



Environmental Consulting & Restoration, LLC



## WETLAND DELINEATION MEMO

**TO:** McKenzie Engineering Group

**FROM:** Brad Holmes

**DATE:** October 29, 2025

**RE:** 359 East Street, Hingham

Per your request, Environmental Consulting & Restoration, LLC (ECR) performed a review of the existing conditions at the property located at 359 East Street in Hingham (the site) on October 17, 20025. The purpose of the review was to identify wetland resource areas on and near the site. The site is located along the south side of East Street and contains a single family home with paved driveway, lawn, landscaping, etc.

Wetland resource areas are located on and near the site. ECR placed the following wetland flags at the landward limits of the following resource areas:

- Bordering Vegetated Wetland (BVW) #A1 to #A16 - vegetated wetland located to the west of the site.
- BVW #B1 to #B4 - vegetated wetland located north and across the street from the site.

The vegetated wetlands were delineated following the methodology established by the Massachusetts Department of Environmental Protection (DEP) regulations found at 310 CMR 10.55 pertaining to the delineation of Bordering Vegetated Wetlands. The delineation was performed by analyzing vegetation, hydrology within 12 inches of the surface, and soil conditions within 20 inches of the surface. The wetland contains hydric soils, saturated soils, and dominant wetland indicator plants.

As a result of ECR's wetland delineation at the site, ECR can confirm that the site contains the following wetland resource areas and areas of Conservation Commission jurisdiction:

- 100-foot Buffer Zone to BVW

Also review of the MassGIS wetlands database reveals the following:

1. The site is not located within Estimated/Priority Habitat for Rare Species according to the Massachusetts Natural Heritage & Endangered Species Program (MaNHESP).
2. The site does not contain a mapped Certified or Potential Vernal Pool according to the MaNHESP.
3. The site does not contain a U.S.G.S. mapped stream.
4. The site is not located within an area mapped as Land Subject to Flooding (FEMA Flood zones).
5. The site is not located within an Area of Critical Environmental Concern.

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

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

# BORDERING VEGETATED WETLAND DETERMINATION FORM

Project/Site: 359 East Street City/Town: Hingham Sampling Date: 07/08/2026  
 Applicant/Owner: \_\_\_\_\_ Sampling Point or Zone: TAP1 (wetland)  
 Investigator(s): Brad Holmes, ECR, LLC Latitude / Longitude: 42.24430, -70.84831

Soil Map Unit Name: MA023, Norwell mucky, fine, sandy loam, Chatfield-Rock outcrop NWI or DEP Classification: Freshwater Forested/Shrub Wetland

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? (If yes, explain in Remarks)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If yes, explain in Remarks)

## SUMMARY OF FINDINGS – Attach site map and photograph log showing sampling locations, transects, etc.

|                                                                                                                                |                                         |                                        |                                                                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Wetland vegetation criterion met?                                                                                              | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soils criterion met?                                                                                                    | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                                                                                                     |
| Wetlands hydrology present?                                                                                                    | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                                                                                                     |
| Remarks, Photo Details, Flagging, etc.:<br><b>See wetland delineation report for more information. Below wetland flag #A4.</b> |                                         |                                        |                                                                                                                     |

