

**EcoTec, Inc.**  
**ENVIRONMENTAL CONSULTING SERVICES**  
102 Grove Street  
Worcester, MA 01605-2629  
508-752-9666 – Fax: 508-752-9494

February 21, 2020

Alan Roscoe, PE, BCEE  
Corestates Group  
9 Galen Street, Suite 117  
Watertown, MA 02472

RE: Wetland Resource Evaluation, 400 Haynes Street, Sturbridge, Massachusetts

Dear Mr. Roscoe:

On January 15, 2020, EcoTec, Inc. inspected the above-referenced property for the presence of wetland resources as defined by: (1) the Massachusetts Wetlands Protection Act (M.G.L. Ch. 131, § 40; the “Act”) and its implementing regulations (310 CMR 10.00 *et seq.*; the “Regulations”); (2) the Town of Sturbridge Wetlands Protection Bylaw and its implementing regulations; and (3) the U.S. Clean Water Act (i.e., Section 404 and 401 wetlands). Scott Morrison, PWS and Scott Jordan conducted the inspection.

The subject site consists of a partially developed, approximately 30-acre parcel located at 400 Haynes Street in Sturbridge, Massachusetts. The upland portions of the site consist of existing commercial buildings and associated driveways and parking areas in the central portion, and upland forest in the northern and southern portions. Plant species observed include northern red oak (*Quercus rubra*), white oak (*Quercus alba*), eastern hemlock (*Tsuga canadensis*), gray birch (*Betula populifolia*), eastern white pine (*Pinus strobus*), red maple (*Acer rubrum*), and black birch (*Betula lenta*) trees and/or saplings; and mountain laurel (*Kalmia latifolia*) shrubs. The wetland resources observed on the site are described below.

**Methodology**

The site was inspected, and areas suspected to qualify as wetland resources were identified. The boundary of Bordering Vegetated Wetlands or, in the absence of Bordering Vegetated Wetlands, Bank was delineated in the field in accordance with the definitions set forth in the regulations at 310 CMR 10.55(2)(c) and 310 CMR 10.54(2). Section 10.55(2)(c) states that “The boundary of Bordering Vegetated Wetlands is the line within which 50% or more of the vegetational community consists of wetland indicator plants and saturated or inundated conditions exist.” Section 10.54(2)(c) states that “The upper boundary of Bank is the first observable break in the slope or the mean annual flood level, whichever is lower.” The methodology used to delineate Bordering Vegetated Wetlands is further described in: (1) the BVW Policy “*BVW: Bordering Vegetated Wetlands Delineation Criteria and Methodology*,”

issued March 1, 1995; and (2) *"Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act: A Handbook,"* produced by the Massachusetts Department of Environmental Protection, dated March 1995. The plant taxonomy used in this report is based on the *National List of Plant Species that Occur in Wetlands: Massachusetts* (Fish and Wildlife Service, U.S. Department of the Interior, 1988). Federal wetlands were presumed to have boundaries conterminous with the delineated Bordering Vegetated Wetlands and Bank. One set of DEP Bordering Vegetated Wetland Delineation Field Data Forms completed for observation plots located in the wetlands and uplands near flag K-6 is attached. The table below provides the Flag Numbers, Flag Type, and Wetland Types and Locations for the delineated wetland resources.

