



# Inland Wetland Delineation Report

**Bethel School Sites  
400 Whittlesey Drive  
Bethel, Connecticut**

**April 25, 2017  
MMI #4494-08-01**

## **INTRODUCTION**

This report details the inland wetland delineation investigation at two school sites: Rockwell School and Johnson School. The schools are part of an extensive complex of school buildings, playing fields, and related infrastructure. Most of the soils have been extensively altered. The complex is bordered roughly by East Swamp Brook to the northeast and Judd Avenue to the southwest. The attached resource maps show the existing conditions at the site.

## **WETLANDS AND WATERCOURSES DELINEATION**

The site was investigated for the presence of inland wetlands on April 14, 2017, by William A. Root, a certified professional soil scientist with Milone & MacBroom, Inc. (MMI), in accordance with the regulations of the Town of Bethel and the State of Connecticut *Inland Wetlands and Watercourses Act*, CGS 22a-36 through 45. Regulated wetland areas consist of any of the soil types designated by the National Cooperative Soils Survey as poorly drained, very poorly drained, alluvial, or floodplain. Regulated watercourses consist of rivers; streams; brooks; waterways; lakes; ponds; marshes; swamps; bogs; and all other bodies of water, natural or artificial, vernal or intermittent, public or private, not regulated pursuant to sections 22a-28 to 22a-35, inclusive (tidal wetlands).

In general, transects were walked over the site looking for evidence of redoximorphic features in the soil (hydric soils), a predominance of wetland-adapted plants (hydrophytic vegetation), and evidence of high groundwater persisting into the growing season (wetland hydrology). All areas of flowing or standing water and channels were inspected for evidence of ordinary high water marks diagnostic of watercourses (perennial or intermittent). Soils were examined using a spade and Dutch auger. Conditions were suitable for wetland delineation work.

Prior to the fieldwork, geospatial data was accessed via the Web Soil Survey to determine current United States Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS) soil survey mapping for the project site (<http://websoilsurvey.nrcs.usda.gov>). A copy of the web soil survey mapping is appended to this report. The USDA-NRCS identifies the following dominant soil map units in the project area:

- *Agawam* fine sandy loam (#29), moderately well drained
- *Hinckley* loamy sand (#38), excessively drained
- *Urban Land – Charlton – Chatfield complex* (#273), well drained
- *Udorthents – Urban Land* (#306, #308), well drained
- *Rippowam* fine sandy loam (#103), poorly drained

### Upland Soils

In their natural setting, the upland soils are glaciofluvial soils formed in stratified sand and gravel. The parent material of these soils is acidic crystalline rocks. Most of the site has been altered during construction of the schools and related improvements. Although upland soils were examined in the field, their precise boundaries were not delineated.

### Wetland Soils

The USDA-NRCS mapped wetland soil on the site is (*Rippowam*) a poorly drained, fine sandy loam. This series is an alluvial soil formed in water-sorted sand and silt. The parent material is also acidic crystalline rocks.

### Field Survey Results

The fieldwork substantially confirmed the published soil survey mapping. Wetland soils were only identified along East Swamp Brook in the northeastern section of the site. Elsewhere the following was identified:

1. Rockwell School – No wetlands or watercourses were identified. The entire perimeter of the site was explored including the wooded areas to the south and west and the lawn areas bordering the roadways. The playing fields were not sampled but certainly appeared to be upland in character. There is a graded, grassy swale along the roadway. It was dry at the time of the site visit and does meet criteria as either a wetland or a watercourse.
2. Johnson School – The entire perimeter of the site was explored. The observed wetlands were, as mapped, bordering the brook. The brook itself is deeply incised in most places, and there is very little bordering vegetated wetland associated with it. Therefore, in most places the regulatory limit is the "ordinary high water mark" close to the brook itself.
3. There is a man-made, detention/water quality basin easily noted on the site topographic maps. It is located east of the school in what was an area of upland soils. Runoff is stored here and is metered out through a constructed outlet as seen in the attached photographs. The basin is entirely fenced. The interior was observed and photographed but not accessed. There was some standing water within the lowest part of the basin after recent rains. But in these sand-based soils, it likely dries rapidly during most times of the year. A mix of upland plants and hydrophytes were noted within the basin. The riprap stone that stabilizes the outflow channel to the brook is somewhat eroded.
4. Approximately 100 feet west of the baseball field there was runoff observed within a swale that may occasionally reach the brook through intervening upland areas. Drainage from the playing fields, skate park, and upper driveways is conveyed here.