## HYDROLOGY

| Field Observations:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Surface Water Present?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Yes <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | No <input checked="" type="checkbox"/> Depth (inches) <u>0.00</u>                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Water Table Present?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Yes <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | No <input checked="" type="checkbox"/> Depth (inches) <u>0.00</u>                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Saturation Present (including capillary fringe)?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | No <input type="checkbox"/> Depth (inches) <u>10.00</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Wetland Hydrology Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Reliable Indicators of Wetlands Hydrology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Indicators that can be Reliable with Proper Interpretation                                                                                                                                                                                                                                                                                                                                                                                                                                                | Indicators of the Influence of Water                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <input checked="" type="checkbox"/> Water-stained leaves<br><input type="checkbox"/> Evidence of aquatic fauna<br><input type="checkbox"/> Iron deposits<br><input type="checkbox"/> Algal mats or crusts<br><input type="checkbox"/> Oxidized rhizospheres/pore linings<br><input type="checkbox"/> Thin muck surfaces<br><input type="checkbox"/> Plants with air-filled tissue (aerenchyma)<br><input type="checkbox"/> Plants with polymorphic leaves<br><input type="checkbox"/> Plants with floating leaves<br><input type="checkbox"/> Hydrogen sulfide odor | <input type="checkbox"/> Hydrological records<br><input type="checkbox"/> Free water in a soil test hole<br><input checked="" type="checkbox"/> Saturated soil<br><input type="checkbox"/> Water marks<br><input type="checkbox"/> Moss trim lines<br><br><input type="checkbox"/> Presence of reduced iron<br><input type="checkbox"/> Woody plants with adventitious roots<br><input type="checkbox"/> Trees with shallow root systems<br><input type="checkbox"/> Woody plants with enlarged lenticels | <input type="checkbox"/> Direct observation of inundation<br><input type="checkbox"/> Drainage patterns<br><input type="checkbox"/> Drift lines<br><input type="checkbox"/> Scoured areas<br><input type="checkbox"/> Sediment deposits<br><br><input type="checkbox"/> Surface soil cracks<br><input type="checkbox"/> Sparsely vegetated concave surface<br><input type="checkbox"/> Microtopographic relief<br><input type="checkbox"/> Geographic position (depression, toe of slope, fringing lowland) |
| Remarks (describe recorded data from stream gauge, monitoring well, aerial photos, previous inspections, if available):<br><b>See wetland delineation report for more information.</b>                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

This form is only for BVW delineations. Other wetland resource areas may be present and should be delineated according to the applicable regulatory provisions.

**VEGETATION** – Use both common and scientific names of plants.

| <u>Tree Stratum</u> Plot size <u>30 ft.</u>          |                        | Indicator Status | Absolute % Cover | Dominant? (yes/no) | Wetland Indicator? (yes/no) |
|------------------------------------------------------|------------------------|------------------|------------------|--------------------|-----------------------------|
| Common name                                          | Scientific name        |                  |                  |                    |                             |
| 1. Norway Maple                                      | Acer platanoides       | UPL              | 63.0             | Yes                | No                          |
| 2. Shagbark Hickory                                  | Carya ovata            | FACU             | 3.0              | No                 | No                          |
| 3.                                                   |                        |                  |                  |                    |                             |
| 4.                                                   |                        |                  |                  |                    |                             |
| 5.                                                   |                        |                  |                  |                    |                             |
| 6.                                                   |                        |                  |                  |                    |                             |
| 7.                                                   |                        |                  |                  |                    |                             |
| 8.                                                   |                        |                  |                  |                    |                             |
| 9.                                                   |                        |                  |                  |                    |                             |
| <u>66.0</u> = Total Cover                            |                        |                  |                  |                    |                             |
| <u>Shrub/Sapling Stratum</u> Plot size <u>15 ft.</u> |                        | Indicator Status | Absolute % Cover | Dominant? (yes/no) | Wetland Indicator? (yes/no) |
| Common name                                          | Scientific name        |                  |                  |                    |                             |
| 1. Shagbark Hickory                                  | Carya ovata            | FACU             | 3.0              | Yes                | No                          |
| 2. Black Cherry                                      | Prunus serotina        | FACU             | 10.5             | Yes                | No                          |
| 3. Northern Arrowwood                                | Viburnum dentatum      | FACW             | 20.5             | Yes                | Yes                         |
| 4. Chokecherry                                       | Prunus virginiana      | FACU             | 3.0              | Yes                | No                          |
| 5.                                                   |                        |                  |                  |                    |                             |
| 6.                                                   |                        |                  |                  |                    |                             |
| 7.                                                   |                        |                  |                  |                    |                             |
| 8.                                                   |                        |                  |                  |                    |                             |
| 9.                                                   |                        |                  |                  |                    |                             |
| <u>37.0</u> = Total Cover                            |                        |                  |                  |                    |                             |
| <u>Herb Stratum</u> Plot size <u>5 ft.</u>           |                        | Indicator Status | Absolute % Cover | Dominant? (yes/no) | Wetland Indicator? (yes/no) |
| Common name                                          | Scientific name        |                  |                  |                    |                             |
| 1. Jewelweed                                         | Impatiens capensis     | FACW             | 38.0             | Yes                | Yes                         |
| 2. Poison Ivy                                        | Toxicodendron radicans | FAC              | 20.5             | No                 | Yes                         |
| 3. Broadleaf Enchanter's Nightshade                  | Circaea canadensis     | FACU             | 38.0             | Yes                | No                          |
| 4. Northern Arrowwood                                | Viburnum dentatum      | FACW             | 10.5             | No                 | Yes                         |
| 5. Black Cherry                                      | Prunus serotina        | FACU             | 3.0              | No                 | No                          |
| 6. Bittersweet                                       | Celastrus orbiculatus  | FACU             | 3.0              | No                 | No                          |
| 7.                                                   |                        |                  |                  |                    |                             |
| 8.                                                   |                        |                  |                  |                    |                             |
| 9.                                                   |                        |                  |                  |                    |                             |
| 10.                                                  |                        |                  |                  |                    |                             |
| 11.                                                  |                        |                  |                  |                    |                             |
| 12.                                                  |                        |                  |                  |                    |                             |
| <u>113.0</u> = Total Cover                           |                        |                  |                  |                    |                             |