<b>Flag Numbers</b>	<b>Flag Type</b>	<b>Wetland Types and Locations</b>
Start A1 to A29 Stop	Blue Flags	Boundary of Bordering Vegetated Wetlands located in the southern portion of the site that is associated with a pond and Hamant Brook.
Start B1 to B12 Stop	Blue Flags	Boundary of Bordering Vegetated Wetlands or Bank located in the southern portion of the site that is associated with an intermittent tributary stream.
Start C1 to C4 Stop	Blue Flags	Boundary of Bordering Vegetated Wetlands located in the southern portion of the site that is associated with a pond and Hamant Brook.
Start D1 to D9 Stop	Blue Flags	Boundary of Bordering Vegetated Wetlands located in the southern portion of the site that is associated with a pond and Hamant Brook.
Start E1 to E5 Stop	Blue Flags	Boundary of Bordering Vegetated Wetlands located in the southern portion of the site that is associated with a pond and Hamant Brook.
Start F1 to F3 Stop	Blue Flags	Boundary of Bordering Vegetated Wetlands located in the southern portion of the site that is associated with a pond and Hamant Brook.
Start G1 to G20 Stop	Blue Flags	Boundary of Bordering Vegetated Wetlands located in the southern portion of the site that is associated with a pond and Hamant Brook.
Start H1 to H25 Stop	Blue Flags	Boundary of Bordering Vegetated Wetlands or Bank located in the northern portion of the site that is associated with Hamant Brook and Ovide Pond. H25 connect to concrete outlet structure at north end of pond.
Start I1 to I39 Stop	Blue Flags	Boundary of Bordering Vegetated Wetlands or Bank located in the northern portion of the site that is associated with Hamant Brook and Ovide Pond. I29 and I30 connect to concrete outlet structure at north end of pond.
Start J1 to J6 Stop	Blue Flags	Boundary of Bordering Vegetated Wetlands located in the northern portion of the site that is associated with Hamant Brook.

Flag Numbers	Flag Type	Wetland Types and Locations
Start K1 to K9 Stop	Blue Flags	Boundary of Bordering Vegetated Wetlands or Bank located in the southeastern portion of the site that is associated with an intermittent tributary stream.
Start L1 to L8 Stop	Blue Flags	Boundary of Bordering Vegetated Wetlands or Bank located in the southeastern portion of the site that is associated with an intermittent tributary stream.
Start R1 to R38 Stop	Red Flags	Mean Annual High-water Line (MAHWL) / Bank of easterly side of Hamant Brook located in the southern portion of the site.
Start RA1 to RA39 Stop	Red Flags	Mean Annual High-water Line (MAHWL) / Bank of westerly side of Hamant Brook located in the southern portion of the site.
Start RB1 to RB19 Stop	Red Flags	Mean Annual High-water Line (MAHWL) / Bank of westerly side of Hamant Brook located in the northern portion of the site. RB9 stop at Ovide Pond. RB10 start at concrete outlet structure at north end of Ovide Pond.
Start RC1 to RC8 Stop	Red Flags	Mean Annual High-water Line (MAHWL) / Bank of easterly side of Hamant Brook located in the northern portion of the site. RC8 end at Ovide Pond.
Start RD1 to RD12 Stop	Red Flags	Mean Annual High-water Line (MAHWL) / Bank of easterly side of Hamant Brook located in the northern portion of the site. RD12 end at concrete outlet structure at north end of Ovide Pond.
Start SW1 to SW8 Stop	Red Flags	Edge of apparent stormwater management basin located in the southeastern portion of site. See discussion below.

### Findings

Wetland A/G (i.e., flags A1 to A29 and G1 to G20) consists of a wooded swamp located in the southern portion of the site that is associated with a pond and a perennial stream. Plant species observed include red maple (*Acer rubrum*), and eastern hemlock (*Tsuga canadensis*) trees and/or saplings; and sensitive fern (*Onoclea sensibilis*), and sphagnum moss (*Sphagnum sp.*) ground cover. Evidence of wetland hydrology, including hydric soils, saturated soils, and evidence of flooding, was observed within the delineated wetland. This vegetated wetland borders a pond and a perennial stream; accordingly, the vegetated wetlands would be regulated as Bordering Vegetated Wetlands, and the pond and perennial stream would be regulated as Bank and Land Under Water Bodies and Waterways, and the pond under the Act and Bylaw. A 100-foot Buffer Zone extends horizontally outward from the edge of Bordering Vegetated Wetlands and Bank under the Act. A 200-foot Buffer Zone extends horizontally outward from the edge of Bordering Vegetated Wetlands and Bank under the Bylaw.

