions of Vegetation Strata:</b><br><br><b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.<br><br><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.<br><br><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.<br><br><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.       |
| <u>Woody Vine Stratum</u> (Plot size: _____ )                 |                         |                          |                         |  |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
|   | _____ = Total Cover     |                          |                         | <b>Hydrophytic Vegetation Present?</b> Yes _____ No _____  |
| Remarks: (Include photo numbers here or on a separate sheet.) |                         |                          |                         |  |



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: \_\_\_\_\_ City/County: \_\_\_\_\_ Sampling Date: \_\_\_\_\_

Applicant/Owner: \_\_\_\_\_ State: \_\_\_\_\_ Sampling Point: \_\_\_\_\_

Investigator(s): \_\_\_\_\_ Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_

Subregion (LRR or MLRA): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No \_\_\_\_\_

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

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

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes _____ No _____<br>Hydric Soil Present? Yes _____ No _____<br>Wetland Hydrology Present? Yes _____ No _____ | <b>Is the Sampled Area within a Wetland?</b> Yes _____ No _____<br>If yes, optional Wetland Site ID: _____ |
| Remarks: (Explain alternative procedures here or in a separate report.)  |  |

### HYDROLOGY

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

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

Sampling Point: \_\_\_\_\_

| <u>Tree Stratum</u> (Plot size: _____ )                       | <u>Absolute % Cover</u> | <u>Dominant Species?</u> | <u>Indicator Status</u> |  |
|---|-------------------------|--------------------------|-------------------------|--|
| 1. _____  | _____                   | _____                    | _____                   | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)   |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
| _____ = Total Cover   |                         |                          |                         | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by:<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____  |
| <u>Sapling/Shrub Stratum</u> (Plot size: _____ )              |                         |                          |                         |  |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
| _____ = Total Cover   |                         |                          |                         |  |
| <u>Herb Stratum</u> (Plot size: _____ )                       |                         |                          |                         | <b>Hydrophytic Vegetation Indicators:</b><br>___ 1 - Rapid Test for Hydrophytic Vegetation<br>___ 2 - Dominance Test is >50%<br>___ 3 - Prevalence Index is ≤3.0 <sup>1</sup><br>___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
| 8. _____  | _____                   | _____                    | _____                   |  |
| 9. _____  | _____                   | _____                    | _____                   |  |
| 10. _____   | _____                   | _____                    | _____                   |  |
| 11. _____   | _____                   | _____                    | _____                   |  |
| 12. _____   | _____                   | _____                    | _____                   |  |
| _____ = Total Cover   |                         |                          |                         |  |
| <u>Woody Vine Stratum</u> (Plot size: _____ )                 |                         |                          |                         | <b>Definitions of Vegetation Strata:</b><br><br><b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.<br><br><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.<br><br><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.<br><br><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.       |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| _____ = Total Cover   |                         |                          |                         | <b>Hydrophytic Vegetation Present?</b> Yes _____ No _____  |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| _____ = Total Cover   |                         |                          |                         |  |
| Remarks: (Include photo numbers here or on a separate sheet.) |                         |                          |                         |  |



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: \_\_\_\_\_ City/County: \_\_\_\_\_ Sampling Date: \_\_\_\_\_

Applicant/Owner: \_\_\_\_\_ State: \_\_\_\_\_ Sampling Point: \_\_\_\_\_

Investigator(s): \_\_\_\_\_ Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_

Subregion (LRR or MLRA): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No \_\_\_\_\_

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

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

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes _____ No _____<br>Hydric Soil Present? Yes _____ No _____<br>Wetland Hydrology Present? Yes _____ No _____ | <b>Is the Sampled Area within a Wetland?</b> Yes _____ No _____<br>If yes, optional Wetland Site ID: _____ |
| Remarks: (Explain alternative procedures here or in a separate report.)  |  |

### HYDROLOGY

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

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

Sampling Point: \_\_\_\_\_

| <u>Tree Stratum</u> (Plot size: _____ )                       | <u>Absolute % Cover</u> | <u>Dominant Species?</u> | <u>Indicator Status</u> |  |
|---|-------------------------|--------------------------|-------------------------|--|
| 1. _____  | _____                   | _____                    | _____                   | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)   |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
| _____ = Total Cover   |                         |                          |                         | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by:<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____  |
| <u>Sapling/Shrub Stratum</u> (Plot size: _____ )              |                         |                          |                         |  |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
| _____ = Total Cover   |                         |                          |                         |  |
| <u>Herb Stratum</u> (Plot size: _____ )                       |                         |                          |                         | <b>Hydrophytic Vegetation Indicators:</b><br>___ 1 - Rapid Test for Hydrophytic Vegetation<br>___ 2 - Dominance Test is >50%<br>___ 3 - Prevalence Index is ≤3.0 <sup>1</sup><br>___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| 5. _____  | _____                   | _____                    | _____                   |  |
| 6. _____  | _____                   | _____                    | _____                   |  |
| 7. _____  | _____                   | _____                    | _____                   |  |
| 8. _____  | _____                   | _____                    | _____                   |  |
| 9. _____  | _____                   | _____                    | _____                   |  |
| 10. _____   | _____                   | _____                    | _____                   |  |
| 11. _____   | _____                   | _____                    | _____                   |  |
| 12. _____   | _____                   | _____                    | _____                   |  |
| _____ = Total Cover   |                         |                          |                         |  |
| <u>Woody Vine Stratum</u> (Plot size: _____ )                 |                         |                          |                         | <b>Definitions of Vegetation Strata:</b><br><br><b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.<br><br><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.<br><br><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.<br><br><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.       |
| 1. _____  | _____                   | _____                    | _____                   |  |
| 2. _____  | _____                   | _____                    | _____                   |  |
| 3. _____  | _____                   | _____                    | _____                   |  |
| 4. _____  | _____                   | _____                    | _____                   |  |
| _____ = Total Cover   |                         |                          |                         |  |
| <b>Hydrophytic Vegetation Present?</b> Yes _____ No _____     |                         |                          |                         |  |
| Remarks: (Include photo numbers here or on a separate sheet.) |                         |                          |                         |  |



## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: \_\_\_\_\_ City/County: \_\_\_\_\_ Sampling Date: \_\_\_\_\_

Applicant/Owner: \_\_\_\_\_ State: \_\_\_\_\_ Sampling Point: \_\_\_\_\_

Investigator(s): \_\_\_\_\_ Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_

Subregion (LRR or MLRA): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No \_\_\_\_\_

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

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

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes _____ No _____<br>Hydric Soil Present? Yes _____ No _____<br>Wetland Hydrology Present? Yes _____ No _____ | <b>Is the Sampled Area within a Wetland?</b> Yes _____ No _____<br>If yes, optional Wetland Site ID: _____ |
| Remarks: (Explain alternative procedures here or in a separate report.)  |  |

### HYDROLOGY

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

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

Sampling Point: \_\_\_\_\_

| <u>Tree Stratum</u> (Plot size: _____ )                       | Absolute % Cover    | Dominant Species? | Indicator Status |  |
|---|---------------------|-------------------|------------------|--|
| 1. _____  | _____               | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)   |
| 2. _____  | _____               | _____             | _____            |  |
| 3. _____  | _____               | _____             | _____            |  |
| 4. _____  | _____               | _____             | _____            |  |
| 5. _____  | _____               | _____             | _____            |  |
| 6. _____  | _____               | _____             | _____            |  |
| 7. _____  | _____               | _____             | _____            |  |
|   | _____ = Total Cover |                   |                  | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by:<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____  |
| <u>Sapling/Shrub Stratum</u> (Plot size: _____ )              |                     |                   |                  |  |
| 1. _____  | _____               | _____             | _____            |  |
| 2. _____  | _____               | _____             | _____            |  |
| 3. _____  | _____               | _____             | _____            |  |
| 4. _____  | _____               | _____             | _____            |  |
| 5. _____  | _____               | _____             | _____            |  |
| 6. _____  | _____               | _____             | _____            |  |
| 7. _____  | _____               | _____             | _____            |  |
|   | _____ = Total Cover |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br>___ 1 - Rapid Test for Hydrophytic Vegetation<br>___ 2 - Dominance Test is >50%<br>___ 3 - Prevalence Index is ≤3.0 <sup>1</sup><br>___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| <u>Herb Stratum</u> (Plot size: _____ )                       |                     |                   |                  |  |
| 1. _____  | _____               | _____             | _____            |  |
| 2. _____  | _____               | _____             | _____            |  |
| 3. _____  | _____               | _____             | _____            |  |
| 4. _____  | _____               | _____             | _____            |  |
| 5. _____  | _____               | _____             | _____            |  |
| 6. _____  | _____               | _____             | _____            |  |
| 7. _____  | _____               | _____             | _____            |  |
| 8. _____  | _____               | _____             | _____            |  |
| 9. _____  | _____               | _____             | _____            |  |
| 10. _____   | _____               | _____             | _____            |  |
| 11. _____   | _____               | _____             | _____            |  |
| 12. _____   | _____               | _____             | _____            |  |
|   | _____ = Total Cover |                   |                  | <b>Definitions of Vegetation Strata:</b><br><br><b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.<br><br><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.<br><br><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.<br><br><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.       |
| <u>Woody Vine Stratum</u> (Plot size: _____ )                 |                     |                   |                  |  |
| 1. _____  | _____               | _____             | _____            |  |
| 2. _____  | _____               | _____             | _____            |  |
| 3. _____  | _____               | _____             | _____            |  |
| 4. _____  | _____               | _____             | _____            |  |
|   | _____ = Total Cover |                   |                  | <b>Hydrophytic Vegetation Present?</b> Yes _____ No _____  |
| Remarks: (Include photo numbers here or on a separate sheet.) |                     |                   |                  |  |



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

Applicant: All States Materials Group Prepared by: Emma Mrowka Project location: Deerfield, MA DEP File #: \_\_\_\_\_

Check all that apply:

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

## Section I.

| Vegetation   | Observation Plot Number: <u>SP7</u> |                         | Transect Number:              | Date of Delineation: <u>8/23/2022</u> |
|--|-------------------------------------|-------------------------|-------------------------------|---------------------------------------|
| A. Sample Layer & Plant Species<br>(by common/scientific name) | B. Percent Cover<br>(or basal Area) | C. Percent<br>Dominance | D. Dominant Plant (yes or no) | E. Wetland Indicator Category*        |
| <b>Tree</b>  |                                     |                         |                               |                                       |
| Eastern hemlock/ <i>Tsuga canadensis</i>                       | 40%                                 | 80%                     | Yes                           | FACU *                                |
| American elm/ <i>Ulmus americana</i>                           | 5%                                  | 10%                     | No                            | FACW *                                |
| Green ash/ <i>Fraxinus pennsylvanica</i>                       | 5%                                  | 10%                     | No                            | FACW *                                |
| <b>Sapling/Shrub</b>   |                                     |                         |                               |                                       |
| Northern spicebush/ <i>Lindera benzoin</i>                     | 5%                                  | 100%                    | Yes                           | FACW *                                |
| <b>Ground Cover</b>  |                                     |                         |                               |                                       |
| Interrupted fern/ <i>Osmunda claytoniana</i>                   | 15%                                 | 43%                     | Yes                           | FAC *                                 |
| Marginal wood fern/ <i>Dryopteris marginalis</i>               | 15%                                 | 43%                     | Yes                           | FACU                                  |
| Eastern poison ivy/ <i>Toxicodendron radicans</i>              | 5%                                  | 14%                     | No                            | FAC *                                 |

\* Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

### Vegetation conclusion:

Number of dominant wetland indicator plants: 3

Number of dominant non-wetland indicator plants: 1

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

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

## Section II. Indicators of Hydrology

### Hydric Soil Interpretation

#### 1. Soil Survey

Is there a published soil survey for this site?  no  
 title/date: Soil Survey of Franklin County, Massachusetts.  
 map number: MA011. Available at NRCS Web Soil Survey  
 soil type mapped: Amostown fine sandy loam, 3 to 8 percent slopes  
 hydric soil inclusions: none, 0% hydric rating

Are field observations consistent with soil survey? yes  no

Remarks:

Soils are natural with horizon development, but are not similar in profile to Amostown

#### 2. Soil Description

| Horizon | Depth | Matrix Color | Mottles Color |
|---------|-------|--------------|---------------|
| A       | 0-16  | 7.5YR 3/2    |               |

Remarks:

Dark A horizon characteristic of forested landscapes. No redoximorphic features observed.

#### 3. Other:

Conclusion: Is soil hydric? yes  no

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

- Site Inundated: \_\_\_\_\_
- Depth to free water in observation hole: \_\_\_\_\_
- Depth to soil saturation in observation hole: \_\_\_\_\_
- Water marks: \_\_\_\_\_
- Drift lines: \_\_\_\_\_
- Sediment Deposits: \_\_\_\_\_
- Drainage patterns in BVW: Some drainage patterns observed in the wetland at the toe of slope
- Oxidized rhizospheres: \_\_\_\_\_
- Water-stained leaves: \_\_\_\_\_
- Recorded Data (streams, lake, or tidal gauge; aerial photo; other):  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
- Other: Geomorphic position - Wetland is located at the toe of slope, within a stream valley. The wetland drains to the stream at one narrow location.

#### Vegetation and Hydrology Conclusion

|   | Yes      | No       |
|---|----------|----------|
| Number of wetland indicator plants $\geq$ # of non-wetland indicator plants | <u>X</u> | _____    |
| <b>Wetland hydrology present:</b>   |          |          |
| Hydric soil present   | _____    | <u>X</u> |
| Other indicators of hydrology present                                       | <u>X</u> | _____    |
| <b>Sample location is in a BVW</b>  | <u>X</u> | _____    |

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

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

Applicant: All States Materials Group Prepared by: Emma Mrowka Project location: Deerfield, MA DEP File #: \_\_\_\_\_

Check all that apply:

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

## Section I.

| Vegetation   | Observation Plot Number: <u>SP14</u> |                         | Transect Number:              | Date of Delineation: <u>8/23/2022</u> |
|--|--------------------------------------|-------------------------|-------------------------------|---------------------------------------|
| A. Sample Layer & Plant Species<br>(by common/scientific name) | B. Percent Cover<br>(or basal Area)  | C. Percent<br>Dominance | D. Dominant Plant (yes or no) | E. Wetland Indicator Category*        |
| <b>Tree</b>  |                                      |                         |                               |                                       |
| Eastern hemlock/ <i>Tsuga canadensis</i>                       | 20%                                  | 66%                     | Yes                           | FACU *                                |
| American elm/ <i>Ulmus americana</i>                           | 5%                                   | 17%                     | No                            | FACW *                                |
| Green ash/ <i>Fraxinus pennsylvanica</i>                       | 5%                                   | 17%                     | No                            | FACW *                                |
| <b>Sapling/Shrub</b>   |                                      |                         |                               |                                       |
| Northern spicebush/ <i>Lindera benzoin</i>                     | 30%                                  | 100%                    | Yes                           | FACW *                                |
| <b>Ground Cover</b>  |                                      |                         |                               |                                       |
| Skunk cabbage/ <i>Symplocarpus foetidus</i>                    | 10%                                  | 40%                     | Yes                           | FAC *                                 |
| Marginal wood fern/ <i>Dryopteris marginalis</i>               | 10%                                  | 40%                     | Yes                           | FACU                                  |
| Eastern poison ivy/ <i>Toxicodendron radicans</i>              | 5%                                   | 20%                     | Yes                           | FAC *                                 |

\* Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

### Vegetation conclusion:

Number of dominant wetland indicator plants: 4

Number of dominant non-wetland indicator plants: 1

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

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

## Section II. Indicators of Hydrology

### Hydric Soil Interpretation

#### 1. Soil Survey

Is there a published soil survey for this site?  no  
 title/date: Soil Survey of Franklin County, Massachusetts.  
 map number: MA011. Available at NRCS Web Soil Survey  
 soil type mapped: Amostown fine sandy loam, 3 to 8 percent slopes  
 hydric soil inclusions: none, 0% hydric rating

Are field observations consistent with soil survey? yes  no

Remarks:

Soils are natural with horizon development, but are not similar in profile to Amostown

#### 2. Soil Description

| Horizon | Depth | Matrix Color | Mottles Color |
|---------|-------|--------------|---------------|
| A       | 0-16  | 7.5YR 3/2    |               |

Remarks:

Dark A horizon characteristic of forested landscapes. No redoximorphic features observed.

