

# EcoTec, Inc.

ENVIRONMENTAL CONSULTING SERVICES

102 Grove Street

Worcester, MA 01605-2629

508-752-9666 – Fax: 508-752-9494

April 7, 2021

Chris Henchey  
Henchey, LLC  
5 Edgemere Blvd  
Shrewsbury, MA 01545

RE: Wetland Resource Evaluation, 39, 49 & 69 Upland Street, Worcester, Massachusetts

Dear Mr. Henchey:

On March 12, 2021, 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 Worcester Wetlands Protection Ordinance 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, CPESC conducted the inspection.

The subject site consists of an undeveloped parcel located along the southerly side of Upland Street in Worcester, Massachusetts. The upland portions of the site are largely wooded and undeveloped. 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 was delineated in the field in accordance with the definition set forth in the regulations at 310 CMR 10.55(2)(c). 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.” 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. One set of DEP Bordering Vegetated Wetland Delineation Field Data Forms completed for observation plots located in the wetlands and uplands near flag A-7 is attached. The table below provides the Flag Numbers, Flag Type, and Wetland Types and Locations for the delineated wetland resources.

**RECEIVED**

By Mattie VandenBoom at 4:27 pm, Feb 28, 2024

Flag Numbers	Flag Type	Wetland Types and Locations
A-1 to A-9	Blue Flags	Boundary of Bordering Vegetated Wetlands located in the southerly corner of the site that is associated with an unmapped, intermittent stream.

### Findings

Wetland A (i.e., flags A1 to A9) consists of a wooded swamp located in the southerly portion of the site that is associated with an intermittent stream. Plant species observed include red maple (*Acer rubrum*) trees and/or saplings; common winterberry (*Ilex verticillata*) and arrow-wood (*Viburnum dentatum*) shrubs; and sensitive fern (*Onoclea sensibilis*) 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 Ordinance. A 100-foot Buffer Zone extends horizontally outward from the edge of Bordering Vegetated Wetlands under the Act and Ordinance.

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.” 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 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., Worcester South Quadrangle, dated 1983, attached) and observations made during the site inspection, a stream that is not shown on the USGS Map is located in or near the southern portion of the site. The watershed area for this stream at the site was determined to be less than 0.5 square miles. 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, Riverfront Area would not occur on the site. Riverfront Area does not have a Buffer Zone under the Act.

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

39, 49 & 69 Upland St., Worcester

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3/12/2021, 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.

A handwritten signature in cursive script that reads "Scott Jordan".

Scott Jordan, CPESC  
Senior Environmental Scientist

Attachments (10 pages)

11/W/WorcesterUplandSt394969Report







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

Applicant: Prepared by: EcoTec, Inc Project Location: 39,49,69 Upland St, Worcester DEP File #:                       
 Section II. Indicators of Hydrology Number: TPW @ A7 Transect #: Wetland Date of Delin: 3/12/2021

### 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		
A	0-10	10YR 2/2	
Bw	10-14	10YR 4/2	10%, 10YR 5/1

Remarks: fine sandy loam

### 3. Other

**Conclusion: Is the soil hydric?**

Yes

### 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
  - Yes
  - No

# National Flood Hazard Layer FIRMette

71°48'26"W 42°13'37"N



## Legend

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

**SPECIAL FLOOD HAZARD AREAS**

- Without Base Flood Elevation (BFE)  
Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

**OTHER AREAS OF FLOOD HAZARD**

- 0.2% Annual Chance Flood Hazard, Areas 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 D