Wetland B/K/L (i.e., flags B1 to B12, K1 to K9 and L1 to L8) consists of a wooded swamp located in the southeastern portion of the site that is associated with an intermittent stream. Plant species observed include red maple (*Acer rubrum*), and eastern hemlock (*Tsuga canadensis*)

trees and/or saplings; northern spicebush (*Lindera benzoin*) shrubs; and cinnamon fern (*Osmunda cinnamomea*) ground cover. Evidence of wetland hydrology, including hydric soils, saturated soils, evidence of flooding, and drainage patterns, was observed within the delineated wetland. This vegetated wetland borders an intermittent stream; accordingly, the vegetated wetlands would be regulated as Bordering Vegetated Wetlands and the intermittent stream would be regulated as Bank under the Act and Bylaw. A 100-foot Buffer Zone extends horizontally outward from the edge of Bordering Vegetated Wetlands and Bank under the Act. A 200-foot Buffer Zone extends horizontally outward from the edge of Bordering Vegetated Wetlands and Bank under the Bylaw.

Wetland C/D/E/F (i.e., flags C1 to C4, D1 to D9, E1 to E5, and F1 to F3) consists of a wooded swamp located in the southern portion of the site that is associated with a perennial stream. Plant species observed include red maple (*Acer rubrum*), and eastern hemlock (*Tsuga canadensis*) trees and/or saplings; glossy buckthorn (*Rhamnus frangula*) shrubs; and cinnamon fern (*Osmunda cinnamomea*), goldenrods (*Solidago spp.*), and sedges (*Cyperaceae spp.*) ground cover. Evidence of wetland hydrology, including hydric soils, saturated soils, and evidence of flooding, was observed within the delineated wetland. This vegetated wetland borders a perennial stream; accordingly, the vegetated wetlands would be regulated as Bordering Vegetated Wetlands and the perennial stream would be regulated as Bank and Land Under Water Bodies and Waterways under the Act and Bylaw. A 100-foot Buffer Zone extends horizontally outward from the edge of Bordering Vegetated Wetlands and Bank under the Act. A 200-foot Buffer Zone extends horizontally outward from the edge of Bordering Vegetated Wetlands and Bank under the Bylaw.

Wetland H/I/J (i.e., flags H1 to H25, I1 to I39, and J1 to J6) consists of a wet meadow/shrub swamp located in the northern portion of the site that is associated with a perennial stream and a pond. Plant species observed include swamp dogwood (*Cornus amomum*), speckled alder (*Alnus rugosa*) and American elderberry (*Sambucus canadensis*) shrubs; and common cattail (*Typha latifolia*), goldenrods (*Solidago spp.*) sedges (*Cyperaceae spp.*), and rushes (*Juncaceae spp.*) ground cover. Evidence of wetland hydrology, including hydric soils, saturated soils, and evidence of flooding, was observed within the delineated wetland. This vegetated wetland borders a pond and a perennial stream; accordingly, the vegetated wetlands would be regulated as Bordering Vegetated Wetlands, and the pond and perennial stream would be regulated as Bank and Land Under Water Bodies and Waterways, and the pond under the Act and Bylaw. A 100-foot Buffer Zone extends horizontally outward from the edge of Bordering Vegetated Wetlands and Bank under the Act. A 200-foot Buffer Zone extends horizontally outward from the edge of Bordering Vegetated Wetlands and Bank under the Bylaw.

An apparent stormwater management basin was delineated with red flagging SW1 to SW8 in the southeastern portion of the site. With regard to the jurisdictional status of constructed stormwater basins under the Act, the 2014 revisions to the Regulations at 310 CMR 10.02(2)(c) state that “Notwithstanding the provisions of 310 CMR 10.02(1) and (2)(a) and (b), stormwater

*management systems designed, constructed, installed, operated, maintained, and/or improved as defined in 310 CMR 10.04 in accordance with the Stormwater Management Standards as provided in the Stormwater Management Policy (1996) or 310 CMR 10.05(6)(k) through (q) do not themselves constitute Areas Subject to Protection under M.G.L. c. 131, § 40 or Buffer Zone provided that: (1) the system was designed, constructed, installed, and/or improved as defined in 310 CMR 10.04 on or after November 18, 1996; and (2) if the system was constructed in an Area Subject to Protection under M.G.L. c. 131, § 40 or Buffer Zone, the system was designed, constructed, and installed in accordance with all applicable provisions in 310 CMR 10.00.”* The revised regulations, however, offer no such exemption/protection to systems designed, constructed, installed, operated, maintained, or improved prior to November 18, 1996. Adjudicatory hearing decisions have clearly indicated that if an area within an older stormwater management basin meets the definition of a resource area, it is to be considered a resource area under the Regulations. EcoTec is not aware of the permitting history of this area, but suspects that the area is a stormwater management basin due to the presence of an ADS pipe inlet from an adjacent catch basin.