### Wetland Cover Type and Vegetation

The wetland resources present on and adjacent to the project site are described herein using the U.S. Fish and Wildlife Service's wetland classification system described in *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979). Along East Swamp Brook in the eastern section of the site, there are palustrine forested wetlands. Dominant trees are red maple, American elm, yellow birch, eastern hemlock, and American beech. Dominant shrubs are spice bush, high bush blueberry, and winterberry. The herbaceous layer was not completely observable at this time of year, but remnants of skunk cabbage and sensitive fern were noted in the wetlands.

### SUMMARY

Two Bethel school sites were investigated for the presence of inland wetlands and watercourses by a certified professional soil scientist and evaluated by a wetland scientist. Apart from East Swamp Brook, no wetlands or watercourses were identified. The proposed activities take place far from the brook, and there are broad areas of forest as a buffer. If there are any questions or comments on this report or existing site conditions, please feel free to contact me.

Very truly yours,

MILONE & MACBROOM, INC.



William A. Root, MS  
Senior Project Specialist, Environmental

Attachments: USDA-NRCS Soil Survey Map  
CT DEEP Eco-Resource Maps  
Site Photographs

4494-08-a2017-rpt

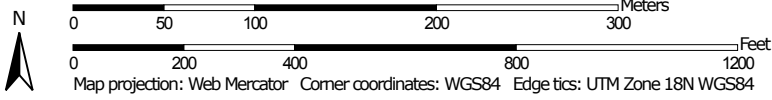
USDA-NRCS Soil Survey Map

Soil Map—State of Connecticut  
(Bethel Schools)




Soil Map may not be valid at this scale.

Map Scale: 1:4,160 if printed on A landscape (11" x 8.5") sheet.



## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

### Water Features



Streams and Canals

### Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

### Background



Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

**Warning:** Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut  
Survey Area Data: Version 15, Sep 28, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 28, 2011—Oct 9, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

