LaSalette Park

Bloomfield, Connecticut




Connecticut Environmental Review Team Report

Connecticut Resource Conservation and Development Area, Inc.

LaSalette Park

Bloomfield, Connecticut

Environmental Review Team Report

Prepared by the
CT Environmental Review Team

Of the
CT Resource Conservation & Development Area, Inc.

For the
Town of Bloomfield
Bloomfield, Connecticut

Report #1001

July 2015

CT Environmental Review Team
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www.ctert.org

ACKNOWLEDGEMENTS

This report is an outgrowth of a request from the Town of Bloomfield to the Connecticut Environmental Review Team for their consideration and approval. The request was approved and the measure reviewed by the Connecticut Environmental Review Team (ERT).

The Connecticut 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 Monday, December 1, 2014 and Wednesday, December 10, 2014.

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I would also like to thank Dale Bertoldi, Dick Hughes and Ron Manchester of Ironwood Community Partners and David Melesko, the Bloomfield Leisure Services Director, Jonathan Thiesse, of the Bloomfield Engineering Department and Vikki Reski of the Wintonbury Land Trust, for their cooperation and assistance during this environmental review.

Prior to the review days, each Team member received a summary of the proposed project with various maps. During the field review and after Team members received additional information. Some Team members made separate or additional field visits to the site. Following the reviews, 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 land trust. The results of this Team action are oriented toward the development of better environmental quality and the long term economics of land use.

The Connecticut RC&D Council hopes you will find this report of value and assistance in providing information for plans to develop and manage this town-owned property.

If you require additional information please contact:

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INTRODUCTION

The Town of Bloomfield has requested an environmental review and natural resource inventory for LaSalette Park to assist them in developing a farmstead restoration and farm feasibility plan. The town acquired the 140 acre property in 1992 using a state grant-in-aid for conservation, recreation and open space purposes. (See Appendix for a copy of the dedication agreement and relevant state statutes.)

The property includes the historic Oliver Filley house, which dates from 1834, several outbuildings in disrepair and acreage that has been farmed (Pinney Farm) for more than 200 years. The LaSalette Seminary College purchased the property in 1913 and used the property for farming and constructed other buildings for housing and teaching. The LaSalette's sold the property in 1987 and the town acquired 140 acres now known as LaSalette Park.

The project site consists of approximately 80 acres of south-facing farm fields that a local farmer has used for hay and field corn, a gravel road, the northeast quadrant has a steep sided slope, a 60 acre woodland and a pond with associated wetland.

Objectives

The Town of Bloomfield is requesting an environmental review/natural resource inventory to assist them in devising a plan for farm feasibility and farmstead restoration. An environmental review is necessary to assess whether an agricultural business is achievable as well as other uses. The goal would be to restore the farmstead and match the highest agricultural uses to the utility buildings to attract a start-up enterprising farm business.

Concerns of the town include restrictions to use of the property due to terms of the grant-in-aid, understanding the agricultural potential for the upper and lower fields, the range of possible agricultural uses and information on the woodlands, wetlands, ponds, wildlife habitat and linkages to trails and bike routes

The ERT Process

Through the efforts of the Town of Bloomfield this environmental review and report was prepared for the town.