Bordering Land Subject to Flooding is an area that floods due to a rise in floodwaters from a bordering waterway or water body. Where flood studies have been completed, the boundary of Bordering Land Subject to Flooding is based upon flood profile data prepared by the National Flood Insurance Program. Section 10.57(2)(a)3. states that “The boundary of Bordering Land Subject to Flooding is the estimated maximum lateral extent of flood water which will theoretically result from the statistical 100-year frequency storm.” Based upon a review of the Flood Insurance Rate Map, Worcester County, Massachusetts, Map Number 25027C0928E, Effective Date 7/1/2011, there is a mapped Zone AE (i.e., 100-year floodplain with specified elevations) located on the site. The project engineer should evaluate the most recent National Flood Insurance Program flood profile data to determine if Bordering Land Subject to Flooding occurs on the site. Bordering Land Subject to Flooding would occur in areas where the 100-year flood elevation is located outside of or upgradient of the delineated Bordering Vegetated Wetlands or Bank boundary. Bordering Land Subject to Flooding does not have a Buffer Zone under the Act.

The Massachusetts Rivers Protection Act amended the Act to establish an additional wetland resource area: Riverfront Area. Based upon a review of the current USGS Map (i.e., Southbridge Quadrangle, dated 1982, attached), a stream (Hamant Brook) that is shown as perennial is located in the central portion of the site. Streams that are shown as perennial on the current USGS map are designated perennial under the Massachusetts Wetlands Protection Act regulations. Unless this perennial designation is overcome, Riverfront Area is presumed to extend 200 feet horizontally upgradient from the mean annual high-water line of the stream. Section 10.58(2)(a)2. states that the “Mean annual high-water line of a river is the line that is apparent from visible markings or changes in the character of soils or vegetation due to prolonged presence of water and that distinguishes between predominantly aquatic and predominantly terrestrial land. Field indicators of bankfull conditions shall be used to determine

the mean annual high-water line. Bankfull field indicators include but are not limited to: changes in slope, changes in vegetation, stain lines, top of pointbars, changes in bank materials, or bank undercuts.” Section 10.58(2)(a)2.a. states that “In most rivers, the first observable break in slope is coincident with bankfull conditions and the mean annual high-water line.” The mean annual high-water line of the stream was delineated in the field with flags R1 to R38, RA1 to RA39, RB1 to RB19, RC1 to RC8, and RD1 to RD12 based upon the above-referenced regulation. Furthermore, based upon a review of the current USGS Map and observations made during the site inspection, a stream that is not shown on the USGS Map is located in the southeastern portion of the site. The watershed area for this B/K/L series stream at the site was determined to be 0.0356 square miles, which is less than 0.5 square miles (see attached watershed calculations). As such, the stream would be designated intermittent under the Massachusetts Wetlands Protection Act regulations. Furthermore, based upon a review of the current USGS Map and observations made during the site inspection, there are no other mapped or unmapped streams located within 200 feet of the site. Accordingly, except as noted above, Riverfront Area would not occur on the site. Riverfront Area does not have a Buffer Zone under the Act, but may overlap other wetland resources and their Buffer Zones.

The Regulations require that no project may be permitted that will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures set forth at 310 CMR 10.59. Based upon a review of the *Massachusetts Natural Heritage Atlas*, 14<sup>th</sup> edition, Priority Habitats and Estimated Habitats from the NHESP Interactive Viewer, valid from August 1, 2017, and Certified Vernal Pools from MassGIS, there are no Estimated Habitats [for use with the Act and Regulations (310 CMR 10.00 *et seq.*)], Priority Habitats [for use with Massachusetts Endangered Species Act (M.G.L. Ch. 131A; “MESA”) and MESA Regulations (321 CMR 10.00 *et seq.*)], or Certified Vernal Pools on or in the immediate vicinity of the site. A copy of this map is attached.

