995 East Center Street
Open Space Property
Wallingford, Connecticut

King's Mark
Environmental Review Team Report

King's Mark Resource Conservation & Development Area, Inc.

995 East Center Street Open Space Property
Wallingford, Connecticut

Environmental Review Report

Prepared by the King's Mark Environmental Review Team

Of the
King's Mark
Resource Conservation & Development Area, Inc.

For the
Conservation Commission
Wallingford, Connecticut

May 2013

Report #359

Acknowledgments

This report is an outgrowth of a request from the Wallingford Conservation Commission to the Southwest Conservation District (NWCD) and the CT ERT Subcommittee for their consideration and approval. The request was approved and the measure reviewed by the King's Mark Environmental Review Team (ERT).

The King's Mark Environmental Review Team Coordinator, Elaine Sych, would like to thank and gratefully acknowledge the following Team members whose professionalism and expertise were invaluable to the completion of this report.

The field reviews took place on Wednesday, October 3, 2012.

Robin Adamcewicz	Wildlife Technician DEEP – Eastern District Headquarters (860) 295-9523
Nicholas Bellantoni	State Archaeologist UCONN – CT Museum of Natural History (860) 486-5248
Steve Gephard	Supervising Fisheries Biologist DEEP – Inland Fisheries Division Habitat & Conservation Enhancement Program (860) 447-4316
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Lisa Krall	Resource Soil Scientist USDA-Natural Resources (860) 871-4051
Roman Mrozinski	Executive Director Southwest Conservation District (203) 287-8179
Charlotte Pyle	Landscape Ecologist USDA – Natural Resources Conservation Service (860) 871-4066

Randolph Steinen Geologist
DEEP – Geological Survey of CT
(860) 418-5931

I would also like to thank Erin O'Hare, environmental & natural resources planner, Dianne Saunders, Mary Heffernon, Carl Arsenault and Tom Pietras, conservation commission members, Don Roe, economic development coordinator, Kurt Treiber Jr., risk manager, Roger Dann, water and sewer department, and Steve Palermo, public works department, and Rob Rocks, service forester with CTDEEP for their cooperation and assistance during this environmental review.

Prior to the review day, each Team member received a summary of the proposed project with location, maps and aerial photos. During the field review Team members received additional information. Some team members made additional site visits. Reports from each Team member were submitted to the ERT coordinator for compilation and editing into this final report.

This report represents the Team's findings. It is not meant to compete with private consultants by providing site plans or detailed solutions to development problems. The Team does not recommend what final action should be taken on a proposed project - all final decisions rest with the Town. This report identifies the existing resource base and evaluates its significance to the proposed use, and also suggests considerations that should be of concern to the town. The results of this Team action are oriented toward the development of better environmental quality and the long term economics of land use.

The Kings Mark RC&D Executive Council hopes you will find this report of value and assistance in continued management of this town owned open space.

If you require additional information please contact:

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Table of Contents

Introduction

Introduction

The Wallingford Conservation Commission has requested Environmental Review Team (ERT) assistance in providing a review of the 995 East Center Street Property Open Space Property.

995 East Center Street is a 93+ acre piece of town owned open space that is currently predominantly in agricultural use. The property is located on the east side of town, bounded by East Center Street on the north, Tamarac Swamp Road on the west and Tyler Mill Preserve (a 1000 acre town owned property, subject of a 2002 ERT report) on the east. The land was acquired with State open space and watershed land grant monies. Currently the property is part of the Town of Wallingford's Farmland Lease Program and is being used for hay and cow pasture. In the past it has been used for vegetables. The property contains hayfield, tillable cropland, wooded swamp, wet meadow, and a watercourse and farm pond.

Objectives of the ERT Study

The Town of Wallingford is requesting assistance from the ERT because it will provide valuable information for an analysis in developing a comprehensive land management plan through provision of natural resource data, ecological attributes, and land use analysis including options and best management practices for rented agricultural areas and natural areas on the property.

Specific concerns and information requested include: soils-various agricultural use options, topography and geology-resource inventory, erosion & sediment control-identify problem areas and recommendations, water quality, wetlands/pond-resource inventory, habitat value & preservation, vegetation- resource inventory, invasive species control, farmland preservation-retention of leasing program, management options, land use-lease areas, environmentally sensitive areas, CL& P easement, water utility easement, abutting town owned land, State of CT Conservation Easement, archaeology and historical significance-agricultural heritage identification and resource inventory.

The ERT Process

Through the efforts of the Wallingford Conservation Commission this environmental review and report was prepared for the Town of Wallingford.

This report provides an information base and a series of recommendations and guidelines which cover some of the issues of concern to the town. Team members were able to review maps, plans and supporting documentation provided by the town.

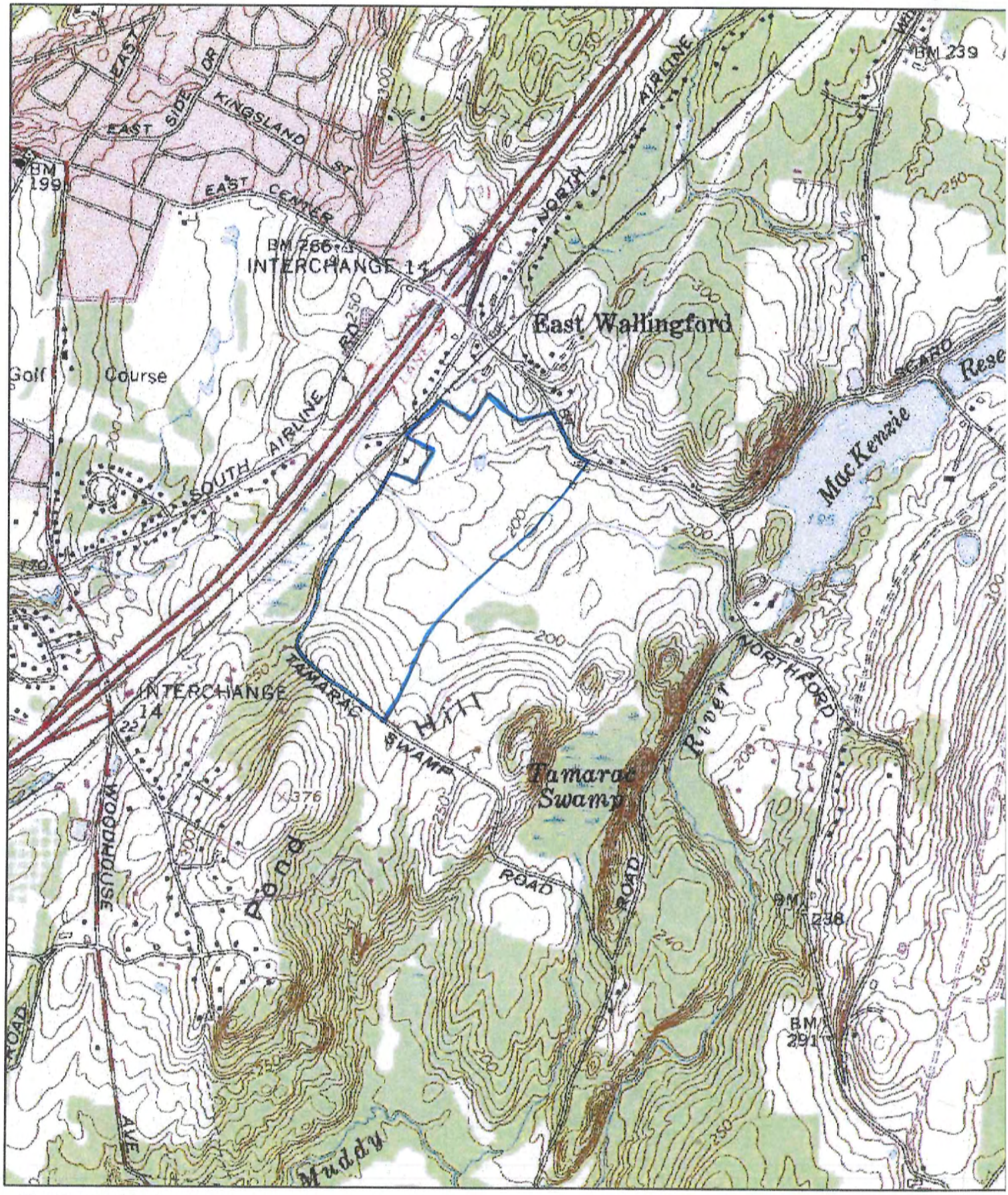
The review process consisted of four phases:

1. Inventory of the site's natural resources;
2. Assessment of these resources;
3. Identification of resource areas and review of plans; and
4. Presentation of education, management and land use guidelines.

The data collection phase involved both literature and field research. The field review was conducted Wednesday, October 3, 2012. Team members may have made additional field visits. The emphasis of the field review was on the exchange of ideas, concerns and recommendations. Being on site allowed Team members to verify information and to identify other resources.

Once Team members had assimilated an adequate data base, they were able to analyze and interpret their findings. Individual Team members then prepared and submitted their reports to the ERT coordinator for compilation into this final ERT report.