**VEGETATION** – continued.

|                           |                        |                         |                  |                    |                             |
|---------------------------|------------------------|-------------------------|------------------|--------------------|-----------------------------|
| <u>Woody Vine Stratum</u> |                        | Plot size <u>30 ft.</u> |                  |                    |                             |
|                           |                        | Indicator Status        | Absolute % Cover | Dominant? (yes/no) | Wetland Indicator? (yes/no) |
| Common name               |                        | Scientific name         |                  |                    |                             |
| 1. Poison Ivy             | Toxicodendron radicans | FAC                     | 10.5             | Yes                | Yes                         |
| 2. Bittersweet            | Celastrus orbiculatus  | FACU                    | 10.5             | Yes                | No                          |
| 3.                        |                        |                         |                  |                    |                             |
| 4.                        |                        |                         |                  |                    |                             |
| <u>21.0</u> = Total Cover |                        |                         |                  |                    |                             |

|                                                                                                                                                         |                            |                                                              |              |                                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------------------------------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <u>Rapid Test:</u> Do all dominant species have an indicator status of OBL or FACW? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |                            |                                                              |              |                                                                                                                                          |
| <u>Dominance Test:</u>                                                                                                                                  | Number of dominant species | Number of dominant species that are wetland indicator plants |              | Do wetland indicator plants make up ≥ 50% of dominant plant species? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
|                                                                                                                                                         | 9                          | 3                                                            |              |                                                                                                                                          |
| <u>Prevalence Index:</u>                                                                                                                                |                            | Total % Cover (all strata)                                   | Multiply by: | Result                                                                                                                                   |
|                                                                                                                                                         | OBL species                | 0                                                            | X 1          | = 0.00                                                                                                                                   |
|                                                                                                                                                         | FACW species               | 69                                                           | X 2          | = 138.00                                                                                                                                 |
|                                                                                                                                                         | FAC species                | 31                                                           | X 3          | = 93.00                                                                                                                                  |
|                                                                                                                                                         | FACU species               | 74                                                           | X 4          | = 296.00                                                                                                                                 |
|                                                                                                                                                         | UPL species                | 63                                                           | X 5          | = 315.00                                                                                                                                 |
|                                                                                                                                                         | Column Totals              | (A) 237                                                      |              | (B) 842                                                                                                                                  |
| Prevalence Index                                                                                                                                        |                            | B/A = <b>3.55</b>                                            |              | Is the Prevalence Index ≤ 3.0? Yes <input type="checkbox"/> No <input type="checkbox"/>                                                  |
| <u>Wetland vegetation criterion met?</u> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                                            |                            |                                                              |              |                                                                                                                                          |