The reader should be aware that the regulatory authority for determining wetland jurisdiction rests with local, state, and federal authorities. Brief descriptions of our experience and qualifications are attached. If you have any questions, please feel free to contact me at any time.

Cordially,  
ECOTEC, INC.



Scott Jordan, CPESC  
Senior Environmental Scientist

# EcoTec, Inc.

---

## ENVIRONMENTAL CONSULTING SERVICES

102 Grove Street

Worcester, MA 01605-2629

508-752-9666 – Fax: 508-752-9494

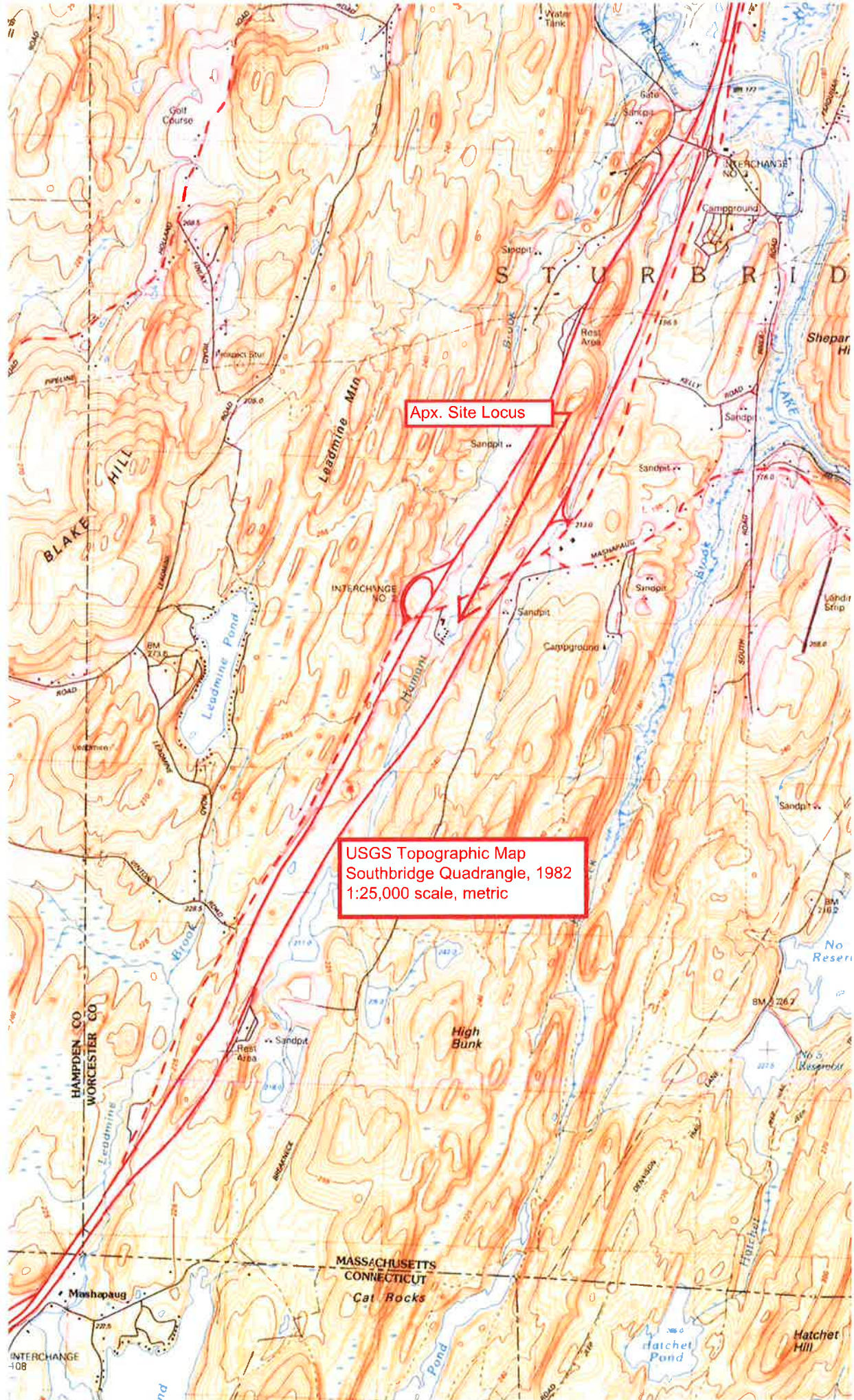
### **Scott Jordan, CPESC Environmental Scientist**