East Center Street Open Space Property NRI Topo Map



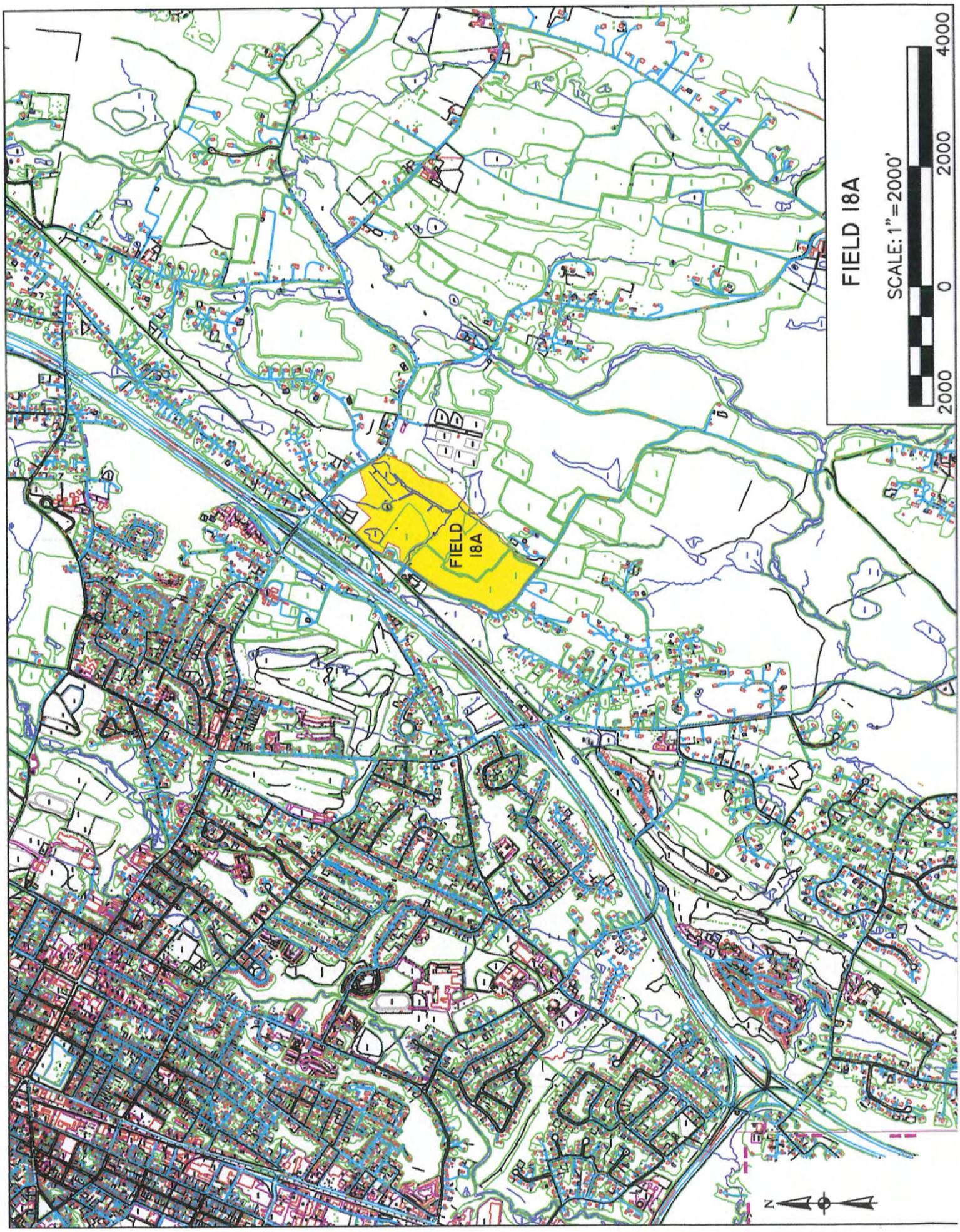
The Connecticut Environmental Review Team

This map was prepared by Amanda Fargo-Johnson for the Connecticut Environmental Review Team.
This map is for educational use only.
It contains no authoritative data.
August 2012.

N

0 0.1 0.2 0.4 0.6 Miles

Wallingford, CT


FIELD 18A
SCALE: 1"=2000'
4000
2000
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FIELD
18A
N

East Center Street Open Space Property NRI Color Aerial Map

The Connecticut Environmental Review Team

This map was prepared by Amanda Fargo-Johnson for the Connecticut Environmental Review Team.
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It contains no authoritative data.
August 2012.

N

0 0.04 0.08 0.16 0.24 Miles

Wallingford, CT

East Center Street Open Space Property NRI Aerial Map

The Connecticut Environmental Review Team

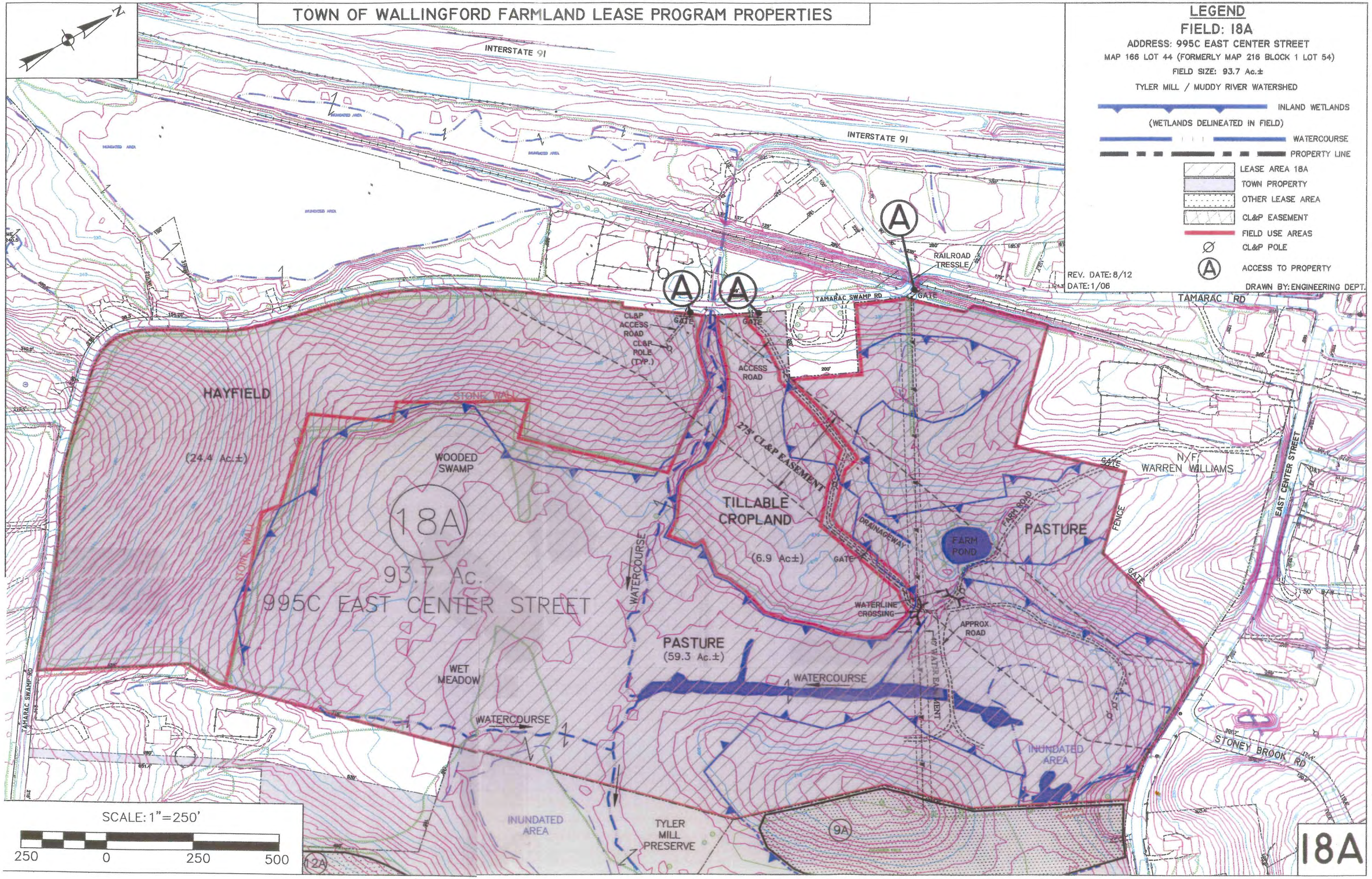
This map was prepared by Amanda Fargo-Johnson for the Connecticut Environmental Review Team.
This map is for educational use only.
It contains no authoritative data.
August 2012.

N

0 0.04 0.08 0.16 0.24 Miles

Wallingford, CT

TOWN OF WALLINGFORD FARMLAND LEASE PROGRAM PROPERTIES



LEGEND

FIELD: 18A

ADDRESS: 995C EAST CENTER STREET

MAP 166 LOT 44 (FORMERLY MAP 216 BLOCK 1 LOT 54)

FIELD SIZE: 93.7 Ac.±

TYLER MILL / MUDDY RIVER WATERSHED

- INLAND WETLANDS (WETLANDS DELINEATED IN FIELD)
- WATERCOURSE
- PROPERTY LINE
- LEASE AREA 18A
- TOWN PROPERTY
- OTHER LEASE AREA
- CL&P EASEMENT
- FIELD USE AREAS
- Ø CL&P POLE
- (A) ACCESS TO PROPERTY

REV. DATE: 8/12
DATE: 1/06

DRAWN BY: ENGINEERING DEPT.

SCALE: 1"=250'

250 0 250 500

Topography and Geology

Topography of the East Center Street Open Space Property (see Figure 1) consists of gentle rolling hills that are bisected by a small perennial stream and its tributary that is probably intermittent. Neither stream has a large watershed area. The highest elevation is on the parcel almost 300 feet (above sea level) at the southwest end of the parcel and the lowest elevation is just under 200 feet in swampy land where the perennial stream exits the property. Most of the parcel is well drained. The low area in the eastern and northeastern portion of the property is poorly drained and in addition has a watertable close to or, seasonally, at the surface.