**Definitions of Vegetation Strata**

- Tree - Woody plants 3 in. (7.62 cm) or more in diameter at breast height (DBH), regardless of height
- Shrub / Sapling - Woody plants less than 3 in. (7.62 cm) DBH and greater than or equal to 3.3 ft. (1 m) tall
- Herb - All herbaceous (non-woody plants, regardless of size, and woody plants less than 3.3 ft. (1 m) tall
- Woody vines - All woody vines greater than 3.3 ft. (1 m) in height

| Cover Ranges |          |
|--------------|----------|
| Range        | Midpoint |
| 1-5 %        | 3.0 %    |
| 6-15 %       | 10.5 %   |
| 15-25 %      | 20.5 %   |
| 26-50 %      | 38.0 %   |
| 51-75 %      | 63.0 %   |
| 76-95 %      | 85.5 %   |
| 96-100 %     | 98.0 %   |

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators) |               |   |                                                       |   |                                                 |                                                                 |                                         |         |
|--------------------------------------------------------------------------------------------------------------------|---------------|---|-------------------------------------------------------|---|-------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------|---------|
| Depth<br>(inches)                                                                                                  | Matrix        |   | Redox Features                                        |   |                                                 |                                                                 | Texture                                 | Remarks |
|                                                                                                                    | Color (moist) | % | Color (moist)                                         | % | Type <sup>1</sup>                               | Location <sup>2</sup>                                           |                                         |         |
| 1-0                                                                                                                | Fibric        |   |                                                       |   |                                                 |                                                                 |                                         |         |
| 0-6"                                                                                                               | 10YR 2/1      |   |                                                       |   |                                                 |                                                                 |                                         |         |
| 6-16"                                                                                                              | 10YR 4/2      |   |                                                       |   |                                                 |                                                                 |                                         |         |
| 16-20"                                                                                                             | 10YR 5/3-5/2  |   |                                                       |   |                                                 |                                                                 |                                         |         |
|                                                                                                                    |               |   |                                                       |   |                                                 |                                                                 |                                         |         |
|                                                                                                                    |               |   |                                                       |   |                                                 |                                                                 |                                         |         |
|                                                                                                                    |               |   |                                                       |   |                                                 |                                                                 |                                         |         |
|                                                                                                                    |               |   |                                                       |   |                                                 |                                                                 |                                         |         |
|                                                                                                                    |               |   |                                                       |   |                                                 |                                                                 |                                         |         |
|                                                                                                                    |               |   |                                                       |   |                                                 |                                                                 |                                         |         |
|                                                                                                                    |               |   |                                                       |   |                                                 |                                                                 |                                         |         |
|                                                                                                                    |               |   |                                                       |   |                                                 |                                                                 |                                         |         |
|                                                                                                                    |               |   |                                                       |   |                                                 |                                                                 |                                         |         |
|                                                                                                                    |               |   |                                                       |   |                                                 |                                                                 |                                         |         |
| <sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains                          |               |   |                                                       |   | <sup>2</sup> Location: PL=Pore Lining, M=Matrix |                                                                 |                                         |         |
| Hydric Soil Indicators (Check all that apply)                                                                      |               |   |                                                       |   |                                                 |                                                                 | Indicators for Problematic Hydric Soils |         |
| <input type="checkbox"/> Histosol (A1)                                                                             |               |   | <input type="checkbox"/> Polyvalue Below Surface (S8) |   |                                                 | <input type="checkbox"/> 2 cm Muck (A10)                        |                                         |         |
| <input type="checkbox"/> Histic Epipedon (A2)                                                                      |               |   | <input type="checkbox"/> Thin Dark Surface (S9)       |   |                                                 | <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)           |                                         |         |
| <input type="checkbox"/> Black Histic (A3)                                                                         |               |   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)     |   |                                                 | <input type="checkbox"/> Iron-Manganese Masses (F12)            |                                         |         |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                                                                     |               |   | <input type="checkbox"/> Depleted Matrix (F3)         |   |                                                 | <input type="checkbox"/> Mesic Spodic (A17)                     |                                         |         |
| <input type="checkbox"/> Stratified Layers (A5)                                                                    |               |   | <input type="checkbox"/> Redox Dark Surface (F6)      |   |                                                 | <input type="checkbox"/> Red Parent Material (F21)              |                                         |         |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                                                         |               |   | <input type="checkbox"/> Depleted Dark Surface (F7)   |   |                                                 | <input type="checkbox"/> Very Shallow Dark Surface (F22)        |                                         |         |
| <input type="checkbox"/> Thick Dark Surface (A12)                                                                  |               |   | <input type="checkbox"/> Redox Depressions (F8)       |   |                                                 |                                                                 |                                         |         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                                                                  |               |   |                                                       |   |                                                 |                                                                 |                                         |         |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                                                                  |               |   |                                                       |   |                                                 |                                                                 |                                         |         |
| <input type="checkbox"/> Sandy Redox (S5)                                                                          |               |   |                                                       |   |                                                 | <input type="checkbox"/> Other (Include Explanation in Remarks) |                                         |         |
| <input type="checkbox"/> Stripped Matrix (S6)                                                                      |               |   |                                                       |   |                                                 |                                                                 |                                         |         |
| <input type="checkbox"/> Dark Surface (S7)                                                                         |               |   |                                                       |   |                                                 |                                                                 |                                         |         |
| <b>Restrictive Layer (if observed)</b> Type: _____ Depth (inches): _____                                           |               |   |                                                       |   |                                                 |                                                                 |                                         |         |
| Remarks: See wetland delineation report for more information.                                                      |               |   |                                                       |   |                                                 |                                                                 |                                         |         |
| <b>Hydric Soils criterion met?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>             |               |   |                                                       |   |                                                 |                                                                 |                                         |         |