Scott Jordan is an Environmental Scientist with EcoTec, Inc. Since joining EcoTec in 2000, Mr. Jordan's duties have included wetland resource evaluation and delineation; erosion and sediment control planning and monitoring, environmental monitoring, including water quality analysis, sediment analysis and wildlife habitat impact analysis; environmental permitting at local, state, and federal level; pond and stream evaluation; wildlife habitat evaluation, vernal pool evaluation; and wetland restoration and replication design and oversight. He has served as an environmental consultant to the development community, engineering firms, municipalities, and conservation commissions. Prior to joining EcoTec, Mr. Jordan was the Senior Laboratory Technician for GeoComp Corporation where he performed numerous physical properties analysis of soils and geosynthetic materials in accordance with ASTM, and AASHTO specifications. His approximately seven years experience evaluating New England soils includes soil analysis and classification of site-remediated soils with oil and hazardous material contamination. His educational background includes courses in organic and inorganic chemistry, biology, botany and comparative vertebrate physiology, with extensive coursework in ecology and wildlife biology; and he has completed several professional training seminars including erosion and sediment control, soil evaluation, wildlife habitat evaluation, wetland mitigation, vernal pool evaluation, water quality assessment using macro-invertebrates, and river morphology and functions. He has participated in several wildlife monitoring and inventory projects, including marsh bird surveys, marbled salamander (*Ambystoma opacum*) survey, and greater black-backed gull (*Larus marinus*) inventory. His prior research experience includes behavioral and acoustic studies of the common loon (*Gavia immer*) in northwestern Maine.

**Education:** Bachelor of Science: Biology - Wildlife and Environmental, *Cum Laude*  
Framingham State College, 2000  
Biotechnology Certificate  
Middlesex Community College, 1994

### **Professional**

**Affiliations:** Certified Professional in Erosion and Sediment Control (Cert. #3644)  
Massachusetts Association of Conservation Commissioners  
Association of Massachusetts Wetland Scientists  
Society of Wetland Scientists  
Society of Soil Scientists of Southern New England