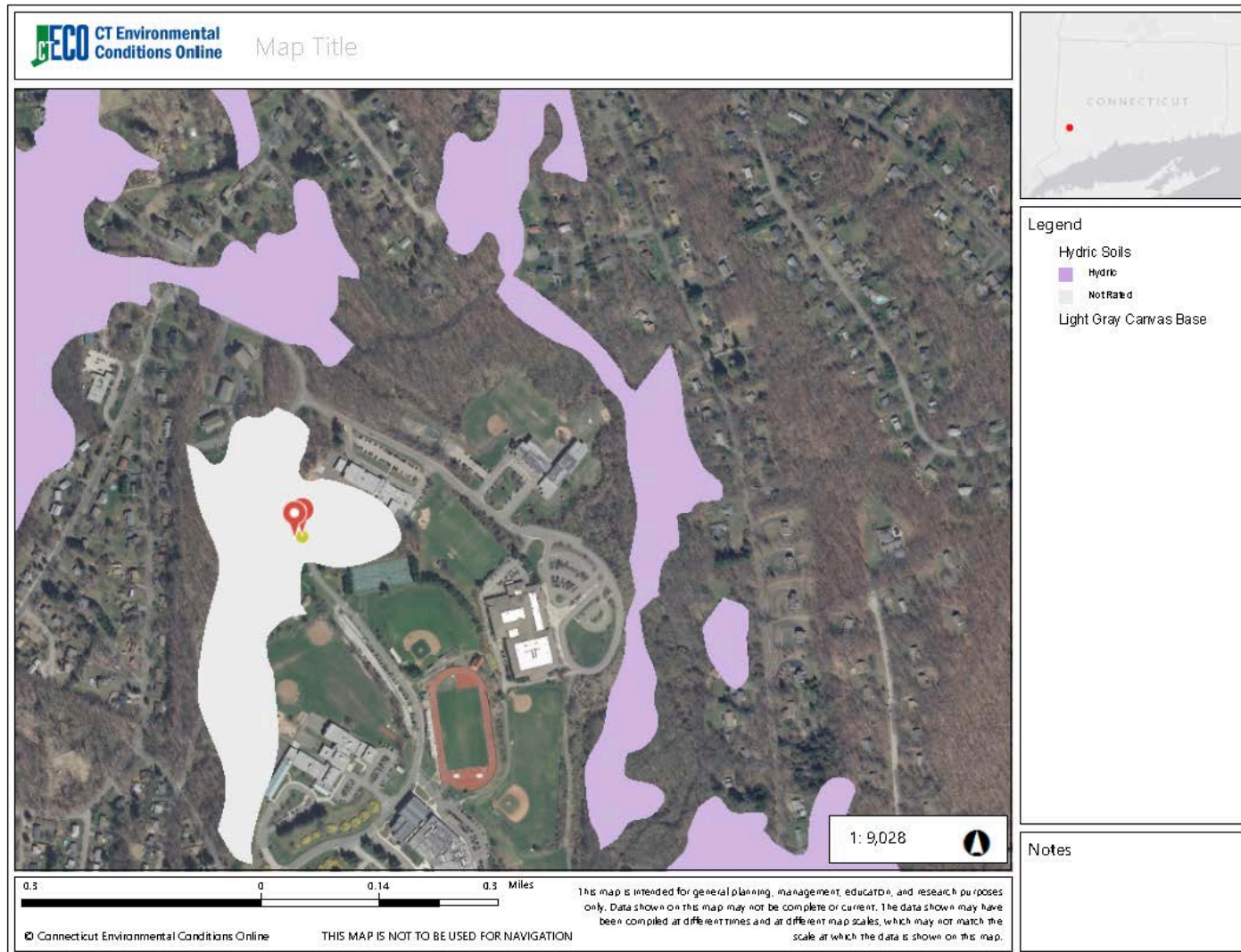
## Map Unit Legend

State of Connecticut (CT600)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
12	Raypol silt loam	3.2	5.2%
13	Walpole sandy loam, 0 to 3 percent slopes	0.1	0.1%
21A	Ninigret and Tisbury soils, 0 to 5 percent slopes	1.9	3.1%
29B	Agawam fine sandy loam, 3 to 8 percent slopes	2.8	4.6%
29C	Agawam fine sandy loam, 8 to 15 percent slopes	4.3	7.2%
34B	Merrimac fine sandy loam, 3 to 8 percent slopes	1.1	1.9%
38E	Hinckley loamy sand, 15 to 45 percent slopes	11.9	19.7%
46C	Woodbridge fine sandy loam, 8 to 15 percent slopes, very stony	0.7	1.2%
84D	Paxton and Montauk fine sandy loams, 15 to 25 percent slopes	0.1	0.1%
103	Rippowam fine sandy loam	4.8	8.0%
106	Winooski silt loam	0.2	0.3%
108	Saco silt loam	0.5	0.8%
273C	Urban land-Charlton-Chatfield complex, rocky, 3 to 15 percent slopes	4.0	6.6%
306	Udorthents-Urban land complex	16.0	26.6%
308	Udorthents, smoothed	8.8	14.6%
<b>Totals for Area of Interest</b>		<b>60.2</b>	<b>100.0%</b>