# BORDERING VEGETATED WETLAND DETERMINATION FORM

Project/Site: 359 East Street City/Town: Hingham Sampling Date: 07/08/2026  
 Applicant/Owner: \_\_\_\_\_ Sampling Point or Zone: TAP2 (upland)  
 Investigator(s): Brad Holmes, ECR, LLC Latitude / Longitude: 42.24430, -70.84831

Soil Map Unit Name: MA023, Norwell mucky, fine, sandy loam, Chatfield-Rock outcrop NWI or DEP Classification: Freshwater Forested/Shrub Wetland

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? (If yes, explain in Remarks)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If yes, explain in Remarks)

## SUMMARY OF FINDINGS – Attach site map and photograph log showing sampling locations, transects, etc.

|                                                                                                                                |                              |                                        |                                                                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------|------------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Wetland vegetation criterion met?                                                                                              | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soils criterion met?                                                                                                    | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |                                                                                                                     |
| Wetlands hydrology present?                                                                                                    | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |                                                                                                                     |
| Remarks, Photo Details, Flagging, etc.:<br><b>See wetland delineation report for more information. Above wetland flag #A4.</b> |                              |                                        |                                                                                                                     |

## HYDROLOGY

| Field Observations:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Surface Water Present?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Yes <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | No <input checked="" type="checkbox"/> Depth (inches) _____                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Water Table Present?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Yes <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | No <input checked="" type="checkbox"/> Depth (inches) _____                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Saturation Present (including capillary fringe)?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Yes <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | No <input checked="" type="checkbox"/> Depth (inches) _____                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Wetland Hydrology Indicators                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Reliable Indicators of Wetlands Hydrology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Indicators that can be Reliable with Proper Interpretation                                                                                                                                                                                                                                                                                                                                                                                                                                     | Indicators of the Influence of Water                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <input type="checkbox"/> Water-stained leaves<br><input type="checkbox"/> Evidence of aquatic fauna<br><input type="checkbox"/> Iron deposits<br><input type="checkbox"/> Algal mats or crusts<br><input type="checkbox"/> Oxidized rhizospheres/pore linings<br><input type="checkbox"/> Thin muck surfaces<br><input type="checkbox"/> Plants with air-filled tissue (aerenchyma)<br><input type="checkbox"/> Plants with polymorphic leaves<br><input type="checkbox"/> Plants with floating leaves<br><input type="checkbox"/> Hydrogen sulfide odor | <input type="checkbox"/> Hydrological records<br><input type="checkbox"/> Free water in a soil test hole<br><input type="checkbox"/> Saturated soil<br><input type="checkbox"/> Water marks<br><input type="checkbox"/> Moss trim lines<br><br><input type="checkbox"/> Presence of reduced iron<br><input type="checkbox"/> Woody plants with adventitious roots<br><input type="checkbox"/> Trees with shallow root systems<br><input type="checkbox"/> Woody plants with enlarged lenticels | <input type="checkbox"/> Direct observation of inundation<br><input type="checkbox"/> Drainage patterns<br><input type="checkbox"/> Drift lines<br><input type="checkbox"/> Scoured areas<br><input type="checkbox"/> Sediment deposits<br><br><input type="checkbox"/> Surface soil cracks<br><input type="checkbox"/> Sparsely vegetated concave surface<br><input type="checkbox"/> Microtopographic relief<br><input type="checkbox"/> Geographic position (depression, toe of slope, fringing lowland) |
| Remarks (describe recorded data from stream gauge, monitoring well, aerial photos, previous inspections, if available):<br><b>See wetland delineation report for more information.</b>                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

This form is only for BVW delineations. Other wetland resource areas may be present and should be delineated according to the applicable regulatory provisions.

**VEGETATION** – Use both common and scientific names of plants.

| <u>Tree Stratum</u> Plot size <u>30 ft.</u>          |                             | Indicator Status | Absolute % Cover | Dominant? (yes/no) | Wetland Indicator? (yes/no) |
|------------------------------------------------------|-----------------------------|------------------|------------------|--------------------|-----------------------------|
| Common name                                          | Scientific name             |                  |                  |                    |                             |