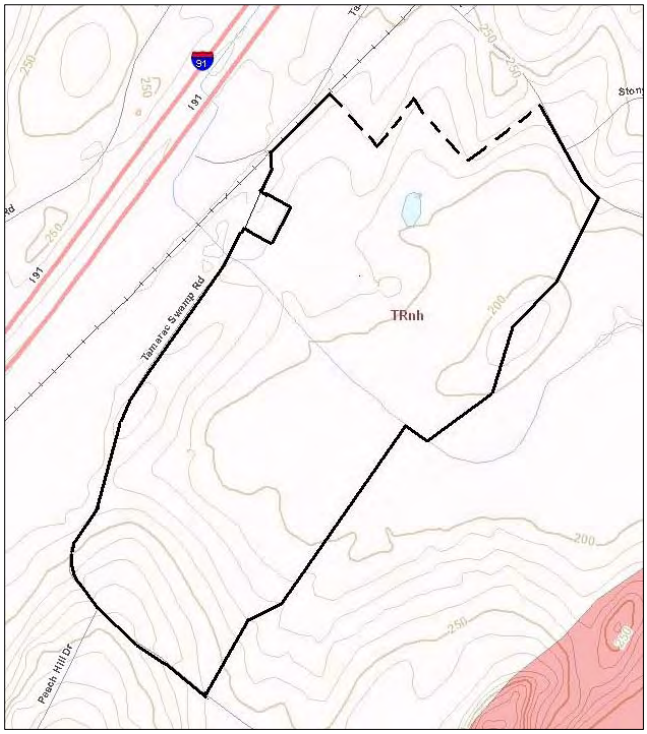


Figure 1. Topographic map of parcel (contour interval = 10'); parcel boundaries (black line, dashed were uncertain) are approximately located by author of this section. Perennial stream shown on map; tributary stream is not shown on map. It enters parcel on northeasterly end and flows southwesterly through the low area This map also show area to southeast of parcel that is underlain by traprock (shaded dark pink; from Rodgers, 1985. "TRnh" designates New Haven Formation – see text about geology below).

An unnamed perennial stream with headwaters north of I-91 (it drains about ¼ square mile north of the highway) enters the property from the northwest and runs straight downhill to a wetland area (the highway altered the natural course of the stream somewhat and is said to add roadway runoff from adjacent areas outside the natural drainage area). The stream was flowing at the time of this review. A small intermittent tributary stream heads just northeast of the parcel and flows southwesterly through the low area, joining the perennial stream in the center of the parcel. Recently parts of this steam have been dredged forming a pond-like area that is said to be a favorite area for livestock to cool themselves during hot weather (see Figure 2). This tributary stream was also flowing at the time of the review and may be perennial.

Much of the parcel is amenable to farming of one sort or another. Approximately 10 acres in the west-central portion is relatively flat (see Figure 3a) and has in the past been planted with row-crops. At the time of the review it was grass-covered. A large area on the southeastern end of the parcel has gentle to moderate slopes and is used as a hay-field (see Figure 3b). This area is a bob-o-link nesting area and haying is done only at the end of summer. The remaining area is used as pasture land (see Figure 3c).

Bedrock Geology

Wallingford is located within the Central Valley of Connecticut (Bell, 1985) which is underlain by Mesozoic sedimentary ("brownstone") and volcanic ("traprock") rocks. The rocks

formed about 200 million years ago. The entire parcel, however, is underlain only by sedimentary layers of the New Haven Formation (Rodgers, 1985; see Figure 1).

a

b

c

Figure 2. a. Confluence of tributary stream (flowing from right to left) with perennial stream (entering picture from upper right and exiting on left). Surrounding area is low and wet spring and much of the early summer but is said to be hayed in mid to late August. b. Dredged area is pond-like. c. Dredge-spoils on right; tributary stream in background. Figure 5 shows detail of hillside in near distance.

a.

Figure 3. a. Relatively flat grass-covered area used in the past for row crops. b. Gentle-sloped area at south-eastern part of parcel that is used as hayfield. c. Pasture land, looking north toward farm buildings in north corner of parcel.

b

c

Although no ledge crops out on the parcel, the New Haven Formation at nearby locations consists of layers of reddish-gray sandstone and shale, locally known as “brownstone”. The layers typically are tilted downward toward the east. In this part of Wallingford, the sedimentary layers were intruded by concordant layers of basalt, also known as “traprock”. Traprock crops out just east of the parcel and may be observed on Tamarac Swamp Road where it descends into Tamarac Swamp.

Quaternary Geology

During the last Ice Age, Wallingford was covered by as much as a kilometer of glacial ice. The glaciers flowed roughly from north to south (south-southwest in Wallingford and much of the Central Basin). The ice abraded the rock over which it flowed, creating enormous amounts of sediment that geologists call “till”. That sediment was deposited beneath the ice (lodgment till) as it flowed and on top of the ledge (melt-out till) when the ice melted. Till covers the ledge over the entire parcel (see Figure 4). The hay-field on the southeast end of the parcel (Figure 3b) is underlain by a thick deposit of lodgment till (designated “TT” on Figure 4) that was sculpted by the flow of the glacier. The hill, which extends off the map area has an oval outline, the axis of which is presumed parallel to the flow of the glacier.

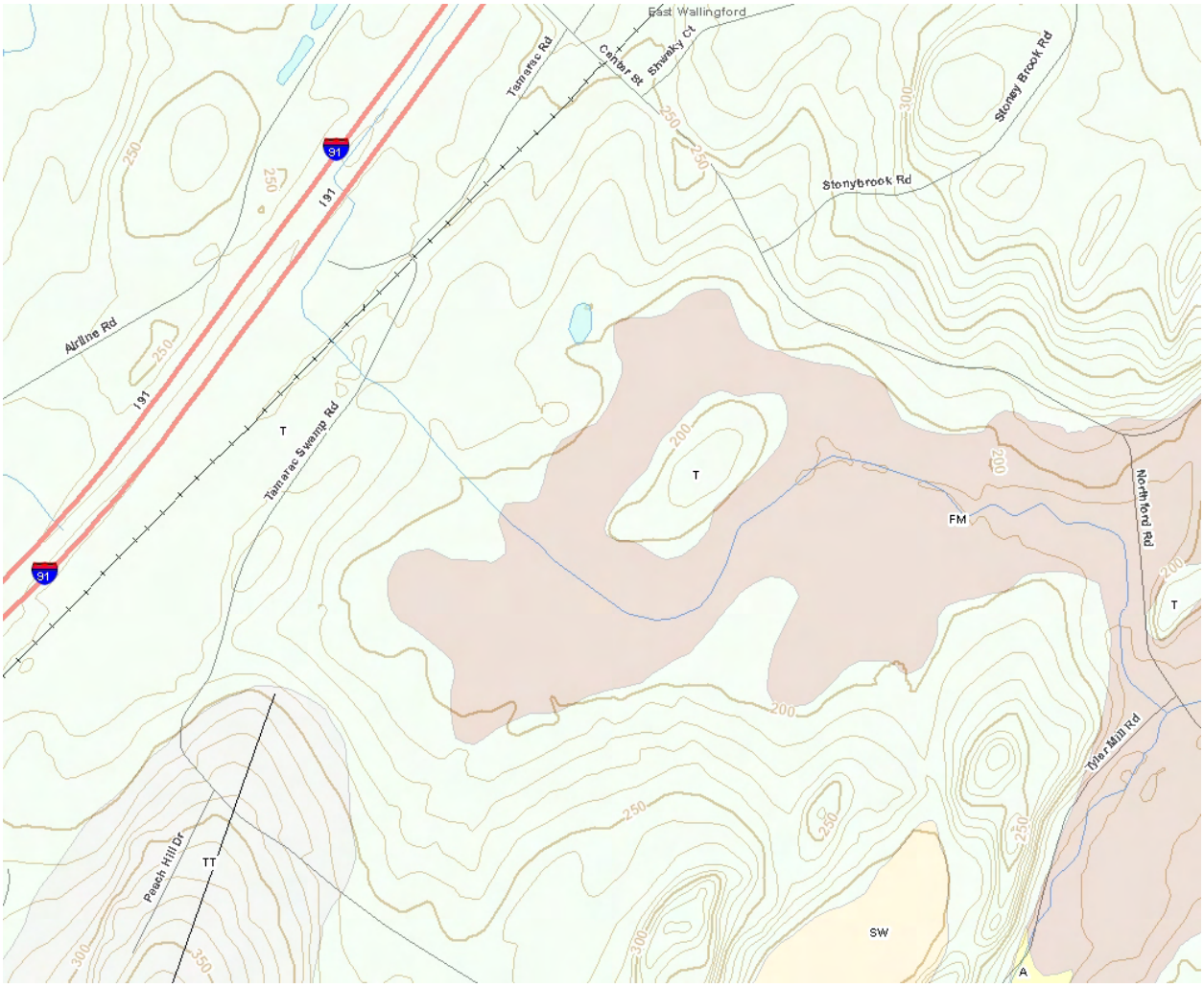


Figure 4. Map showing surficial deposits on the parcel (from Stone and others, 2005). Pale green area, labeled "T" is glacial till (melt-out till), very light gray area labeled "TT" is thick till (lodgment till), pale brown area labeled "FM" are deposits of short-lived shallow glacial-melt-water lake, and yellow area labeled "SW" underlain by modern swamp deposits.