**OTHER AREAS**

- NO SCREEN
- Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Zone D

**GENERAL STRUCTURES**

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

**OTHER FEATURES**

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

**MAP PANELS**

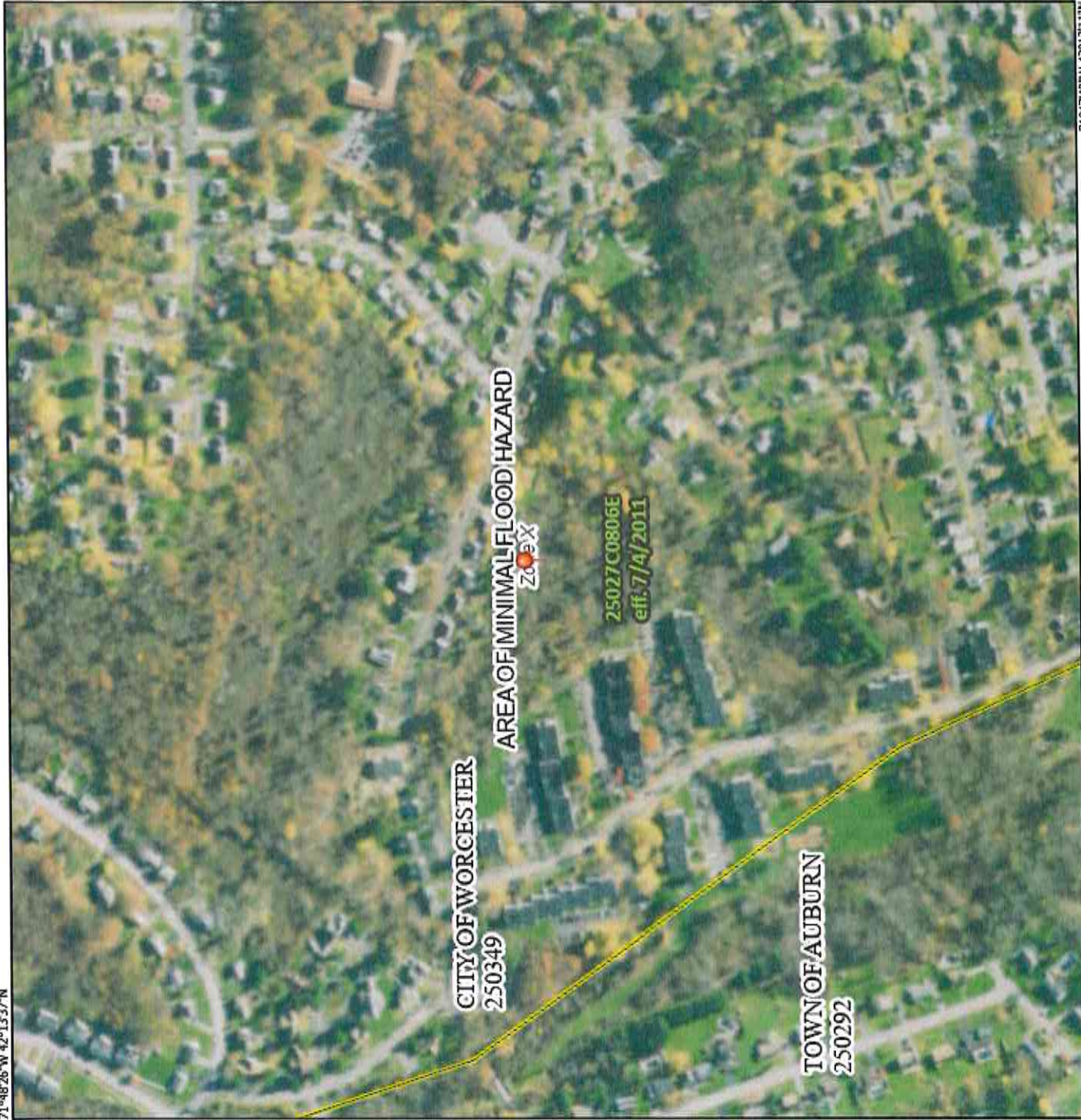
- Digital Data Available
- No Digital Data Available
- Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

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 4/7/2021 at 11:14 AM 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.