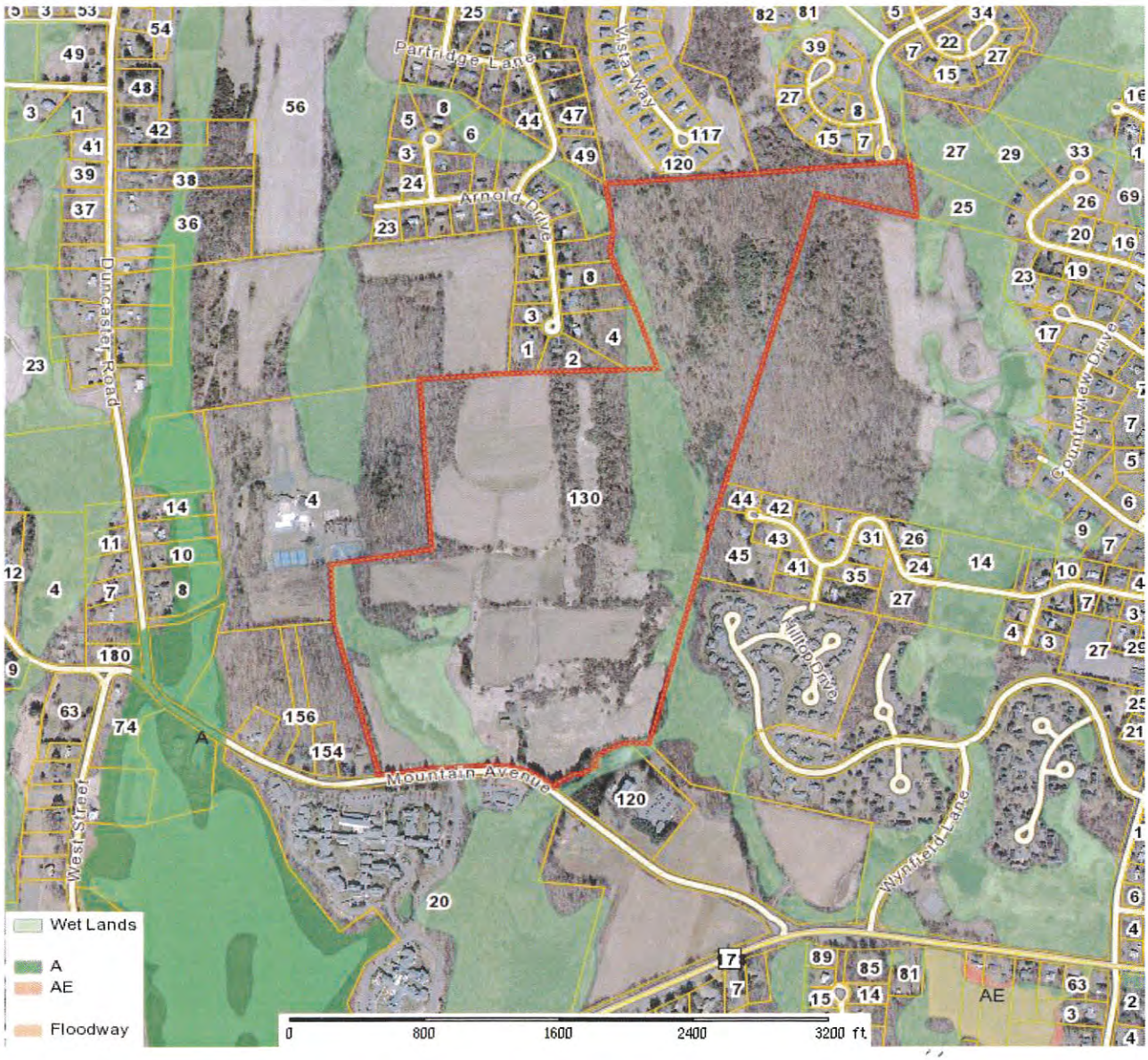
This report provides a natural resource inventory and a series of recommendations and guidelines which cover the topics requested by the town. Team members were able to review maps, plans and supporting documentation provided by the town.

The review process consisted of four phases:

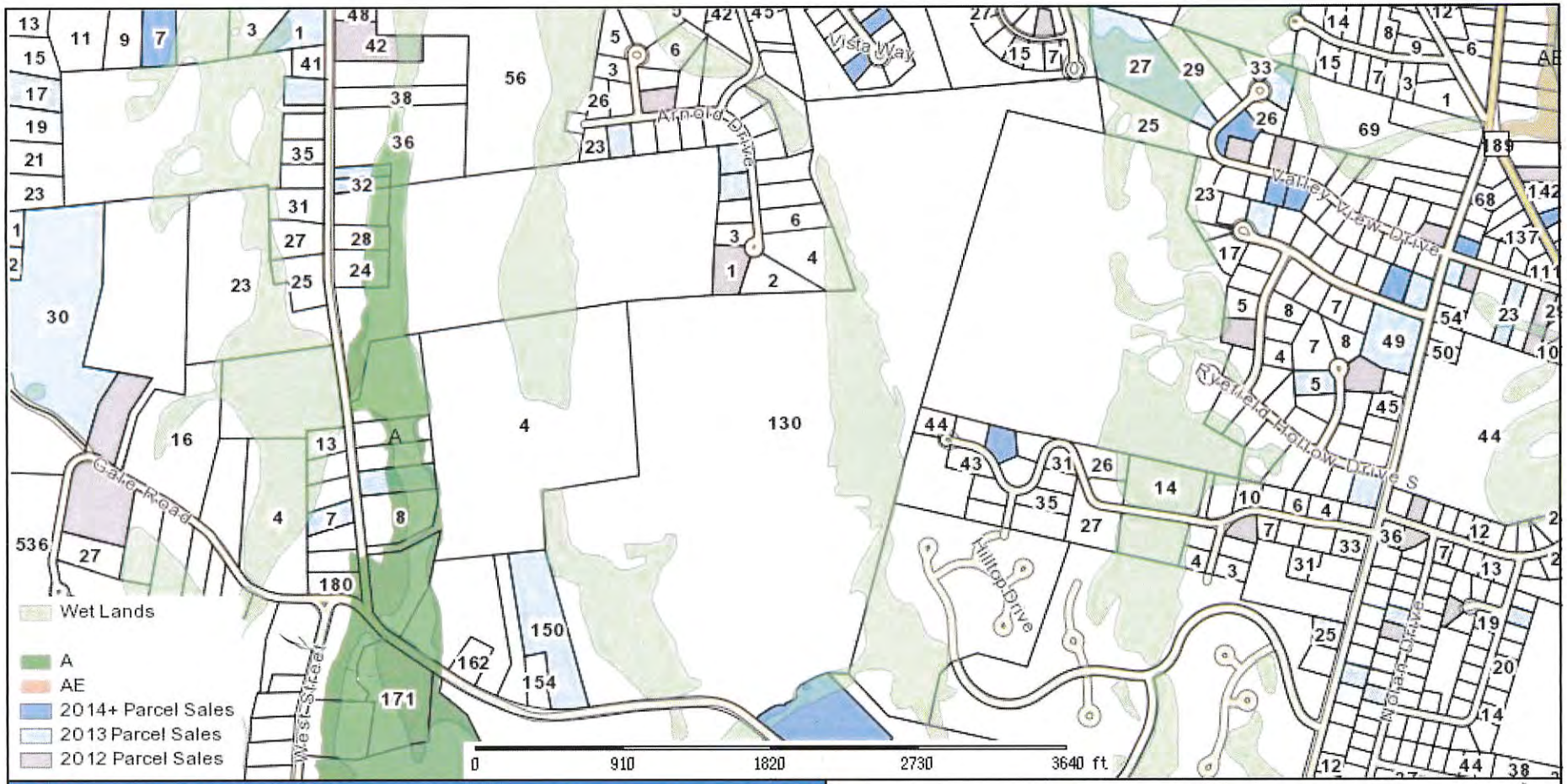
1. Inventory of the site's natural resources;
2. Assessment of these resources;
3. Identification of resource areas and review of plans; and
4. Presentation of education, management and land use guidelines.

The data collection phase involved both literature and field research. The field reviews were conducted on December 1 and December 10, 2014. Some Team members made separate and additional field visits on their own. The field review 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.



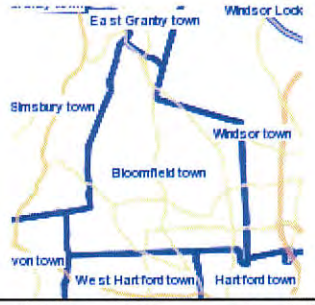
Town of Bloomfield			
Parcel: 7677 Acres: 139.3			
Name:	BLOOMFIELD TOWN OF	Land Value	533400
Site:	130 MOUNTAIN AVE	Building Value	154300
Sale:	0 on 0000-00-00 Reason=U Qual=34	Misc Value	0
Mail:	800 BLOOMFIELD AVENUE BLOOMFIELD, CT 06002	Just Value	702400
		Assessed Value	0
		Exempt Value	0
		Taxable Value	0