As the glacial ice melted at the end of the Ice Age, short-lived ponds backed up behind sediment dams and were filled with sand, gravel and mud from the melt-water streams. One pond backed up into the area that would be the parcel and deposited silt and fine-grained sand. These layers are of low permeability and are poorly drained. They underlie the low areas on the parcel (FM on Figure 4).

The hill along the eastern border of the parcel has a slope slightly steeper that is characteristic for the area (see Figure 5). It is hypothesized that the steep slope owes its origin to melt-water stream erosion prior to or during the filling of the shallow short-lived pond.

Figure 5. Steeper slope on western side of hillside near eastern boundary of parcel. Increased steepness is interpreted as the result of meltwater stream erosion of the hillside prior to filling of glacial pond. They were probably steeper erosion scarps at one time but have since slumped to the slope we see today. The elevation of the hill is approximately 220', the same as the flat area that has been used for row-crops. Perhaps the two surfaces were connected prior to stream erosion.

References

Bell, Michael, 1985, *The Face of Connecticut.* State Geological and Natural History Survey, Bull. 110, 196p.

Rodgers, John, 1985, *Bedrock Geological Map of Connecticut*. State Geological and Natural History Survey of Connecticut, Nat'l. Resource Atlas Series, 1:125,000, 2 sheets.

Stone, J.R., Schafer, J.P., London, E.H., DiGiacomo-Cohen, M.L., Lewis, R.S., and Thompson, W.B., 2005, Quaternary Geologic Map of Connecticut and Long Island Sound Basin (1:125,000). U.S. Geol. Surv. Sci. Invest. Map # 2784.

Soils Resources

This soils report applies to the 97-acre open space parcel referred to as the Williams Farm, which is bounded by East Center Street to the North, Tamarack and Tamarack Swamp Roads along its western and southern boundaries and Veterans Memorial Park Road the east. The parcel is located within the Muddy River Watershed public water supply area. The information in this report is based on the historical soils series descriptions and the new digital mapping unit descriptions as presented in the Soil Survey of Connecticut, remote survey interpretations plus field observations. The report addresses issues on land use and agricultural leasing as it relates to the soils, their physical attributes and their ability to affect water quality.

The following soils map and information (CT Soils Mapping) are derived from the new digital survey (Soil Survey of Connecticut). The soil survey utilizes recent aerial photographic base with one soil legend, which employs the numbering convention used by the USDA.

Mapping Units

Wetland Soils

1) USDA Soil #5 - Ws - Wilbraham very stony silt loam
The Ws map unit consists primarily of nearly level Wilbraham soils. They are very deep, poorly drained soils that formed in compact glacial till, derived mainly from red Triassic rocks and some basalt. Typically, they have a friable silt loam or loam surface layer and subsoil over a silt loam, loam or fine sandy loam dense till substratum. Wilbraham soils have a perched watertable within 1.5 feet of the surface much of the year. Wilbraham soils have a high watertable at a depth of about 6 inches from late fall until mid-spring and a slowly permeable substratum.

Observation
This soil type is located along the northern boundary where surface water runoff is subject to various uses related to the agricultural operation and stormwater discharges from roadways. The topography concentrates and conveys surface and ground water flows into a shallow vegetated swale in the direction of a .01-acre pond to the southeast. Nutrient loads from agricultural waste and compost storage facilities have impacted water quality and storage capacity within the pond, which has resulted in the cover of aquatic vegetative matter on the pond surface.

Recommendations
Composting – Upslope storage of agricultural waste, bedding and plant materials would benefit by temporary tarping to reduce exposure to the elements and limit leachates originating from the existing storage area. The District and the USDA, NRCS has existing designs for covered storage and composting facilities that will enhance operations on site and reduce the transport of pathogens and sediments in the direction of the water body adjacent to the barn yard and feed lot.
Sedimentation – The pond has lost some of its storage capacity due to the transport of sediments from disturbances upslope. The pond should remain fenced off from direct access by cattle along its perimeter, but the watercourse upslope is subject to some disturbance from cattle and equipment. The placement of an in-stream forebay to sequester solids entrained in runoff will

limit additional sediment loads to the pond and slow the loss of capacity. This type of drop-out will allow for periodic removal of deposited materials.

2) Map Unit Ra – Raynham – USDA Soil # 10
The Ra map unit is composed of Raynham soils on 0 to 3 percent slopes. These soils are very deep and poorly drained. They formed in silty lacustrine deposits. Raynham soils are composed of stratified silt loam materials to a depth of 60 inches or more. These soils have a seasonal high watertable within 20 inches of the soil surface during the months of November through May.

Observation
This map unit constitutes 36% of the parcel in question and serves a vital role in polishing surface and ground water flows within this public water-supply area. These soils were modified a short time ago, but the hydrologic regime of this sector was not adversely impacted and has recovered quite well. The primary agricultural use throughout this area is for grazing of cattle and casual watering along the length of the seasonal watercourse before its terminus into the extensive off site wetlands complex to the east. The number of cattle utilizing this area is relatively low. Their direct access to the seasonal water course has had little impact to water quality and the plant uptake by vegetative cover of the agricultural waste introduced to the pasture seems to be in balance with the number of cattle on site.

Recommendation
Grazing - This grazing area is functioning well and is able to maintain its vegetative cover. This contiguous wetland continues to function well in renovating raw water quality of the Muddy River watershed and its current use should be maintained.

Consideration should be given to managing invasive shrub and ground cover species. Contact the USDA, NRCS for guidelines and best management practices to control these potential nuisances.

Non-wetland Soils

3) USDA Soil #55B - WcB – Watchaug fine sandy loam, 3 to 8 percent slopes.
Watchaug soils are very deep and moderately well drained soils formed in glacial till, derived mainly from red Triassic rocks. There are approximately 13-acres in total of this soils type; they are located in the northeast portion of the site and at the extreme southern portion of the parcel along Tamarack Swamp Road.

These soils have a seasonally high watertable at 1.5 to 2.5 feet in the late fall to early spring. Typically, they have a fine sandy loam, loam or silt loam surface layer and subsoil, over a friable fine sandy loam, sandy loam or loam substratum that extends to a depth of 60 inches or more. Watchaug soils have low chroma mottles within a 24-inch depth.

Observations
This soil type has seen many iterations of crops and foraging uses where the productively is predicated on the crop type and their ability to withstand periods of high available water capacity. The fertility and organic matter has been diminished due to uses and the modification

of its surface water flow patterns and hyrdolgic regime. Soil compaction and the development of dense subsoil layers should be addressed over time to maintain the viability and productivity of these soil types. The chemical and physical attributes need to be assessed and evaluated to properly address and attain adequate long-term soil health.

A large portion of this area was planted with a cover crop of Foxtail Grass. Alternate crops that enhance the soil health should be considered to penetrate the compacted subsoil layer and restore natural amendments for increasing its organic matter.

4) USDA Soil #63B - Map Unit CsB – Cheshire fine sandy loam, 3 to 8 percent slopes.
The Cheshire soils are very deep, well-drained soils formed in glacial till, derived mainly from red Triassic rocks. Typically, they have a fine sandy loam, loam, or silt loam surface layer and sub soil over a friable sandy loam, fine sandy loam or loam substratum that extends to a depth of 60 inches or more. This soil has moderate permeability. Runoff is medium. This soil unit comprises approximately 14% of the parcel and is located on the western border paralleling Tamarack Swamp Road.

Observations
This soil type has primarily been used for forage crops. The fertility and organic matter should be assessed to enhance soil health. Soil compaction and the development of dense subsoil layers should be evaluated. These soils are moderate to strongly acid in chemical make-up and amendments may be necessary.

5) USDA Soil #69C - YaC – Yalesville fine sandy loam, 8 to 15 percent slopes.
Yalesville soils are moderately deep, well drained and formed in loose till, derived from red Triassic materials. This soil occupies approximately 12% of total site and is located on the southwestern portion of the site. They have fine sandy loam textures overlying sandstone bedrock. The bedrock occurs within a depth range of 20 to 40 inches.

This soil has moderate or moderately rapid permeability above the bedrock. Runoff is medium. The hazard of erosion is moderate and controlling runoff and erosion is a concern in managing this soil for farming. This soil is limited by its increasing slope and depth to bedrock.

Observations
This soil type is considered highly erodible land due to its composition and increased slope angle. Its current use and hay crop are appropriate for these types of soils with these particular attributes.

6) USDA Soil # 87C - Map Unit WkC – Wethersfield very stony loam, 8 to 15 percent slopes.
This sloping, well-drained soil is on the side slopes of drumlins, ridges and hills on glacial uplands. They formed in compact glacial till, derived mainly from red Triassic rocks. Typically they have a friable loam or silt loam surface layer and subsoil over firm loam, silt loam, or fine sandy loam, dense basal till substratum. Permeability is moderate in the surface layer and subsoil and slow or very slow in the substratum. Runoff is rapid. The hazard of erosion is severe.

Observation
This soil type is located on the southern portion of the parcel and is approx. 11-acres in size. The current hay crop usage is very appropriate for this soil type and its associated limitations. It is very limited by the steepness of slopes, the slowly permeable substratum and stoniness. Cultivated crops should not be entertained for this portion of this site.

Recommendations
The majority of these comments and recommendations pertain to Items #3 through #6.

Soil Health – Soil composition (organic and chemical), compaction from use and their physical attributes should be assessed and evaluated to optimize their productivity and assure sound stewardship of the land. The Natural Resources Conservation Service will be instrumental in evaluating the land and providing guidance in the assessment of these resources.