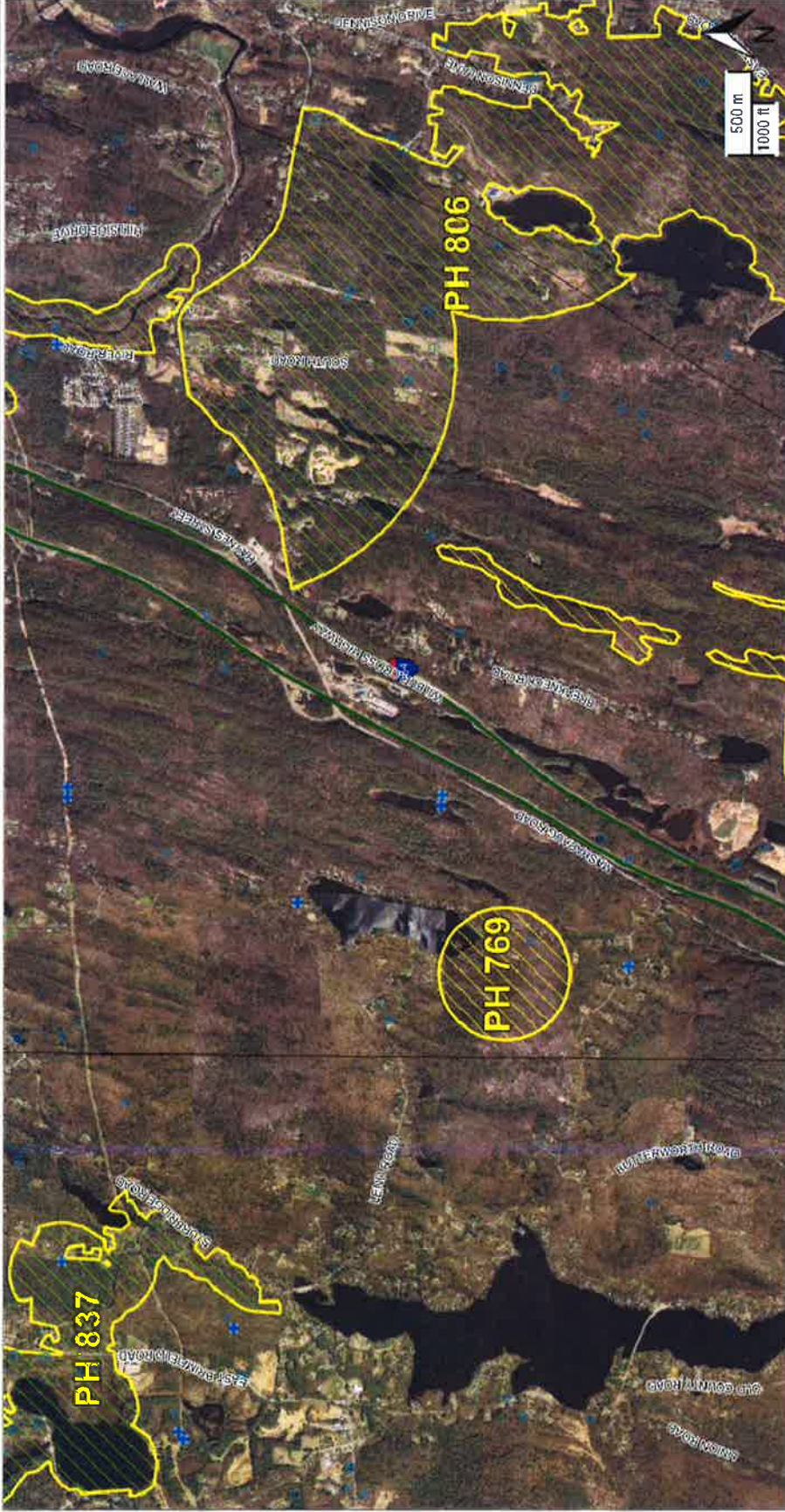


Apx. Site Locus

USGS Topographic Map  
Southbridge Quadrangle, 1982  
1:25,000 scale, metric



NHESP Map\_400 Haynes St. Sturbridge, Ma



- Potential Vernal Pools
  - NHESP Certified Vernal Pools
  - MassDOT Roads
  - Major MassDOT Routes
  - Interstate Highways
  - US Roads
  - State
  - Massachusetts Towns
  - NHESP Estimated Habitats (Wildlife)
  - NHESP Priority Habitats of Focus
- Orthos 2013-2014  
2013-2014 Color Orthos (US

# National Flood Hazard Layer FIRMette



42°4'10.08"N

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

## Legend

**SPECIAL FLOOD HAZARD AREAS**

- Without Base Flood Elevation (BFE) Zone A, V, X
- With BFE or Depth Zone AE, AO, AH, VE, AP
- Regulatory Floodway

**OTHER AREAS OF FLOOD HAZARD**

- 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee. See Notes. Zone X
- Area with Flood Risk due to Levee Zone X

**OTHER AREAS**

- Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Zone X

**GENERAL STRUCTURES**

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

**OTHER FEATURES**

- Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

**MAP PANELS**

- Digital Data Available
- No Digital Data Available
- Unmapped

**Other Legend Items:**

- Pin: The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.
- North Arrow: N

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **1/13/2020 at 4:33:24 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



USGS The National Maps, Orthoimagery. Data refreshed April, 2019.



72°6'9.46"W

42°3'43.38"N

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

Applicant: \_\_\_\_\_ Prepared by: EcoTec, Inc Project Location: Sturbridge, 400 Haynes St DEP File # \_\_\_\_\_  
 Section I. Vegetation Number: TPU @ K6 Transect # Upland Date of Delin: 1/15/2020