#### 3. Other:

Conclusion: Is soil hydric? yes  no

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

- Site Inundated: \_\_\_\_\_
- Depth to free water in observation hole: \_\_\_\_\_
- Depth to soil saturation in observation hole: \_\_\_\_\_
- Water marks: \_\_\_\_\_
- Drift lines: \_\_\_\_\_
- Sediment Deposits: \_\_\_\_\_
- Drainage patterns in BVW: Some drainage patterns observed in the wetland at the toe of slope
- Oxidized rhizospheres: \_\_\_\_\_
- Water-stained leaves: \_\_\_\_\_
- Recorded Data (streams, lake, or tidal gauge; aerial photo; other):  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
- Other: Geomorphic position - Wetland is located at the toe of slope, within a stream valley. The wetland drains to the stream at one narrow location.

#### Vegetation and Hydrology Conclusion

|   | Yes      | No       |
|---|----------|----------|
| Number of wetland indicator plants<br>≥ # of non-wetland indicator plants | <u>X</u> | _____    |
| <b>Wetland hydrology present:</b>   |          |          |
| Hydric soil present   | _____    | <u>X</u> |
| Other indicators of hydrology present                                     | <u>X</u> | _____    |
| <b>Sample location is in a BVW</b>  | <u>X</u> | _____    |

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

# **APPENDIX B**

# **PHOTOGRAPHS**

**Kleinfelder**  
**Photograph Documentation**  
**Wetlands and Watercourses**

**Date of Photos:**  
10/28/2021

**Site Name:**  
Haul Road Improvements and New Pad Site

**Site Location:**  
901 River Road, Deerfield, MA

**Project #:**  
20221383.001A



Photo 1: Stream S1 upstream



Photo 2: Stream S1 culvert inlet

**Kleinfelder**  
**Photograph Documentation**  
**Wetlands and Watercourses**

**Date of Photos:**  
10/28/2021

**Site Name:**  
Haul Road Improvements and New Pad Site

**Site Location:**  
901 River Road, Deerfield, MA

**Project #:**  
20221383.001A



**Photo 3: Stream S1 culvert outlet**



**Photo 4: Stream S1 downstream**

**Kleinfelder  
Photograph Documentation  
Wetlands and Watercourses**

**Date of Photos:**  
10/28/2021

**Site Name:**  
Haul Road Improvements and New Pad Site

**Site Location:**  
901 River Road, Deerfield, MA

**Project #:**  
20221383.001A



**Photo 5: Stream S1 cross stream**



**Photo 6: Streams S1 and S2 confluence**

**Kleinfelder**  
**Photograph Documentation**  
**Wetlands and Watercourses**

**Date of Photos:**  
10/28/2021

**Site Name:**  
Haul Road Improvements and New Pad Site

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20221383.001A



**Photo 7: Stream S3 upstream**



**Photo 8: Stream S3 downstream**

**Kleinfelder  
Photograph Documentation  
Wetlands and Watercourses**

**Date of Photos:**  
10/28/2021

**Site Name:**  
Haul Road Improvements and New Pad Site

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20221383.001A



**Photo 9: Stream S3 cross stream**



**Photo 10: Stream S4 upstream**

**Kleinfelder  
Photograph Documentation  
Wetlands and Watercourses**

**Date of Photos:**  
10/28/2021

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Haul Road Improvements and New Pad Site

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**Project #:**  
20221383.001A



**Photo 11: Stream S4 downstream**



**Photo 12: Stream S4 cross stream**

**Kleinfelder  
Photograph Documentation  
Wetlands and Watercourses**

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10/28/2021

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Haul Road Improvements and New Pad Site