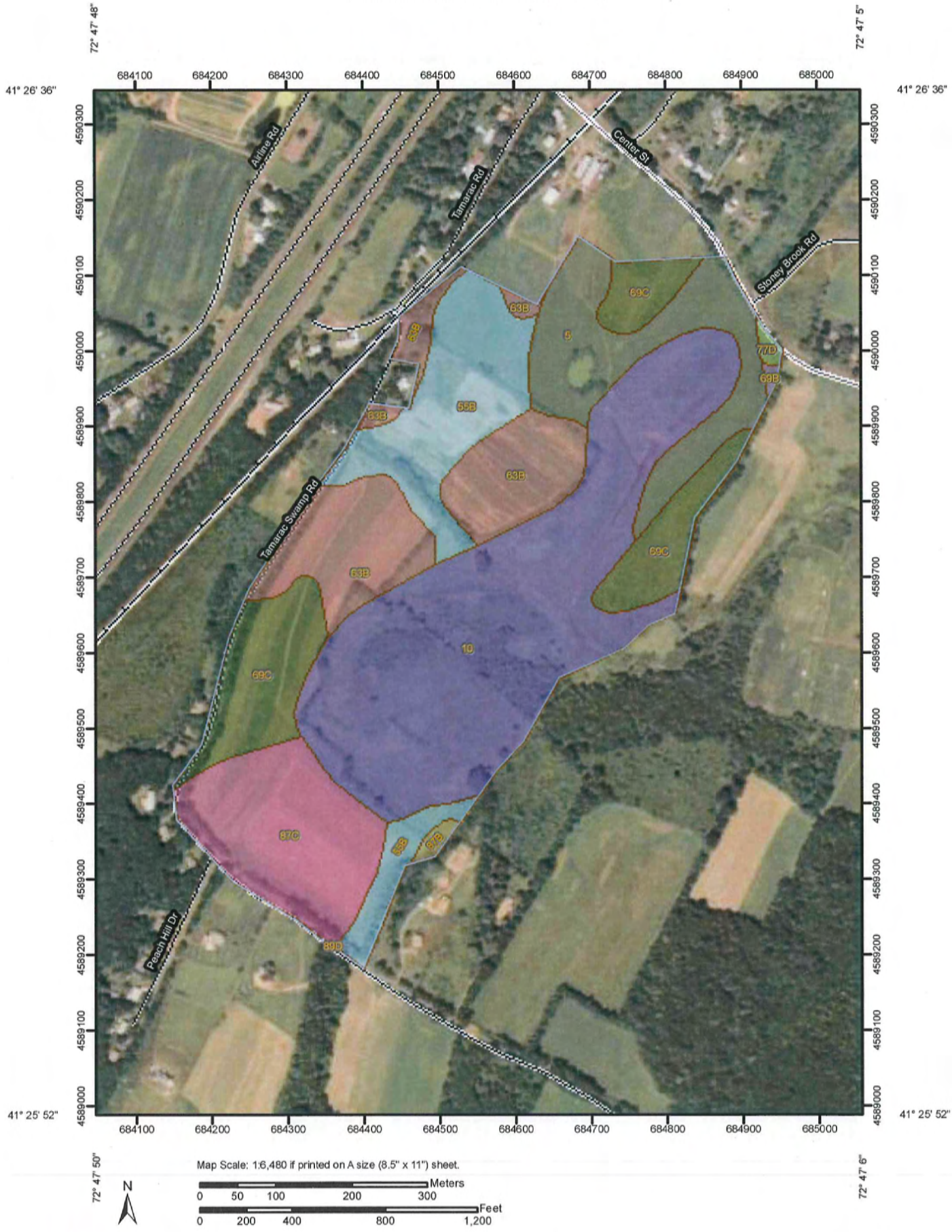
Soil Testing – to establish existing nutrient amendments and pH.

Alternate Crops – Select appropriate cover crops or crops that can naturally fix nitrogen, such as legumes or deep penetrating root systems that break up dense basal subsoil layers, enhance organic content and facilitate percolation and infiltration. See practice specifications on forage and biomass plantings provided.

Land Management – Promote and assure the continued sound stewardship of the land through adequate lease agreements, habitat enhancement and controlled public access that prioritizes the conservation, preservation and protection of the natural resources on site. Require leases to develop and implement adequate conservation plans for the proposed agricultural use.

Raw Water Quality – Pretreat surface water runoff and reduce non-point source pollutants associated with agricultural, residential land uses and roadway systems within the Muddy Rivers, public water-supply watershed. IE; Roof runoff management, reduce exposure of soils with cover crops, nutrient load reduction through the utilization of soil testing of existing and needed amendments to optimize soil / crop health plus productivity.

Map Unit Name—State of Connecticut
(995C East Center Street, Wallingford, CT)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Soil Ratings
- Cheshire fine sandy loam, 3 to 8 percent slopes
- Cheshire-Holyoke complex, 15 to 35 percent slopes, very rocky
- Raynham silt loam
- Watchaug fine sandy loam, 3 to 8 percent slopes
- Wethersfield loam, 15 to 35 percent slopes, extremely stony
- Wethersfield loam, 3 to 8 percent slopes
- Wethersfield loam, 8 to 15 percent slopes
- Wilbraham silt loam
- Yalesville fine sandy loam, 3 to 8 percent slopes
- Yalesville fine sandy loam, 8 to 15 percent slopes
- Not rated or not available

Political Features
- Cities

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:6,480 if printed on A size (8.5" × 11") sheet.

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 18N NAD83

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 10, Mar 31, 2011

Date(s) aerial images were photographed: 8/13/2006

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 Name

Map Unit Name— Summary by Map Unit — State of Connecticut (CT600)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
5	Wilbraham silt loam	Wilbraham silt loam	10.9	11.2%
10	Raynham silt loam	Raynham silt loam	34.9	36.0%
55B	Watchaug fine sandy loam, 3 to 8 percent slopes	Watchaug fine sandy loam, 3 to 8 percent slopes	12.8	13.2%
63B	Cheshire fine sandy loam, 3 to 8 percent slopes	Cheshire fine sandy loam, 3 to 8 percent slopes	14.0	14.4%
69B	Yalesville fine sandy loam, 3 to 8 percent slopes	Yalesville fine sandy loam, 3 to 8 percent slopes	0.2	0.2%
69C	Yalesville fine sandy loam, 8 to 15 percent slopes	Yalesville fine sandy loam, 8 to 15 percent slopes	12.3	12.7%
77D	Cheshire-Holyoke complex, 15 to 35 percent slopes, very rocky	Cheshire-Holyoke complex, 15 to 35 percent slopes, very rocky	0.3	0.3%
87B	Wethersfield loam, 3 to 8 percent slopes	Wethersfield loam, 3 to 8 percent slopes	0.4	0.4%
87C	Wethersfield loam, 8 to 15 percent slopes	Wethersfield loam, 8 to 15 percent slopes	11.2	11.6%
89D	Wethersfield loam, 15 to 35 percent slopes, extremely stony	Wethersfield loam, 15 to 35 percent slopes, extremely stony	0.0	0.0%
Totals for Area of Interest			**97.1**	**100.0%**

Description

A soil map unit is a collection of soil areas or nonsoil areas (miscellaneous areas) delineated in a soil survey. Each map unit is given a name that uniquely identifies the unit in a particular soil survey area.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Agricultural Soil Resources

Soils on the property include glacial till upland and glacial till and lacustrine wetland soils.

Upland soils:
The moderately deep (<40”) to bedrock Yalesville soils (69 B and C) occupy portions of the hayland and pasture nearest to the barnyard. The well drained Cheshire (63B) and moderately well drained Watchaug (55B) occupy parts of the hayland as well as the vegetable plot. Wethersfield soils (87 B and C), a well drained glacial till with a hardpan within a few feet of the surface, are mapped in the southern most section of the hayland.

Wetland soils:
Approximately 45% of the soils on the property are the poorly drained Wilbraham and Raynham soils. Most of these areas are wetlands. Raynham soils are formed in stratified glaciolacustrine (lake bed) deposits and have silt loam textures. The lowest elevations in this unit, along the main drainage and wettest areas along the east of the property, have a higher percentage of clay in the substratum. Wilbraham soils are glacial tills and the map unit on the property includes the drainage swale traveling from the barnyard area to the pond, then wrapping along the edge of the bedrock controlled till (Yalesville) including a transition area between the upland and wetland soils. The NRCS National Cooperative Soil Survey of Connecticut is mapped at a 1:12,000 (1” + 1,000’) scale. A detailed wetland delineation would refine these boundaries and likely reduce the wetland area a little along the drainage and edges.

Farmland Classification:

The soils on the property are designated either prime farmland soils or additional farmland soils of statewide importance. This designation refers to the soil’s potential, not the current land use. On this property, the additional farmland soils of statewide importance are limited by steep slopes, moderate depth to bedrock, and wetness.

Prime farmland soils have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and are also available for these uses. The land could be cropland, pastureland, rangeland, forestland, or other land, but not urban built-up land or water. Prime farmland has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed according to modern farming methods.

Additional farmland soils of statewide importance is land, in addition to prime and unique farmlands, that is of statewide importance for the production of food, feed, fiber, forage, and oil seed crops. Criteria for this designation are to be determined by the appropriate state agency or agencies. Generally, additional farmlands of statewide importance include those that are nearly prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some may produce as high a yield as prime farmlands if conditions are favorable. In some states, additional farmlands of statewide importance may include tracts of land that have been designated for agriculture by state laws.