LaSalette Park

Parcel: 6978 Acres: 2.12

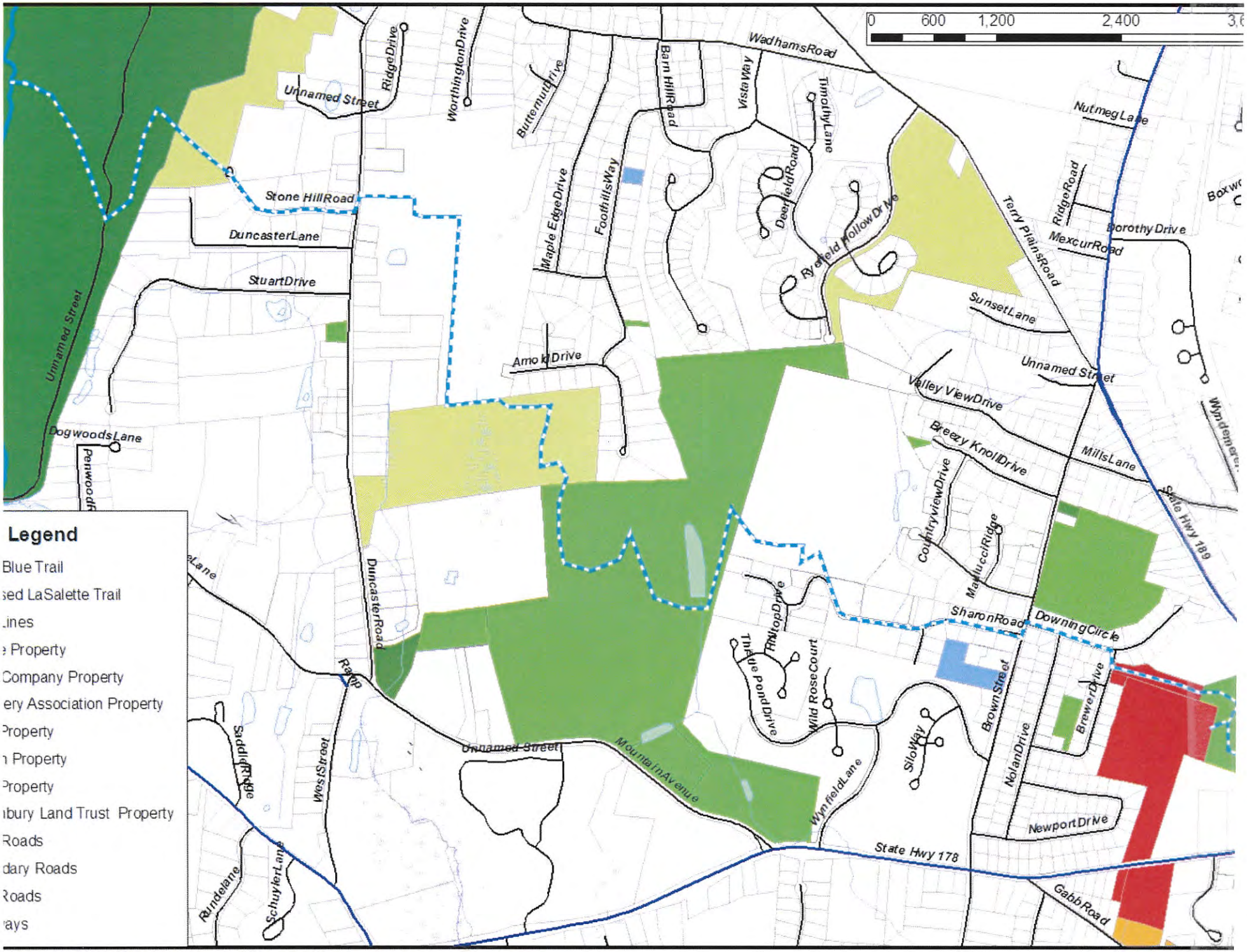
Name:	WADE ELIZABETH &	Land Value	153600
Site:	WEST ST	Building Value	0
Sale:	0 on 0000-00-00 Reason=U Qual=34	Misc Value	0
Mail:	498 SIMSBURY ROAD BLOOMFIELD, CT 06002	Just Value	153600
		Assessed Value	0
		Exempt Value	0
		Taxable Value	0



Town of Bloomfield makes every effort to produce the most accurate information possible. No warranties, expressed or implied, are provided for the data herein, its use or interpretation. The assessment information is from the 2011 tax year. Property Tax Maps are for assessment purposes only. Neither the town nor its employees assume responsibility for errors or omissions. ---THIS IS NOT A SURVEY---