A. Sample layer and plant species (Enter largest to smallest % cover by layer)	Percent Cover (or basal area)	Percent Dominance	Dominant Plant?	Wetland Indicator Category
Tree				
Red oak	10		12.5 No	FACU-
Eastern hemlock	30		37.5 YES	FACW *
Red maple	10		12.5 NO	FAC *
Black birch	30		37.5 YES	FACU
Sapling				
Red maple	5		33.3 YES	FAC *
Eastern hemlock	10		66.7 YES	FACW *
Shrub				
Eastern hemlock	5		100.0 YES	FACW *
Ground				
None				
Vine				
None				

Vegetation Conclusions	
Number of dominant wetland indicator plants	4
Is the number of dominant wetland plants equal or greater than the number of dominant non-wetland plants?	Number of dominant non-wetland indicator plants YES

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

Applicant \_\_\_\_\_ Prepared by: EcoTec, Inc \_\_\_\_\_ Project Location: Sturbridge, 400 Haynes St \_\_\_\_\_ DEP File # \_\_\_\_\_  
 Section II. Indicators of Hydrology Number: TPU @ K6 \_\_\_\_\_ Transect # Upland \_\_\_\_\_ Date of Delin: 1/15/2020

### 1. Soil Survey

Is there a published soil survey for this site?

title/date

map number

soil type mapped

hydric soil inclusions

Are field observations consistent with soil survey?

Remarks:

### 2. Soil Description

Horizon	Depth (inches)	Matrix Color	Mottle Color
Litter	1		
O	2-0		
A	0-4	10YR 2/1	
Bw	4-12+	10YR 4/6	

Remarks Fine sandy loam

### 3. Other

**Conclusion: Is the soil hydric?** No

### Other Indicators of hydrology (check all that apply):

- 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 BVWs
- Oxidized rhizospheres
- Water stained leaves
- Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- Other:

### Vegetation and Hydrology Conclusion

- Number of wetland indicator plants ≥ number of non-wetland indicator plants
  - Yes
  - No
- Wetland hydrology present:
  - Hydric soil present
  - Other indicators of hydrology present
- Sample Location is in a BVW

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

Applicant: \_\_\_\_\_ Prepared by: EcoTec, Inc Project Location: Sturbridge, 400 Haynes St DEP File # \_\_\_\_\_  
 Section I. Vegetation Number: TPW @ K6 Transect # Wetland Date of Delin: 1/15/2020

A. Sample layer and plant species (Enter largest to smallest % cover by layer)	Percent Cover (or basal area)	Percent Dominance	Dominant Plant?	Wetland Indicator Category
<b>Tree</b>				
Red oak	15		17.6 YES	FACU-*
Eastern hemlock	30		35.3 YES	FACW*
White pine	5		5.9 NO	FACU*
Red maple	20		23.5 YES	FAC*
Black birch	15		17.6 NO	FACU*
<b>Sapling</b>				
Red maple	5		50.0 YES	FAC*
Eastern hemlock	5		50.0 YES	FACW*
<b>Shrub</b>				
None				
<b>Ground</b>				
None				
<b>Vine</b>				
None				

<b>Vegetation Conclusions</b>	
Number of dominant wetland indicator plants	<b>4</b>
Is the number of dominant wetland plants equal or greater than the number of dominant non-wetland plants?	Number of dominant non-wetland indicator plants <b>1</b> YES

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

Applicant: EcoTec, Inc      Prepared by: EcoTec, Inc      Project Location: Sturbridge, 400 Haynes St      DEP File #

Section II. Indicators of Hydrology      Number: TPW @ K6      Transect # Wetland      Date of Delin: 1/15/2020

**1. Soil Survey**

Is there a published soil survey for this site?

title/date	
map number	
soil type mapped	
hydric soil inclusions	surface

Are field observations consistent with soil survey?

Remarks:

**2. Soil Description**

Horizon	Depth (inches)	Matrix Color	Mottle Color
Litter	1		
Oa	0-12		
R	12+		

Other Indicators of hydrology (check all that apply):

- 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 BVWs
- Oxidized rhizospheres
- Water stained leaves
- Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- Other:

**Vegetation and Hydrology Conclusion**

Number of wetland indicator plants ≥ number of non-wetland indicator plants	Yes	No
	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wetland hydrology present:		
Hydric soil present	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other indicators of hydrology present	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sample Location is in a BVW	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Remarks      Mucky loam

**3. Other**

**Conclusion: Is the soil hydric?**      Yes