A conservation plan from the USDA Natural Resources Conservation Service may be requested by the lessee of the property. Concerns covered by the plan may include:

Wetlands and watercourses: Most of the wetlands on the property are used by livestock as pasture. If properly managed, some of these areas can provide suitable forage. The livestock activity is also helping to suppress the spread of invasive species in the wetland. A grazing management plan provides guidance in the timing, animal numbers, and extent of grazing to provide the best forage quality while minimizing damage to the area. Excluding animals from surface water where practical and installing watering facilities are 2 potential practices on the pastures. The goals of forage production, invasive species management, and watershed protection will have to be prioritized and balanced in the creation of a conservation plan.

Vegetable production: Soils on the vegetable plot are suitable. They are well and moderately well drained, very deep soils on moderate slopes. The cover crop requirements on the lease agreement are appropriate.

Hayland: Many of the upland areas have slopes that make them vulnerable to erosion. In addition, soils that are moderately deep to bedrock (Yalesville) have a lower soil loss tolerance. All of these areas are currently in hayland and not subject to soil disturbance.

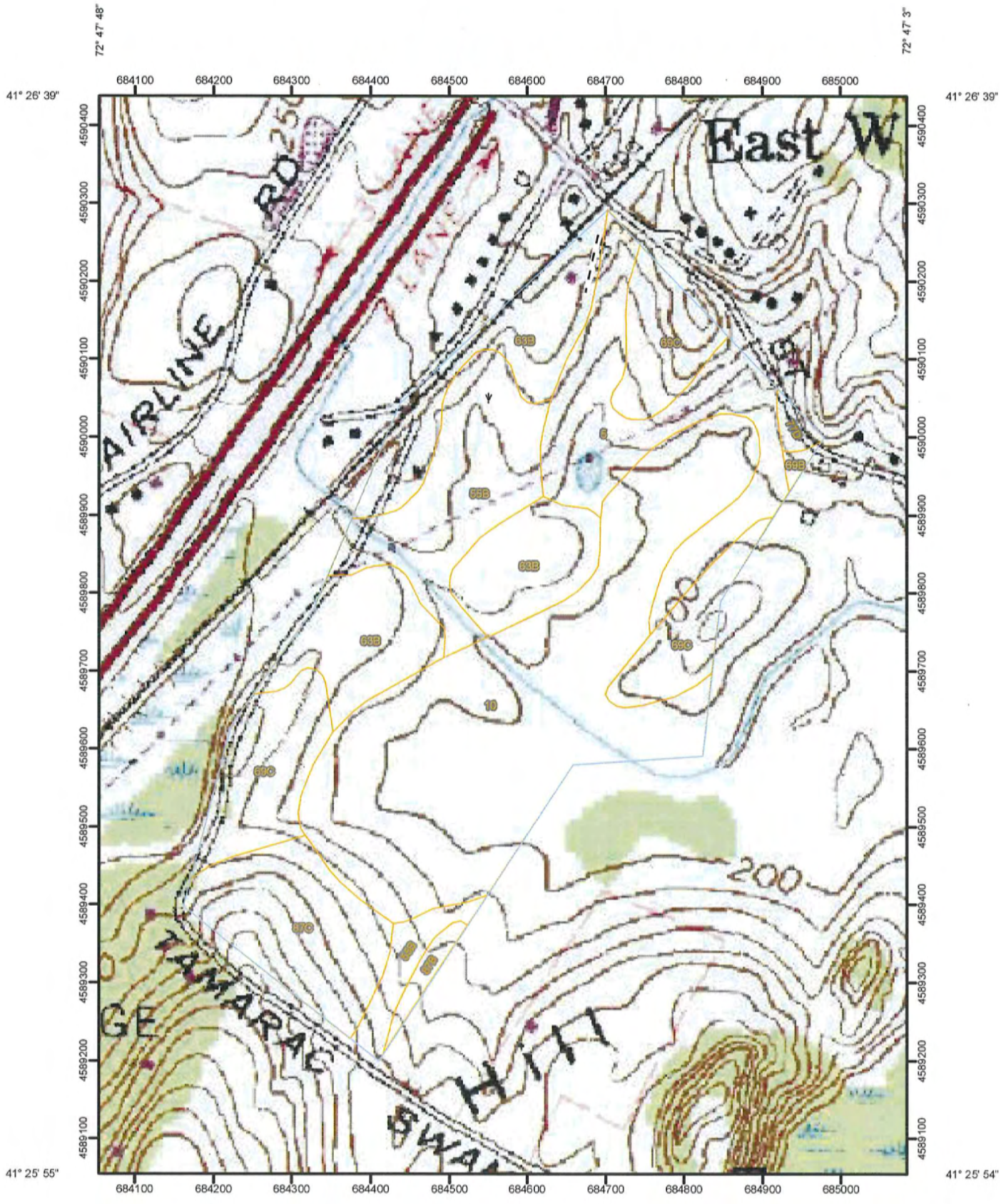
Barnyard: A conservation plan could also address manure storage and handling options for the barnyard area.

An additional concern is the milkweed (*Asclepias syriaca*) that is taking over areas of the hayland and reducing the quality of the forage produced. Possible control measures include either performing a minimum of 3 cuttings a year or applying roundup (glyphosate) with a weed wiper (or wick applicator). The hayland is currently managed for bobolink habitat, which requires delayed mowing, and pesticide use is not allowed on the property. An alternative control is hand pulling several times a year to ultimately weaken the plant. One possibility would be organizing a volunteer activity for a group like scouts or 4H, which would include education about wildlife habitat and organic agriculture in addition to the milkweed pulling task.

Please see the following soil maps on aerial photo and topographic map base.


72° 47' 48"
72° 47' 3"
41° 26' 39"
41° 25' 55"
41° 25' 54"
72° 47' 49"
72° 47' 5"
684100
684200
684300
684400
684500
684600
684700
684800
684900
685000
4590400
4590300
4590200
4590100
4590000
4589900
4589800
4589700
4589600
4589500
4589400
4589300
4589200
4589100
63B
69C
5
71D
69B
55B
10
67C
55B
67B
Map Scale: 1:6,600 if printed on A size (8.5" x 11") sheet.
N
Meters
0 50 100 200 300
Feet
0 250 500 1,000 1,500

Soil Map—State of Connecticut



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

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
- Gully
- Short Steep Slope
- Other

MAP INFORMATION

Map Scale: 1:6,600 if printed on A size (8.5" × 11") sheet.

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 18N NAD83

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 10, Mar 31, 2011

Date(s) aerial images were photographed: 8/13/2006

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**
5	Wilbraham silt loam	12.4	11.7%
10	Raynham silt loam	35.8	33.7%
55B	Watchaug fine sandy loam, 3 to 8 percent slopes	12.8	12.1%
63B	Cheshire fine sandy loam, 3 to 8 percent slopes	19.3	18.2%
69B	Yalesville fine sandy loam, 3 to 8 percent slopes	0.3	0.3%
69C	Yalesville fine sandy loam, 8 to 15 percent slopes	14.7	13.9%
77D	Cheshire-Holyoke complex, 15 to 35 percent slopes, very rocky	0.6	0.6%
87B	Wethersfield loam, 3 to 8 percent slopes	0.9	0.9%
87C	Wethersfield loam, 8 to 15 percent slopes	9.2	8.7%
Totals for Area of Interest		**106.1**	**100.0%**

Comments on Invasive Plants

The property is managed primarily for agricultural purposes (hay and cow pasture). Common invaders of minimally managed habitats were observed, for example, Multiflora rose (*Rosa multiflora*) and Winged euonymus (*Euonymus alatus*), and others. These species (and other woody plants, invasive or not) are being held in check by the grazing and mowing. These species would grow quickly from well-established root systems should the mowing and grazing stop.

General Information on Invasive Plant Control

1. Early Detection and Rapid Response
   -- this is suited to species which currently are few in number on the site and are likely to spread rapidly and be very difficult to control later.
2. Undertake control when you have something planned to fill the space (do not control invasive plants and leave an empty space).
3. No matter what type of control you do, recognize that follow-up will be needed in subsequent years.
4. Where equipment is driven through fields, its undercarriage and wheel wells should be cleaned before being brought onto the property and cleaned again before leaving the property.

Collections of fact sheets that include many species invasive in Connecticut

http://www.dcnr.state.pa.us/forestry/invasivetutorial/List.htm
http://www.nps.gov/plants/alien/factmain.htm
http://www.nashuarpc.org/LMRLAC/documents/invasiveplants.pdf
http://www.vtinvasives.org/invaders/imagesall

Notable Invasive Species Observed on the Site

Tree-of-heaven (Ailanthus altissima) was seen on the ridgetop property boundary at the northeast end of the tract. As of now this is not creating a problem. However, it has the potential to spread by seeds (from trees with female flowers) and by root sprouts, particularly if the main trunk is injured. Tree-of-heaven should never be cut down unless there is planned follow-up control of root suckers. Care should be taken to not get exposed to the sap as it has been reported to cause mycarditis (a dangerous inflammation of the heart muscle).

Purple loosestrife (*Lythrum salicaria*) was seen in the CL&P easement near the northeastern boundary. This has the potential to spread throughout the wet soil. In some situations it is possible to control this species by pulling. Pulling is recommended for young plants that are not well-rooted in stands of no more than 100 (or however many plants there is the enthusiasm and people power for the required careful pulling). Generally plants over 2-3 years old will be too well established to pull. Pulled plants should

be bagged and care should be taken to not leave root fragments behind. Note that digging is not recommended because it leaves disturbed soil and too many root fragments.

Some people recommend control with herbicides. Note that if herbicides are used in aquatic situations ("where your feet are wet"), a permit from the Connecticut Department of Energy and Environmental Protection is needed. Contact Bradford.Robinson@ct.gov or call (860) 424-3369 for more information.