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20221383.001A



**Photo 13: Stream S5 downstream**



**Photo 14: Stream S5 upstream**

**Kleinfelder  
Photograph Documentation  
Wetlands and Watercourses**

**Date of Photos:**  
10/28/2021

**Site Name:**  
Haul Road Improvements and New Pad Site

**Site Location:**  
901 River Road, Deerfield, MA

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20221383.001A



Photo 15: Stream S5 cross stream



Photo 16: Stream S6 upstream

**Kleinfelder  
Photograph Documentation  
Wetlands and Watercourses**

**Date of Photos:**  
10/28/2021

**Site Name:**  
Haul Road Improvements and New Pad Site

**Site Location:**  
901 River Road, Deerfield, MA

**Project #:**  
20221383.001A



**Photo 17: Stream S7 upstream**



**Photo 18: Streams S7 and S7A  
downstream**

**Kleinfelder  
Photograph Documentation  
Wetlands and Watercourses**

**Date of Photos:**  
10/28/2021

**Site Name:**  
Haul Road Improvements and New Pad Site

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20221383.001A



Photo 19: Stream S7 confluence with S1



Photo 20: Wetland W1 view northwest

**Kleinfelder  
Photograph Documentation  
Wetlands and Watercourses**

**Date of Photos:**  
10/28/2021

**Site Name:**  
Haul Road Improvements and New Pad Site

**Site Location:**  
901 River Road, Deerfield, MA

**Project #:**  
20221383.001A



Photo 21: Upland for W2, view south



Photo 22: Wetland W2 view south

**Kleinfelder**  
**Photograph Documentation**  
**Wetlands and Watercourses**

**Date of Photos:**  
10/28/2021

**Site Name:**  
Haul Road Improvements and New Pad Site

**Site Location:**  
901 River Road, Deerfield, MA

**Project #:**  
20221383.001A



Photo 23: Upland for W2, view north



Photo 24: Upland at proposed pad, view south

**Kleinfelder  
Photograph Documentation  
Wetlands and Watercourses**

**Date of Photos:**  
10/28/2021

**Site Name:**  
Haul Road Improvements and New Pad Site

**Site Location:**  
901 River Road, Deerfield, MA

**Project #:**  
20221383.001A



Photo 25: Upland at northern extent of study area, view south

**Kleinfelder  
Photograph Documentation  
Wetlands and Watercourses**

**Date of Photos:**  
8/23/2022

**Site Name:**  
Haul Road Improvements and New Pad Site

**Site Location:**  
901 River Road, Deerfield, MA

**Project #:**  
20221383.001A



Photo 26: Wetland W3, view north



Photo 27: Wetland W3, view south

**Kleinfelder  
Photograph Documentation  
Wetlands and Watercourses**

**Date of Photos:**  
8/23/2022

**Site Name:**  
Haul Road Improvements and New Pad Site

**Site Location:**  
901 River Road, Deerfield, MA

**Project #:**  
20221383.001A



**Photo 28: Upland between W3 and S1**



**Photo 29: Wetland W4, view north**

**Kleinfelder**  
**Photograph Documentation**  
**Wetlands and Watercourses**

**Date of Photos:**  
8/23/2022

**Site Name:**  
Haul Road Improvements and New Pad Site

**Site Location:**  
901 River Road, Deerfield, MA

**Project #:**  
20221383.001A



Photo 30: Wetland W4, view west



Photo 31: Wetland W5, view south

**Kleinfelder  
Photograph Documentation  
Wetlands and Watercourses**

**Date of Photos:**  
8/23/2022

**Site Name:**  
Haul Road Improvements and New Pad Site

**Site Location:**  
901 River Road, Deerfield, MA

**Project #:**  
20221383.001A



Photo 32: Wetland W5, view west



Photo 33: Wetland W6, view north

**Kleinfelder  
Photograph Documentation  
Wetlands and Watercourses**

**Date of Photos:**  
8/23/2022

**Site Name:**  
Haul Road Improvements and New Pad Site

**Site Location:**  
901 River Road, Deerfield, MA

**Project #:**  
20221383.001A



**Photo 34: Wetland W6, view west**



ATTACHMENT D  
Stormwater Report

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ATTACHMENT E  
Wildlife Habitat Evaluation

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# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 1. Summary Sheet

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



All States Materials Group Haul Road Improvements

Project Name

901 River Road, Deerfield, MA 01342

Location

51,538 SF; 481 LF

Size of Area Being Impacted

10/24/2022

Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

| Name                | Waterbody/<br>Waterway | Wetland  | Upland*   | Total Area |
|---------------------|------------------------|----------|-----------|------------|
| 1. Bank             | Stream S1              | 399 LF   |           | 399 LF     |
| 2. Land Under Water | Stream S1              | 2,051 SF |           | 2,051 SF   |
| 3. Riverfront Area  | Stream S1              |          | 79,012 SF | 79,012 SF  |
| 4. Bank             | Stream S6              | 88 LF    |           | 88 LF      |
| 5.                  |                        |          |           |            |
| 6.                  |                        |          |           |            |
| 7.                  |                        |          |           |            |

\*Riverfront Area/BLSF

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

See Notice of Intent Narrative

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### Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

*Emma Mrowka*

Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Emma Mrowka

Typed or Printed Name



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

901 River Road Deerfield, MA 01342

Project Location (from NOI page 1)

Riverfront Area; 49,332 SF

Impact Area (number/name)

10/28/2021, 8/23/2022

Date(s) of Site Visit(s) and Data Collection

10/28/2021: Sunny, temperatures in the 50s; 8/23/2022: Cloudy, raining, temperatures in the low 70s

Weather Conditions During Site Visit (if snow cover, include depth)

Emma Mrowka

Person completing form per 310 CMR 10.60(1)(b)

10/24/2022

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

*Emma Mrowka*

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification

##### 1. For Wetland Resource Areas, complete the following:

System: \_\_\_\_\_

Subsystem: \_\_\_\_\_

Class: \_\_\_\_\_

Subclass: \_\_\_\_\_

Hydrology/Water Regime

Permanently flooded

Saturated

Intermittently exposed

Temporarily flooded

Semi-permanently flooded

Intermittently flooded

Seasonally flooded

Artificially flooded

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

Hemlock Forest

Community Name

Hemlock trees, sparse shrub and herb stratum dominated by striped maple, spicebush, and ferns

Vegetation Description

The Riverfront Area/Hemlock Forest community is within the stream valley of S1

Physical Description



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### B. Inventory (Plant community)

% Cover:  $\frac{85}{\text{Trees (> 20')}} \quad \frac{10}{\text{Shrubs (< 20')}} \quad \frac{0}{\text{Woody vines}} \quad \frac{0}{\text{Mosses}} \quad \frac{10}{\text{Herbaceous}}$

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "\*" designates a dominant plant species for the strata):

| Strata | Plant Species  | Strata | Plant Species       |
|--------|----------------|--------|---------------------|
| Tree   | Hemlock*       | Shrub  | Northern Spicebush* |
| Tree   | American Elm   | Shrub  | Witch Hazel*        |
| Tree   | Green Ash      | Herb   | Interrupted Fern*   |
| Tree   | White Pine     | Herb   | Christmas Fern      |
| Tree   | Sugar Maple    | Herb   | Poison Ivy          |
| Shrub  | Striped Maple* | Herb   | Marginal Fern*      |