| 1. Norway Maple                                      | Acer platanoides            | UPL              | 38.0             | Yes                | No                          |
| 2. Black Cherry                                      | Prunus serotina             | FACU             | 20.5             | Yes                | No                          |
| 3. Eastern Red Cedar                                 | Juniperus virginiana        | FACU             | 10.5             | No                 | No                          |
| 4. Shagbark Hickory                                  | Carya ovata                 | FACU             | 3.0              | No                 | No                          |
| 5.                                                   |                             |                  |                  |                    |                             |
| 6.                                                   |                             |                  |                  |                    |                             |
| 7.                                                   |                             |                  |                  |                    |                             |
| 8.                                                   |                             |                  |                  |                    |                             |
| 9.                                                   |                             |                  |                  |                    |                             |
| <u>72.0</u> = Total Cover                            |                             |                  |                  |                    |                             |
| <u>Shrub/Sapling Stratum</u> Plot size <u>15 ft.</u> |                             | Indicator Status | Absolute % Cover | Dominant? (yes/no) | Wetland Indicator? (yes/no) |
| Common name                                          | Scientific name             |                  |                  |                    |                             |
| 1. Norway Maple                                      | Acer platanoides            | UPL              | 20.5             | Yes                | No                          |
| 2. Black Oak                                         | Quercus velutina            | FACU             | 10.5             | Yes                | No                          |
| 3.                                                   |                             |                  |                  |                    |                             |
| 4.                                                   |                             |                  |                  |                    |                             |
| 5.                                                   |                             |                  |                  |                    |                             |
| 6.                                                   |                             |                  |                  |                    |                             |
| 7.                                                   |                             |                  |                  |                    |                             |
| 8.                                                   |                             |                  |                  |                    |                             |
| 9.                                                   |                             |                  |                  |                    |                             |
| <u>31.0</u> = Total Cover                            |                             |                  |                  |                    |                             |
| <u>Herb Stratum</u> Plot size <u>5 ft.</u>           |                             | Indicator Status | Absolute % Cover | Dominant? (yes/no) | Wetland Indicator? (yes/no) |
| Common name                                          | Scientific name             |                  |                  |                    |                             |
| 1. Poison Ivy                                        | Toxicodendron radicans      | FAC              | 10.5             | Yes                | Yes                         |
| 2. Garlic Mustard                                    | Alliaria petiolata          | FACU             | 20.5             | Yes                | No                          |
| 3. Virginia Creeper                                  | Parthenocissus quinquefolia | FACU             | 10.5             | Yes                | No                          |
| 4. Broadleaf Enchanter's Nightshade                  | Circaea canadensis          | FACU             | 20.5             | Yes                | No                          |
| 5. Shagbark Hickory                                  | Carya ovata                 | FACU             | 3.0              | No                 | No                          |
| 6.                                                   |                             |                  |                  |                    |                             |
| 7.                                                   |                             |                  |                  |                    |                             |
| 8.                                                   |                             |                  |                  |                    |                             |
| 9.                                                   |                             |                  |                  |                    |                             |
| 10.                                                  |                             |                  |                  |                    |                             |
| 11.                                                  |                             |                  |                  |                    |                             |
| 12.                                                  |                             |                  |                  |                    |                             |
| <u>65.0</u> = Total Cover                            |                             |                  |                  |                    |                             |