An alternative to attempted eradication is biological control with *Galerucella* beetles. While these beetles do not eliminate the Purple loosestrife, they keep the population in check. The University of Connecticut Integrated Pest Management Program website (currently undergoing reconstruction) has information on "Beetle Farmers" including a powerpoint slide show and a video. Visit
http://www.hort.uconn.edu/ipm/ or contact Donna.Ellis@uconn.edu or call (860) 486-6448 for more information.

Canada Thistle (*Cirsium arvense*) was noted in the uplands of the northeastern pasture. This is an unusual thistle that grows in clumps with multiple plants connected underground. It currently (October 2012) is considered potentially invasive in minimally managed lands in Connecticut; however, in western states, it is a well-known and widespread weed of cropland, pasture, rangeland, and non-cropland. Because it is difficult to control, an early detection-rapid response approach is recommended. Note that the recommendations included in the identification and control information sources below tend to be for farmers with large infestations. Many of the chemicals recommended require a licensed applicator. For a few isolated plants, monthly hand-cutting is worth trying. This may take more than one year to kill the plant. In addition, seeds live a long time in the soil, so regardless of control method used, follow-up monitoring is a must.
Identification and Control Information:
http://www.ag.ndsu.nodak.edu/invasiveweeds/canda%20thistle.htm
http://www.ext.colostate.edu/pubs/natres/03108.html
http://www.gardeningknowhow.com/plant-problems/weeds/canada-thistle-control.htm/print/

Jimson weed (*Datura stramonium*) was seen along the roadside between Tamarac Swamp Road and the farm pond. Despite its shrub-like appearance, this plant is an annual. It is considered toxic to all classes of livestock. In small infestations, seedlings may be weeded by hand or with a hoe. Care should be taken to avoid spreading its seeds to areas that are hayed.

Bedstraw (*Galium* sp.) is a problem in the hayfield. The species was not determined. (None are included on the Connecticut list of Invasive and Potentially Invasive Plants because Bedstraws typically cause problems in agricultural landscapes rather than minimally managed natural

habitats.) Bedstraws are agricultural weeds that will reduce the quality and quantity of the hay crop. Additional advice on species identification and suitable site management should be sought.

Wildlife Resources

Background

The 995 East Center Street property is approximately 93 acres of town open space that is currently enrolled in the town's Farmland Lease Program, and is being utilized for hay and cow pasture. It is located near Interstate 91 in an area that transitions from the highly developed western part of town to the less developed eastern part of town, which contains significantly more open space. The property is bowl-shaped, and consists of multiple fields and various wetlands, including a wooded swamp, wet meadow, watercourses and a farm pond, as well as a 275' utility right-of-way. The highest elevations occur in the southwest portion of the parcel. In June 2006, the site was included in a draft feasibility report to the Wallingford Conservation Commission regarding grassland bird habitat enhancement and restoration. The town requested the ERT in order to provide information and assistance in developing a comprehensive land management plan.

Existing Wildlife Habitat

Agricultural Fields

A large L-shaped field is located in the high-elevation western and southern portion of the property, following the bend in Tamarac Swamp Road. This field is approximately 23 acres and is currently planted to hay, with a mowing regime requiring (per terms of the lease) hay harvest to occur from field edges first, progressing inward later in the season, in order to promote grassland bird nesting. Bobolinks have been observed nesting in this field by the Wallingford Conservation Commission, reportedly arriving in May and nesting in the field slopes. According to information provided at the ERT, mowing in this field is currently done at the end of July; with the western portion mowed first, followed by the high meadow (bobolink nesting area). There is also a small field (approximately 6 acres) along the entrance driveway planted to corn and pumpkins, with autumn olive, goldenrod and foxtail grass present. This field was last mowed in 2010.

Early successional habitats including fields, shrublands, grasslands, and meadows are rapidly declining in Connecticut. This decline is due to development and natural succession, where

farmland abandoned years ago has grown up into forestland. Interruptions of natural processes that create early successional habitats across the landscape, such as fire and flooding have also contributed to this decline. All of these factors have combined to result in declines for many early successional species, including eastern box turtle, milk snake, and bronze copper.

The habitat value of the existing hayfield is likely maximized given the current management regime required by the Farmland Lease Program. The limitations placed on field management by the lease are those recommended to maximize benefits to wildlife, while still allowing usable harvest. Should the property come out of the Farmland Lease Program and be managed solely to benefit wildlife, there are several management activities that could increase the habitat value of the existing fields. Because agricultural fields do provide valuable habitat to wildlife, one option is to keep the field in hay. Altering the management regime by mowing only a portion (on a rotating schedule) of the field, at the end of each winter, would improve the value to wildlife by retaining winter cover. Given the size of the field, a second option would be to convert it to a small (10-75 acre) native warm-season grassland. While agricultural grasses such as hay are beneficial for wildlife and provide valuable habitat, native warm-season grasses, such as switchgrass, indiangrass, big bluestem, and little bluestem have certain ecological advantages. They grow best in summer heat, and produce high-quality, dependable forage. They are less influenced by severe weather fluctuations, are more disease and insect resistant, and provide excellent nesting and rearing habitat. In the fall, warm-season grasslands provide food for migrating for sparrows, larks and warblers. Additionally, there are increasing concerns over declining grassland-specialist bird species, including, but not limited to bobolinks (reported nesting on site) and meadowlarks, both of whom for which this field is an appropriate size and can provide critical summer habitat for nesting.

The Maguire Group's draft feasibility report noted grassland generalist species on site including red-tailed hawk, turkey vulture, killdeer, spotted sandpiper, mourning dove, eastern kingbird, tree swallow, barn swallow, yellow warbler, common yellowthroat, red-winged blackbird, common grackle, Baltimore oriole, American goldfinch, indigo bunting, and brown-headed cowbird. Grasslands are also utilized by mammals such as meadow voles, meadow jumping mice, bats, and fox, as well as reptiles and amphibians including green snakes and box turtles. Please see the guide *Managing Grasslands, Shrublands, and Young Forest Habitats for Wildlife: A Guide for the Northeast*, available on the DEEP's website, for more information on establishing and managing warm season grasslands.

Alternatively, the existing fields could be converted to meadow habitat with a diverse plant community, including grasses, weeds and flowers such as purple coneflower, black-eyed susan, New England aster, and common milkweed (already present in the hayfield) which would be beneficial to a wide variety of species including Eastern bluebird, blue-winged warbler and smooth green snake. In order to keep saplings and small trees from encroaching, brush hogging or mowing should be implemented every couple of years. Again, mowing should be conducted after August and before April to allow any nesting species to complete their reproductive cycle, and alternating portions of the fields should be left un-mowed each winter, leaving some cover for the winter season. Additionally, the field can be made larger by removing the hedgerow, making it more attractive to a wider variety of species.

Pasture

Most of the northern and eastern portions of the property are used for pasture. Moderate amounts of grazing can benefit wildlife habitat by keeping grasses at varying heights and reducing ground litter. In order to maximize benefits to wildlife, grazing should be kept to moderate levels and a rotational grazing regime should be utilized, which can create a diversity of plant species and structure.

Wetlands

About half of the property contains wetlands, all of which occur in pasture areas. There is a farm pond in the northernmost pasture area, as well as a watercourse in the northeastern portion of the property, and a wet meadow in the central and eastern portion of the property, just south of the unnamed stream that runs east-west across the property. The wet area south of the stream is dominated by multiflora rose.

Many species use wetland habitat in conjunction with adjacent upland for breeding, feeding and shelter. Species that may be found utilizing wetland habitat on this property include northern water snakes, woodcock, spring peepers and grey tree frogs, all of which have been observed on the site, as reported by the Conservation Commissioner, via email. Bird species noted on site by the Maguire Group that may utilize wetland habitat include willow flycatcher and warbling vireo. As stated in the Maguire Group's Draft Feasibility Report, the wet meadow is said, by Wallingford Conservation Commission members, to be an important staging area for Wilson's snipe during annual migration.

The riparian habitat, or riparian zone, is the area of trees, shrubs and herbaceous plants that follow the edge of streams, rivers, lakes and ponds. It can provide habitat for many aquatic-based species including frogs, salamanders, beaver, and muskrats. Generally, the greater the vegetative diversity along the edges of watercourses, the greater the value for wildlife. Streams may also provide important travel corridors for mammals, connecting one habitat to another. Keeping livestock from grazing in the riparian zone and treating invasive species would allow a more diverse array of native species to grow up, enhancing the value of the habitat for wildlife. Invasive species, particularly multiflora rose, are also prevalent in some of the wet areas, and this lack of plant diversity results in lower quality forage and diminishes the value for wildlife. The invasive vegetation does, however, provide important cover and structure, therefore, if treated

and removed, it is recommended that native shrubs be planted, rather than leaving the area devoid of vegetation for a length of time. Shrubs that could be planted include silky and red-stemmed dogwood, highbush blueberry, cranberry and spicebush.

Education, Nest Boxes, and Trails

The town may wish to include an educational component to their management of the property. Interpretive signs can be placed at appropriate locations around the property and bluebird nest boxes with educational signs can be installed around the field areas. Boxes should be properly designed, maintained, and should include predator guards on mounting posts to prevent predation by raccoons, snakes or domestic cats. Boxes should be inspected regularly.

If recreational trails are to be made part of the property, care must be taken in order to prevent disturbance to wildlife. Please see Attachment A regarding recommended guidelines for trail establishment. Trails should not bisect fields, as this would provide predators with additional easy access to more portions of the field. Because small mammals and ground nesting birds are easily disturbed and sometimes killed by domestic dogs, it is advisable to require that dogs are kept leashed at all times. At a minimum, dogs should be leashed during the entire nesting season.