#### C. Inventory (Soils)

| Soil Survey Unit                                | Drainage Class          | Texture (upper part) | Depth               | Depth to Water Table |
|---|-------------------------|----------------------|---------------------|----------------------|
| Birdsall mucky silt loam, 0 to 2 percent slopes | Very Poorly Drained     | Silt Loam            | More than 80 inches | 0 to 2 inches        |
| Amostown fine sandy loam, 3 to 8 percent slopes | Moderately Well Drained | Fine Sandy Loam      | More than 80 inches | 13 to 17 inches      |
| Poocham silt loam, 25 to 60 percent slopes      | Well Drained            | Silt Loam            | More than 80 inches | More than 80 inches  |

### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

Abundant                       Present                       Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

Abundant                       Present                       Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

Present                       Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

Present                       Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 2

Number (or density) of Standing Dead Trees (potential for cavities and perches):

0 2 0 0  
6-12" dbh 12-18" dbh 18-24" dbh > 24" dbh

Number of Tree Cavities in trunks or limbs of:

10  
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)

0  
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)

0  
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

Abundant  Present  Absent

Cover/Perches/Basking/Denning/Nesting Habitat

Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

Rock piles, crevices, or hollow logs suitable for:

otter  mink  porcupine  bear  bobcat  turkey vulture

Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

Present  Absent

Standing water present at least part of the growing season, suitable for use by

Breeding amphibians  Non-breeding amphibians (foraging, re-hydration)

Turtles  Foraging waterfowl

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

Present  Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

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### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

Present  Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

Present  Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

Present  Absent

Undercut or overhanging banks (small mammals, mink, weasels)

Present  Absent

Vertical sandy banks (bank swallow, kingfisher)

Present  Absent

Areas of ice-free open water in winter

Present  Absent

Mud flats

Present  Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

Present  Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

Present  Absent

Bank swallow colony

Present  Absent

Nest(s) present of

Bald Eagle  Osprey  Great Blue Heron

Den(s) present of

Otter  Mink  Beaver



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- 200' of Great Blue Heron or osprey nest(s)
- 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm  Present  Absent

Flooded > 25 cm (pied-billed grebe)  Present  Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm  Present  Absent

Flooded > 25 cm (least bittern, common moorhen)  Present  Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren)  Present  Absent

Flooded > 25 cm (least bittern, common moorhen)  Present  Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm  Present  Absent

Flooded > 25 cm (least bittern, common moorhen)  Present  Absent

#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size?   | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds)                                | 2.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

- |   |                     |   |  |
|---|---------------------|---|--|
| Is the impact area part of a wetland complex at least                                     | 2.5 acres in size?  | <input type="checkbox"/> Yes            | <input checked="" type="checkbox"/> No |
| (turtles, frogs, waterfowl, mammals)  | 5.0 acres in size?  | <input type="checkbox"/> Yes            | <input checked="" type="checkbox"/> No |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes            | <input checked="" type="checkbox"/> No |
|   | 25.0 acres in size? | <input type="checkbox"/> Yes            | <input checked="" type="checkbox"/> No |
| For upland resource areas is the impact area part of contiguous forested habitat at least |                     |   |  |
| (forest interior nesting birds)   | 50 acres in size?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No            |
|   | 100 acres in size?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No            |
|   | 250 acres in size?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No            |
|   | 500 acres in size?  | <input type="checkbox"/> Yes            | <input checked="" type="checkbox"/> No |
| (grassland nesting birds)   | > 1.0 acre in size? | <input type="checkbox"/> Yes            | <input checked="" type="checkbox"/> No |
| (special habitat such as gallery floodplain forest, alder thicket, etc.)                  | > 1.0 acre in size? | <input type="checkbox"/> Yes            | <input checked="" type="checkbox"/> No |

### B. Connectivity with adjoining natural habitats

- No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

### V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- Evidence of significant chemical contamination
- Evidence of significant levels of dumping
- Evidence of significant erosion or sedimentation problems
- Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- Disturbance from roads or highways
- Other human disturbance
- Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

| Habitat Characteristic                 | Amount Impacted in Impact Area | Current (entire site) | Post-Construction (entire site) |
|--|--------------------------------|-----------------------|---------------------------------|
| Example: standing dead trees 6-12" dbh | 4                              | 12                    | 8                               |
| Large woody debris on the ground       | 5                              | 40                    | 35                              |
|  |                                |                       |                                 |
|  |                                |                       |                                 |
|  |                                |                       |                                 |
|  |                                |                       |                                 |
|  |                                |                       |                                 |
|  |                                |                       |                                 |
|  |                                |                       |                                 |
|  |                                |                       |                                 |

Large woody debris is abundant within the stream valley of Stream S1. Woody debris presence decreases moving upslope out of the valley. See the NOI narrative describing adjacent rock quarry, existing haul road, and general site description.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

901 River Road Deerfield, MA 01342

Project Location (from NOI page 1)

Stream S1 bank (393 LF) and land under water (1,828 SF)

Impact Area (number/name)

10/28/2021, 8/23/2022

Date(s) of Site Visit(s) and Data Collection

10/28/2021: Sunny, temperatures in the 50s; 8/23/2022: Cloudy, raining, temperatures in the low 70s

Weather Conditions During Site Visit (if snow cover, include depth)

Emma Mrowka

10/24/2022

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

*Emma Mrowka*

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification

##### 1. For Wetland Resource Areas, complete the following:

System: Riverine

Subsystem: Upper Perennial

Class: Unconsolidated Bottom

Subclass: Cobble-Gravel

Hydrology/Water Regime

Permanently flooded

Saturated

Intermittently exposed

Temporarily flooded

Semi-permanently flooded

Intermittently flooded

Seasonally flooded

Artificially flooded

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

Community Name

Vegetation Description

Physical Description



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### B. Inventory (Plant community)