**VEGETATION** – continued.

|                           |                             |                         |                  |                    |                             |
|---------------------------|-----------------------------|-------------------------|------------------|--------------------|-----------------------------|
| <u>Woody Vine Stratum</u> |                             | Plot size <u>30 ft.</u> |                  |                    |                             |
|                           |                             | Indicator Status        | Absolute % Cover | Dominant? (yes/no) | Wetland Indicator? (yes/no) |
| Common name               | Scientific name             |                         |                  |                    |                             |
| 1. Bittersweet            | Celastrus orbiculatus       | FACU                    | 10.5             | Yes                | No                          |
| 2. Virginia Creeper       | Parthenocissus quinquefolia | FACU                    | 3.0              | Yes                | No                          |
| 3.                        |                             |                         |                  |                    |                             |
| 4.                        |                             |                         |                  |                    |                             |
|                           |                             |                         | <u>13.5</u>      | = Total Cover      |                             |

|                                                                                                                                                         |                            |                                                              |              |                                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------------------------------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <u>Rapid Test:</u> Do all dominant species have an indicator status of OBL or FACW? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |                            |                                                              |              |                                                                                                                                                |
| <u>Dominance Test:</u>                                                                                                                                  | Number of dominant species | Number of dominant species that are wetland indicator plants |              | Do wetland indicator plants make up $\geq 50\%$ of dominant plant species? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
|                                                                                                                                                         | 10                         | 1                                                            |              |                                                                                                                                                |
| <u>Prevalence Index:</u>                                                                                                                                |                            | Total % Cover (all strata)                                   | Multiply by: | Result                                                                                                                                         |
|                                                                                                                                                         | OBL species                | 0                                                            | X 1          | = 0.00                                                                                                                                         |
|                                                                                                                                                         | FACW species               | 0                                                            | X 2          | = 0.00                                                                                                                                         |
|                                                                                                                                                         | FAC species                | 11                                                           | X 3          | = 31.50                                                                                                                                        |
|                                                                                                                                                         | FACU species               | 113                                                          | X 4          | = 450.00                                                                                                                                       |
|                                                                                                                                                         | UPL species                | 59                                                           | X 5          | = 292.50                                                                                                                                       |
|                                                                                                                                                         | Column Totals              | (A) 181.5                                                    |              | (B) 774                                                                                                                                        |
| Prevalence Index                                                                                                                                        |                            | B/A = <b>4.26</b>                                            |              | Is the Prevalence Index $\leq 3.0$ ? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                                       |
| <u>Wetland vegetation criterion met?</u> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                                            |                            |                                                              |              |                                                                                                                                                |