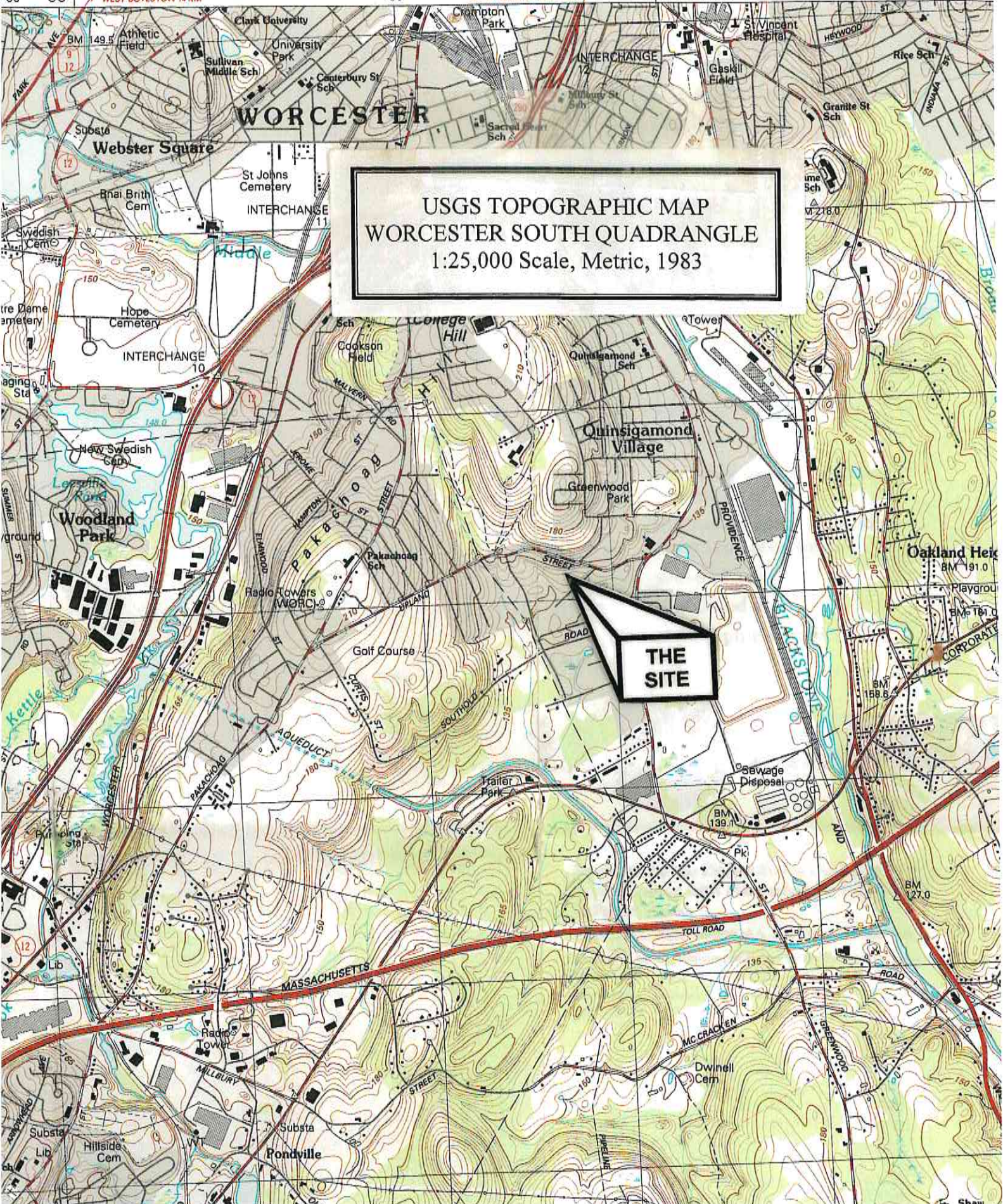
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory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



0 250 500 1,000 1,500 2,000 Feet 1:6,000  
 Base map: USGS National Map: Orthoimagery: Data refreshed October, 2020



266 50' WEST BOYLSTON 14 KM 268 32 KM TO INTERSTATE 495 47' 30" 270 271



USGS TOPOGRAPHIC MAP  
 WORCESTER SOUTH QUADRANGLE  
 1:25,000 Scale, Metric, 1983

THE SITE

Clear Basin

Edit Basin

Specific Functions

Additional functions are available in Massachusetts.