% Cover:  $\frac{85}{\text{Trees (> 20')}} \quad \frac{0}{\text{Shrubs (< 20')}} \quad \frac{0}{\text{Woody vines}} \quad \frac{0}{\text{Mosses}} \quad \frac{0}{\text{Herbaceous}}$

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "\*" designates a dominant plant species for the strata):

| Strata | Plant Species | Strata | Plant Species |
|--------|---------------|--------|---------------|
| Tree   | Hemlock*      |        |               |
|        |               |        |               |
|        |               |        |               |
|        |               |        |               |
|        |               |        |               |
|        |               |        |               |
|        |               |        |               |

#### C. Inventory (Soils)

|   |                     |
|---|---------------------|
| Birdsall mucky silt loam, 0 to 2 percent slopes | very poorly drained |
| Soil Survey Unit                                | Drainage Class      |
| silt loam                                       | more than 80 inches |
| Texture (upper part)                            | Depth               |
| 0-2 inches                                      |                     |
| Depth to Water Table                            |                     |

### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

#### Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

Abundant                       Present                       Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

Abundant                       Present                       Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

Present                       Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

Present                       Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

0 0 0 0  
6-12" dbh 12-18" dbh 18-24" dbh > 24" dbh

Number of Tree Cavities in trunks or limbs of:

0  
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)

0  
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)

0  
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

Abundant  Present  Absent

Cover/Perches/Basking/Denning/Nesting Habitat

Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

Rock piles, crevices, or hollow logs suitable for:

otter  mink  porcupine  bear  bobcat  turkey vulture

Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

Present  Absent

Standing water present at least part of the growing season, suitable for use by

Breeding amphibians  Non-breeding amphibians (foraging, re-hydration)

Turtles  Foraging waterfowl

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

Present  Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

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### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

Present  Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

Present  Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

Present  Absent

Undercut or overhanging banks (small mammals, mink, weasels)

Present  Absent

Vertical sandy banks (bank swallow, kingfisher)

Present  Absent

Areas of ice-free open water in winter

Present  Absent

Mud flats

Present  Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

Present  Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

Present  Absent

Bank swallow colony

Present  Absent

Nest(s) present of

Bald Eagle  Osprey  Great Blue Heron

Den(s) present of

Otter  Mink  Beaver



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- 200' of Great Blue Heron or osprey nest(s)
- 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm  Present  Absent

Flooded > 25 cm (pied-billed grebe)  Present  Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm  Present  Absent

Flooded > 25 cm (least bittern, common moorhen)  Present  Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren)  Present  Absent

Flooded > 25 cm (least bittern, common moorhen)  Present  Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm  Present  Absent

Flooded > 25 cm (least bittern, common moorhen)  Present  Absent

#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size?   | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds)                                | 2.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of a wetland complex at least                                     | 2.5 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (turtles, frogs, waterfowl, mammals)  | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 25.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| For upland resource areas is the impact area part of contiguous forested habitat at least |                     |                              |  |
| (forest interior nesting birds)   | 50 acres in size?   | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
|   | 100 acres in size?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
|   | 250 acres in size?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
|   | 500 acres in size?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
| (grassland nesting birds)   | > 1.0 acre in size? | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
| (special habitat such as gallery floodplain forest, alder thicket, etc.)                  | > 1.0 acre in size? | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |

### B. Connectivity with adjoining natural habitats

- No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

### V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- Evidence of significant chemical contamination
- Evidence of significant levels of dumping
- Evidence of significant erosion or sedimentation problems
- Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- Disturbance from roads or highways
- Other human disturbance
- Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

| Habitat Characteristic                    | Amount Impacted in Impact Area | Current (entire site) | Post-Construction (entire site) |
|---|--------------------------------|-----------------------|---------------------------------|
| Example: standing dead trees 6-12" dbh    | 4                              | 12                    | 8                               |
| Rocks, logs, roots under water surface    | 2                              | 20                    | 18                              |
| Rocks, logs, branches above water surface | 3                              | 20                    | 17                              |
| Medium to large flat rocks within stream  | 5                              | 30                    | 25                              |
| Flat rocks and logs on banks              | 2                              | 30                    | 28                              |
| Undercut or overhanging banks             | 2                              | 15                    | 13                              |
|   |                                |                       |                                 |
|   |                                |                       |                                 |
|   |                                |                       |                                 |
|   |                                |                       |                                 |

The dominant substrate of stream S1 is cobble, and there are a few medium to large flat rocks located upstream of the culvert inlet, within the impact area. Logs and tree roots within the stream and on the banks are also present within the impact area, as is a small area of undercut bank. These stream features are prevalent throughout the observed stream reach.

The impact area is already degraded due to the current culvert, which inhibits downstream connectivity, as it is sized too small and becomes blocked at the inlet. A plunge pool is present at the outlet. The proposed culvert would improve habitat connectivity.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (for each wetland or non-wetland resource area)

#### I. General Information

901 River Road Deerfield, MA 01342

Project Location (from NOI page 1)

Stream S6 bank (88 LF) and land under water (378 SF)

Impact Area (number/name)

10/28/2021, 8/23/2022

Date(s) of Site Visit(s) and Data Collection

10/28/2021: Sunny, temperatures in the 50s; 8/23/2022: Cloudy, raining, temperatures in the low 70s

Weather Conditions During Site Visit (if snow cover, include depth)

Emma Mrowka

10/24/2022

Person completing form per 310 CMR 10.60(1)(b)

Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

*Emma Mrowka*

Signature

#### II. Site Description (complete A or B under Classification - see instructions for full description)

##### A. Classification

##### 1. For Wetland Resource Areas, complete the following:

System: Riverine

Subsystem: Intermittent

Class: Streambed

Subclass: Cobble-Gravel

##### Hydrology/Water Regime

Permanently flooded

Saturated

Intermittently exposed

Temporarily flooded

Semi-permanently flooded

Intermittently flooded

Seasonally flooded

Artificially flooded

##### 2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following.

Use a terrestrial classification system such as one of the two listed below:

a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. ([Department of Fish & Game Website](#))

b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

Community Name

Vegetation Description

Physical Description



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### B. Inventory (Plant community)

% Cover:  $\frac{60}{\text{Trees (> 20')}} \quad \frac{10}{\text{Shrubs (< 20')}} \quad \frac{0}{\text{Woody vines}} \quad \frac{0}{\text{Mosses}} \quad \frac{0}{\text{Herbaceous}}$

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "\*" designates a dominant plant species for the strata):

| Strata | Plant Species | Strata | Plant Species |
|--------|---------------|--------|---------------|
| Tree   | Hemlock*      |        |               |
| Shrub  | Sugar Maple*  |        |               |
|        |               |        |               |
|        |               |        |               |
|        |               |        |               |
|        |               |        |               |

#### C. Inventory (Soils)

|   |                     |
|---|---------------------|
| Birdsall mucky silt loam, 0 to 2 percent slopes | very poorly drained |
| Soil Survey Unit                                | Drainage Class      |
| silt loam                                       | more than 80 inches |
| Texture (upper part)                            | Depth               |
| 0-2 inches                                      |                     |
| Depth to Water Table                            |                     |

### III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

#### Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

Abundant       Present       Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

Abundant       Present       Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

Present       Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

Present       Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

0 0 0 0  
6-12" dbh 12-18" dbh 18-24" dbh > 24" dbh

Number of Tree Cavities in trunks or limbs of:

0  
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)

0  
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)

0  
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

Abundant  Present  Absent

Cover/Perches/Basking/Denning/Nesting Habitat

Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

Rock piles, crevices, or hollow logs suitable for:

otter  mink  porcupine  bear  bobcat  turkey vulture

Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

Present  Absent

Standing water present at least part of the growing season, suitable for use by

Breeding amphibians  Non-breeding amphibians (foraging, re-hydration)

Turtles  Foraging waterfowl

Sphagnum hummocks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

Present  Absent



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

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### Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

Present  Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

Present  Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

Present  Absent

Undercut or overhanging banks (small mammals, mink, weasels)

Present  Absent

Vertical sandy banks (bank swallow, kingfisher)

Present  Absent

Areas of ice-free open water in winter

Present  Absent

Mud flats

Present  Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

Present  Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

Present  Absent

Bank swallow colony

Present  Absent

Nest(s) present of

Bald Eagle  Osprey  Great Blue Heron

Den(s) present of

Otter  Mink  Beaver



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

Project area is within:

- 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area
- 200' of Great Blue Heron or osprey nest(s)
- 1400' of a Bald Eagle nest<sup>1</sup>

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm  Present  Absent

Flooded > 25 cm (pied-billed grebe)  Present  Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm  Present  Absent

Flooded > 25 cm (least bittern, common moorhen)  Present  Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren)  Present  Absent

Flooded > 25 cm (least bittern, common moorhen)  Present  Absent

Fine-leaved emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm  Present  Absent

Flooded > 25 cm (least bittern, common moorhen)  Present  Absent

#### IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of an emergent marsh at least | 1.0 acre in size?   | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (marsh and waterbirds)                                | 2.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

<sup>1</sup> 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

- |   |                     |                              |  |
|---|---------------------|------------------------------|--|
| Is the impact area part of a wetland complex at least                                     | 2.5 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| (turtles, frogs, waterfowl, mammals)  | 5.0 acres in size?  | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 10.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|   | 25.0 acres in size? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| For upland resource areas is the impact area part of contiguous forested habitat at least |                     |                              |  |
| (forest interior nesting birds)   | 50 acres in size?   | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
|   | 100 acres in size?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
|   | 250 acres in size?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
|   | 500 acres in size?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
| (grassland nesting birds)   | > 1.0 acre in size? | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |
| (special habitat such as gallery floodplain forest, alder thicket, etc.)                  | > 1.0 acre in size? | <input type="checkbox"/> Yes | <input type="checkbox"/> No            |

### B. Connectivity with adjoining natural habitats

- No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

### V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- Evidence of significant chemical contamination
- Evidence of significant levels of dumping
- Evidence of significant erosion or sedimentation problems
- Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- Disturbance from roads or highways
- Other human disturbance
- Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.



# Wildlife Habitat Protection Guidance

## Appendix B: Detailed Wildlife Habitat Evaluation

### Part 2. Field Data Form (continued)

#### VI. Quantification Table for Important Habitat Characteristics

| Habitat Characteristic                 | Amount Impacted in Impact Area | Current (entire site) | Post-Construction (entire site) |
|--|--------------------------------|-----------------------|---------------------------------|
| Example: standing dead trees 6-12" dbh | 4                              | 12                    | 8                               |
|  |                                |                       |                                 |
|  |                                |                       |                                 |
|  |                                |                       |                                 |
|  |                                |                       |                                 |
|  |                                |                       |                                 |
|  |                                |                       |                                 |
|  |                                |                       |                                 |
|  |                                |                       |                                 |
|  |                                |                       |                                 |

Stream S6 is heavily impacted by human disturbance. Though the stream is an outlet for BVW Wetland W1, the majority of the stream flow comes from a stormwater outlet. The portion of the stream along the existing haul road appears to be a historic stormwater swale. Substrate of the stream is heavily impacted by runoff, consisting largely of gravel. Little natural streambank exists in the impact area.