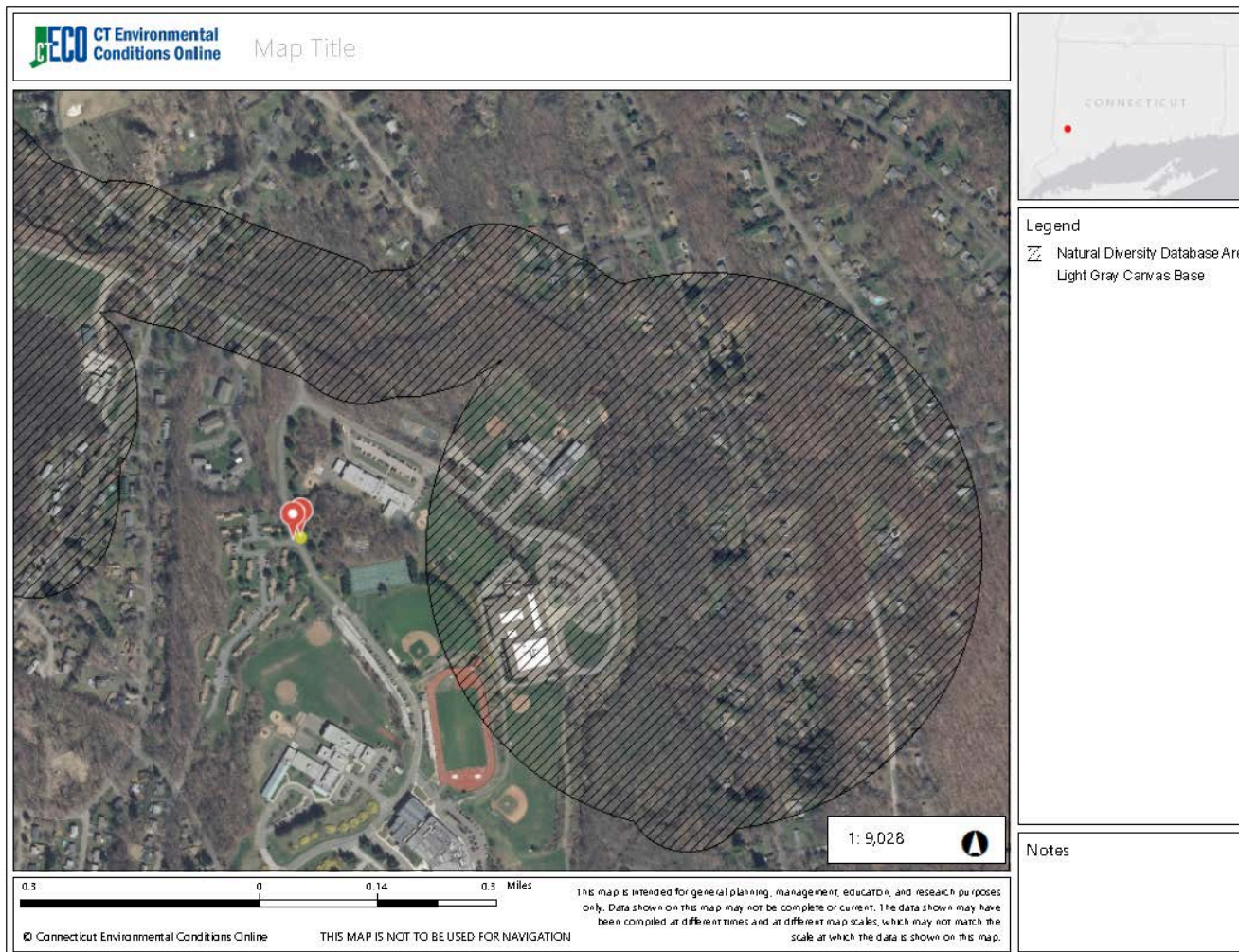
**CT DEEP Eco-Resource Maps**



1. Inland wetlands are mapped along East Swamp Brook (north and east) of the schools.



- 2. CT DEEP NDDB – Mapped occurrences appear associated with the brook. Many sites in this area support state-listed turtles such as Eastern box turtle and wood turtle. No inquiry has been filed with the state's NDDB.



## Site Photographs



# Site Photo Log

Bethel School Sites  
400 Whittlesey Drive  
Bethel, Connecticut

April 25, 2017  
Pictures were taken April 14, 2017.  
MMI #4494-08

**School trail along East Swamp Brook**  
**The brook is deeply incised with little bordering vegetated wetland.**



As above



As above



Foot bridge over basin outlet channel to brook



The channel to the brook is somewhat eroded.



Mostly dry detention basin dominated by cottonwood trees



As above



As above



**Grassy areas between Johnson School and the basin (to the right)**



**The baseball field is west of Johnson School. The school is in the background.**





Grassed swale at toe of slope alongside baseball field



Runoff swale in the woods west of the baseball field



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