**Definitions of Vegetation Strata**

- Tree - Woody plants 3 in. (7.62 cm) or more in diameter at breast height (DBH), regardless of height
- Shrub / Sapling - Woody plants less than 3 in. (7.62 cm) DBH and greater than or equal to 3.3 ft. (1 m) tall
- Herb - All herbaceous (non-woody plants, regardless of size, and woody plants less than 3.3 ft. (1 m) tall
- Woody vines - All woody vines greater than 3.3 ft. (1 m) in height

| Cover Ranges |          |
|--------------|----------|
| Range        | Midpoint |
| 1-5 %        | 3.0 %    |
| 6-15 %       | 10.5 %   |
| 15-25 %      | 20.5 %   |
| 26-50 %      | 38.0 %   |
| 51-75 %      | 63.0 %   |
| 76-95 %      | 85.5 %   |
| 96-100 %     | 98.0 %   |

| <b>Profile Description:</b> (Describe to the depth needed to document the indicator or confirm the absence of indicators) |               |   |                |   |                   |                       |         |         |
|---------------------------------------------------------------------------------------------------------------------------|---------------|---|----------------|---|-------------------|-----------------------|---------|---------|
| Depth<br>(inches)                                                                                                         | Matrix        |   | Redox Features |   |                   |                       | Texture | Remarks |
|                                                                                                                           | Color (moist) | % | Color (moist)  | % | Type <sup>1</sup> | Location <sup>2</sup> |         |         |
| 1-0                                                                                                                       | Lawn/Fibric   |   |                |   |                   |                       |         |         |
| 0-4"                                                                                                                      | 10YR 4/3      |   |                |   |                   |                       |         |         |
| 4-18"                                                                                                                     | 10YR 6/4      |   |                |   |                   |                       |         |         |
| 18-20"                                                                                                                    | 10YR 6/6      |   |                |   |                   |                       |         |         |
|                                                                                                                           |               |   |                |   |                   |                       |         |         |
|                                                                                                                           |               |   |                |   |                   |                       |         |         |
|                                                                                                                           |               |   |                |   |                   |                       |         |         |
|                                                                                                                           |               |   |                |   |                   |                       |         |         |
|                                                                                                                           |               |   |                |   |                   |                       |         |         |
|                                                                                                                           |               |   |                |   |                   |                       |         |         |
|                                                                                                                           |               |   |                |   |                   |                       |         |         |
|                                                                                                                           |               |   |                |   |                   |                       |         |         |
|                                                                                                                           |               |   |                |   |                   |                       |         |         |
|                                                                                                                           |               |   |                |   |                   |                       |         |         |
|                                                                                                                           |               |   |                |   |                   |                       |         |         |
|                                                                                                                           |               |   |                |   |                   |                       |         |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains
<sup>2</sup>Location: PL=Pore Lining, M=Matrix

| <b>Hydric Soil Indicators</b> (Check all that apply)       | <b>Indicators for Problematic Hydric Soils</b>                                                               |
|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)                     | <input type="checkbox"/> Polyvalue Below Surface (S8) <input type="checkbox"/> 2 cm Muck (A10)               |
| <input type="checkbox"/> Histic Epipedon (A2)              | <input type="checkbox"/> Thin Dark Surface (S9) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)        |
| <input type="checkbox"/> Black Histic (A3)                 | <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Iron-Manganese Masses (F12)       |
| <input type="checkbox"/> Hydrogen Sulfide (A4)             | <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Mesic Spodic (A17)                    |
| <input type="checkbox"/> Stratified Layers (A5)            | <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Red Parent Material (F21)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Very Shallow Dark Surface (F22) |
| <input type="checkbox"/> Thick Dark Surface (A12)          | <input type="checkbox"/> Redox Depressions (F8)                                                              |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)          |                                                                                                              |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)          |                                                                                                              |
| <input type="checkbox"/> Sandy Redox (S5)                  | <input type="checkbox"/> Other (Include Explanation in Remarks)                                              |
| <input type="checkbox"/> Stripped Matrix (S6)              |                                                                                                              |
| <input type="checkbox"/> Dark Surface (S7)                 |                                                                                                              |

**Restrictive Layer (if observed)**    Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

Remarks: See wetland delineation report for more information.

**Hydric Soils criterion met?**      Yes ☐   No ☒