Check For Water Use

Download Basin

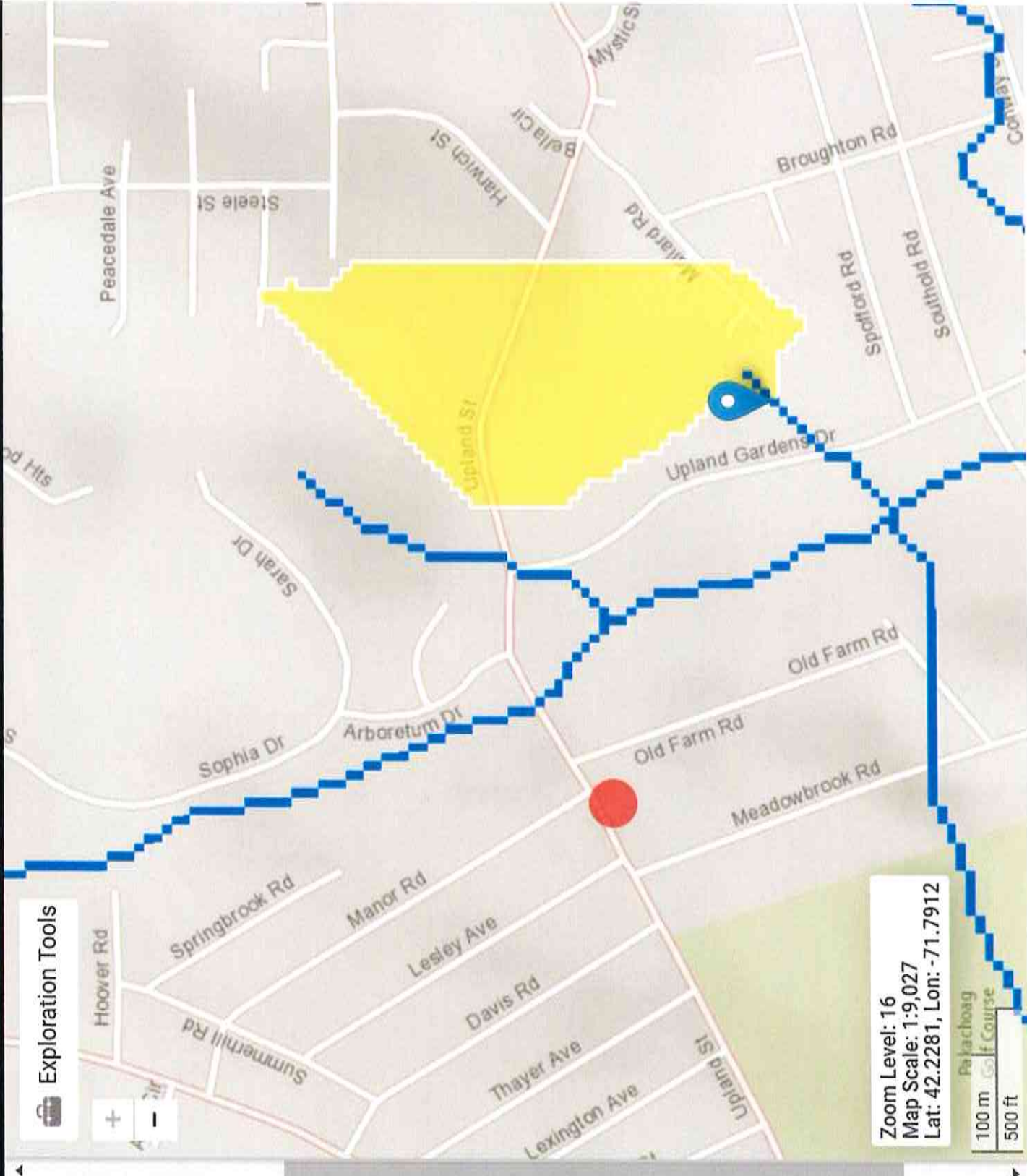
OR

Continue

SELECT SCENARIOS

BUILD A REPORT

POWERED BY WIM



49 upland street, worcester

Zoom to a town



0 m

Basemaps

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## Scott Jordan, CPESC Senior 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 rare species and wildlife monitoring and inventory projects, including marsh bird surveys, marbled salamander (*Ambystoma opacum*) survey, great laurel (*Rhododendron maximum*) survey, wood turtle (*Glyptemys insculpta*) habitat assessments and sweeps, eastern box turtle (*Terrapene carolina*) habitat assessments, 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

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### **Scott M. Morrison, PWS, RPSS, SE** **Senior Environmental Scientist**

Scott Morrison is a Senior Environmental Scientist with EcoTec, Inc. Since joining EcoTec in 2000, Mr. Morrison's project experience include wetland resource evaluation, delineation, and permitting at the local, state, and federal levels; wildlife habitat evaluation; pond and stream evaluation; vernal pool evaluation, monitoring, and certification; wetland replacement, replication, and restoration area design, construction, and monitoring; soil evaluations to determine infiltration rates and seasonal high groundwater elevations for detention basin construction; environmental sampling and analysis tasks, including soil and groundwater sample collection and handling; and expert testimony preparation. He has conducted rare species habitat assessments for the eastern box turtle, wood turtle, Blanding's turtle, spotted turtle, and marbled salamander. He has participated in rare species studies for rare species including the marbled salamander, piping plover, eastern box turtle, and northern diamondback terrapin and developed mitigation strategies for the marbled salamander, spotted turtle, eastern box turtle and wood turtle. He has participated in visual preconstruction sweeps for the wood turtle and both preconstruction and research projects for the eastern box turtle. He has served as a consultant to