Summary

The 995 East Center Street property provides valuable resources for a variety of wildlife, due to both its location within the larger landscape and its current management regime. The property is located in a part of town that transitions from highly developed to the west, to less developed to the east, and is nearby to other properties owned by the town containing similar fields, wetlands, and upland habitats, providing good connectivity of habitat. The current management regime maximizes the value to wildlife given that a crop is still being produced; with opportunities to improve the mosaic of habitats should farming be discontinued on the parcel. The property also

offers the potential for outreach and education regarding wildlife, through the use of properly developed trails and use of interpretive signs.

References

Managing Grasslands, Shrublands, and Young Forest Habitats for Wildlife: A Guide for the Northeast. The Northeast Upland Habitat Technical Committee and the Massachusetts Division of Fisheries & Wildlife. 2006.

Draft Feasibility Report: Grassland bird Habitat Enhancement/Restoration Initiative. Maguire Group, Inc. New Britain, CT. June, 2006.

The Natural Diversity Data Base

The Natural Diversity Data Base maps and files have been reviewed for the project area. According to their records for this site indicate the following extant populations of species on or within the vicinity of the site:

Bobolinks (*Dolichonyx oryzivorus*) Protection Status: Species of Special Concern

Bobolinks require open grassy areas to forage, breed and nest. Unlike other grassland birds that require large tracts of grassland habitat, the bobolink can successfully breed in grasslands as small as five acres. Bobolinks are most susceptible to human disturbance during the breeding season (May through August).

Recommendation: Minimizing impacts to open fields, meadows and other grassy areas from May through August will likewise minimize negative impacts to this species. If bobolinks are found to be nesting on the project site, work should be halted until after the breeding season.

The Natural Diversity Data Base includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available. If the project is not implemented within 12 months, then another Natural Diversity Data Base review should be requested for up-to-date information.

Please be advised a more detailed review may be conducted as part of any subsequent environmental permit applications submitted to the Department of Energy and Environmental Protection for the proposed site. Should state involvement occur in some other manner, specific restrictions or conditions relating to the species discussed above may apply.

Thank you for consulting the Natural Diversity Data Base. If you have further questions, I can be reached by email at Elaine.hinsch@ct.gov or by phone at (860) 424-3011.

Aquatic Resources

The parcel is 93+ acres that are currently in agricultural use. The property is bounded by East Center Street on the north, Tamarac Swamp Road on the west and a 1,000- acre town owned Tyler Mill Preserve on the east. Currently the property is part of the Town of Wallingford's Farmland Lease Program and is being used for hay and cow pasture. The property contains hayfield, tillable cropland, wooded swamp, wet meadow, and an unnamed stream.

This stream has a small watershed that originates a short distance on the other side of I-91 and is subject to low flows during the summer. The fish community consists of a typical assortment of warm-water species, dominated by the sunfish and minnow families. While this fish community does not provide great opportunity for angling, it is an important contribution to the biodiversity of the parcel and contributes to its value and appeal to local residents. Furthermore, the stream flows into the Muddy River, a much larger stream with substantial aquatic resources. The DEEP Inland Fisheries Division stocks nearly 2,000 trout annually into Muddy River and it is a popular public resource. This small unnamed stream on town property should be properly managed to protect it and its ecological values as well as protecting those of Muddy River into which the stream flows.

The Fisheries Division review has indicated two significant perturbations along this stream that could be addressed with a proper management scheme by the Town: siltation and warming of water. A major concern is the free access to this stream by livestock. Traditionally, farmers have used pasture brooks to water

their livestock but this practice is counterproductive. Livestock trample riparian vegetation, create bare soil pathways to the stream, and collapse stream banks. Rain erodes unprotected soil and washes mud into the stream. The mud buries existing gravel beds (which are critical to supporting many fish species as well as the aquatic insects they eat) and the feet of the livestock greatly compress the stream substrate and make it unsuitable for any aquatic life. The formerly clear water turns muddy, affecting its suitability to support certain species. Furthermore, waste from the livestock is directly introduced to the water, creating spikes in coliform bacteria and creating massive blooms of algal due to the excess nitrogen and phosphorus. The turbid water also absorbs solar radiation more than clear water and a cool-water stream quickly becomes a warm water stream. All of this flows downstream, degrading not only the small stream itself but also the Muddy River.

Our management recommendation is two-fold:

1) **Eliminate all direct access to the stream by livestock**. Fencing is the usual approach and alternate provision of water (troughs, etc.). We will not speculate on the best way to do this but trust that the Town and the lessee can determine the best way to accomplish this. It would be good to consider projects to repair any severely eroded stream banks (Eagle Scout projects?) but experiences shows that even without restoration, the exclusion of livestock from the stream will show immediate and demonstrable benefits.

2) **Provide a riparian vegetation buffer**. Having trees and shrubs grow along the edges of the stream is extremely beneficial and accomplishes several things: (a) create another barrier to livestock in situations where the fencing is not robust, (b) provides critical shading to the water surface, thus effectively reducing the water temperature of the brook over time, (c) provide supplemental food resources to fish by supporting a vast community of caterpillars, flies, worms, etc., many of which fall into the water, (d) the root systems hold and stabilizes stream banks and make them more resilient against erosion during storm events, (e) the root systems act as significant nutrient absorbers—intercepting nitrogen and phosphorus washing off of agriculture and pasture lands before it reaches the stream—and eventually Long Island Sound, and (f) promotes wildlife diversity—not a prime focus of the Inland Fisheries Division but something that our Wildlife Division promotes and something that visitors to the land would appreciate. If the stream is fenced off in an effective way with enough room, there will likely be natural re-vegetation due to the fact that farmers can no longer plow and plant and livestock can no longer graze right down to the stream. However, often it is beneficial to have a re-planting project that acquires well-suited plants and plant them along the stream banks to accelerate the process and ensure that desirable species become established. The species can also be chosen for aesthetics and ecological function (e.g. berries for birds). Even if a planting program is not initiated for the entire stream length,

there may be critical areas of degradation where some directed planting could help stabilize the banks immediately.

The DEEP Inland Fisheries Division believes that these actions will go a long ways to protecting the aquatic resources of the property and actually promoting the restoration of such resources. Such actions taken in 2013 could result in the stream becoming progressively healthier by 2020 and thereafter, making this a good investment for the people of Wallingford.

Archaeological and Cultural Resources

The Office of State Archaeology (OSA) had the opportunity to review the Upper, Middle and Lower portions of the 995 East Center Street project for its archaeological and historic sensitivity. A review of the Office of State Archaeology's Site Files and Maps shows one known pre-Contact Native American archaeological site within the boundaries of the project area. This site is associated with Native American settlement relatively dating to from 3,000 to 4,000 years ago. This archaeological site is located east of Tamarac Swamp Road adjacent to the wooded swamp area. Specific site locations are held confidential, but would be shared with the Town of Wallingford should a proposed project be undertaken in the future.

The OSA files also show that Connecticut Light & Power conducted a cultural resource survey through portions of the project area along their easement in 2007. While no additional sites were located during the Phase I survey, the OSA suggests that the open space property has a high sensitivity for undiscovered archaeological sites.

The Office of State Archaeology strongly recommends that any land use proposals for the Open Space area be reviewed by the OSA office for potential archaeological sites. The high sensitivity for cultural resources suggests that any earth moving activities may impact below-ground historic resources.

In this regard, the Office of State Archaeology would be pleased to work with the Wallingford Open Space Committee to promote an educational awareness of their cultural resources, and they are prepared to review any proposed land use projects in the project area.

About the Team

The King's Mark Environmental Review Team (ERT) is a group of environmental professionals drawn together from a variety of federal, state and regional agencies. Specialists on the Team include geologists, biologists, soil scientists, foresters, climatologists and landscape architects, recreational specialists, engineers and planners. The ERT operates with state funding under the aegis of the King's Mark Resource Conservation and Development (RC&D) Area - an 83 town area serving western Connecticut. (www.kingsmark.org)

As a public service activity, the Team is available to serve towns within the King's Mark RC&D Area - *free of charge.*

Purpose of the Environmental Review Team

The Environmental Review Team is available to assist towns in the review of sites proposed for major land use activities or natural resource inventories for critical areas. For example, the ERT has been involved in the review of a wide range of significant land use activities including subdivisions, sanitary landfills, commercial and industrial developments and recreation/open space projects.

Reviews are conducted in the interest of providing information and analysis that will assist towns and developers in environmentally sound decision making. This is done through identifying the natural resource base of the site and highlighting opportunities and limitations for the proposed land use.

Requesting an Environmental Review

Environmental reviews may be requested by the chief elected official of a municipality or the chairman of an administrative agency such as planning and zoning, conservation or inland wetlands. Environmental Review Request Forms are available at your local Conservation District and through the CTERT Coordinator. This request form must include a summary of the proposed project, a location map of the project site, written permission from the landowner / developer allowing the Team to enter the property for the purposes of a review and a statement identifying the specific areas of concern the Team members should investigate. When this request is reviewed by the local Conservation District and approved by the CTERT Subcommitteel, the Team will undertake the review. At present, the ERT can undertake approximately two reviews per month depending on scheduling and Team member availability.

For additional information regarding the Environmental Review Team, please contact the CT ERT Coordinator, Connecticut Environmental Review Team, P.O. Box 70, Haddam, CT 06438. The telephone number is 860-345-3977, connecticutert@aol.com, www.cterg.org.