municipalities, conservation commissions, engineering and survey firms. He has completed numerous wetland related projects including environmental impact assessments for proposed development, erosion control and environmental monitoring for subdivisions, commercial developments, golf courses and landfills. He has prepared Massachusetts Environmental Policy Act (MEPA) documentation, including Environmental Notification Forms (ENFs), Notice of Project Changes (NPCs), and Draft and Final Environmental Impact Reports (EIRs) including Green House Gas Assessments for various projects including subdivisions, commercial buildings, and dredging projects. Prior to joining EcoTec, Inc. Mr. Morrison worked for the Massachusetts Department of Environmental Management (currently the Department of Conservation and Recreation) where he was involved with the monitoring and protection of endangered species and rare old growth forest. He was an active member of the Spencer Conservation Commission from 1998 to 2000 where he provided oversight of proposed wetland replication projects and review of projects submitted for wetland permitting. His educational background includes courses in forestry, ecology, chemistry, soils, and natural resource policy. His prior research experience includes research on forest succession and field research on nesting piping plovers, an endangered coastal shore bird.

#### **Education:**

Graduate Soil Science Certificate Program  
University of Massachusetts at Amherst, 2006  
Bachelor of Science: Natural Resource Studies  
University of Massachusetts at Amherst, 1998  
Associate of Science: Business Administration  
Quinsigamond Community College, 1996

#### **Professional Affiliations:**

Registered Professional Soil Scientist, Society of Soil Scientists of  
Southern New England (SSSSNE)  
Massachusetts Association of Conservation Commissioners  
Association of Massachusetts Wetland Scientists  
Society of Wetland Scientists

#### **Certifications:**

Society of Wetlands Scientists Professional Wetland Scientist,  
Certification Number 2583  
Massachusetts Department of Environmental Protection Soil Evaluator,  
Certification Number SE 13766