Date printed: 08/04/14 : 07:53:18


N
Partridge Lane
Roberts Rd
Arnold Drive
Spring Hill Lane
Mountain
Avenue
Thistle
Wynfield Lan
ffler Avenue

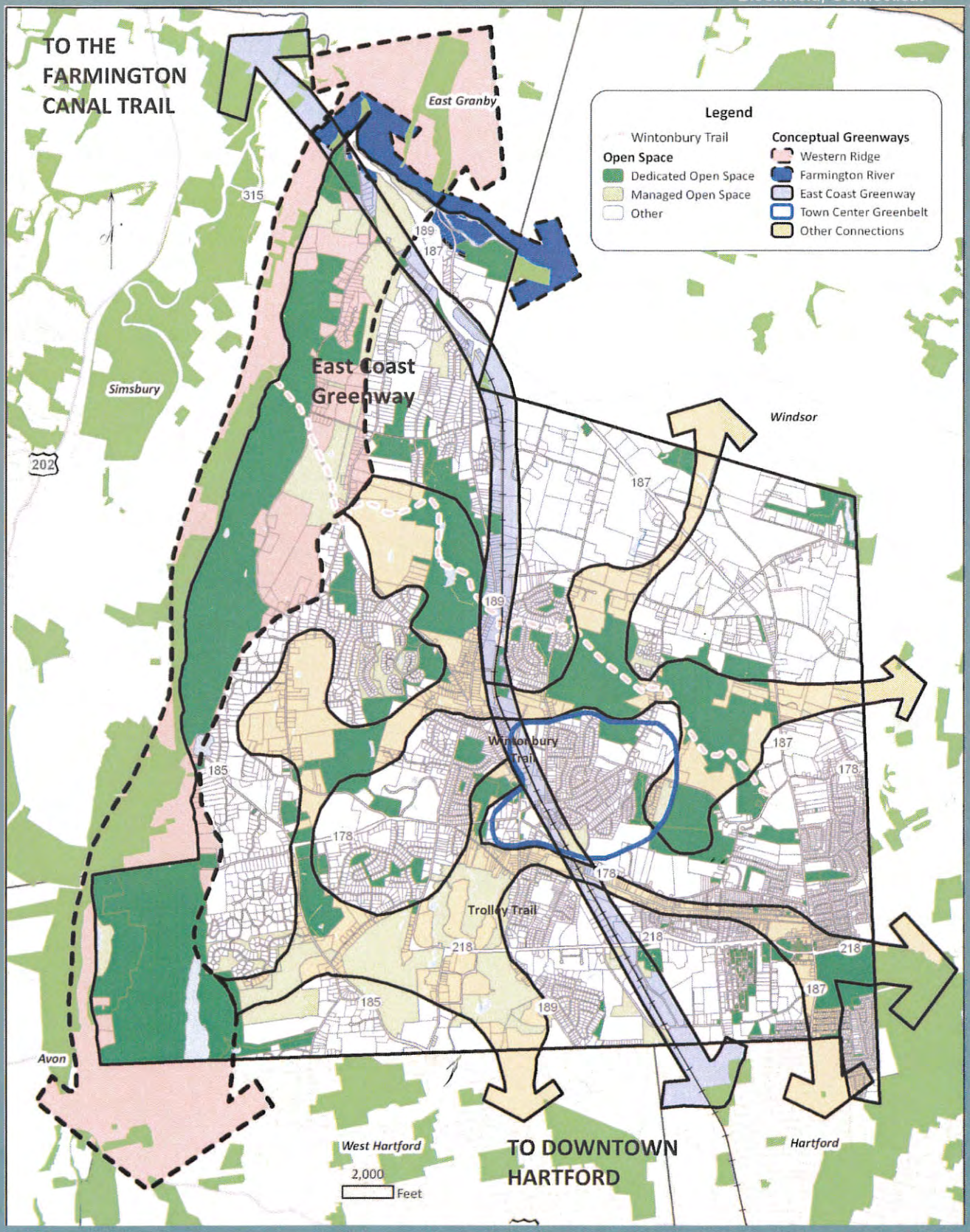


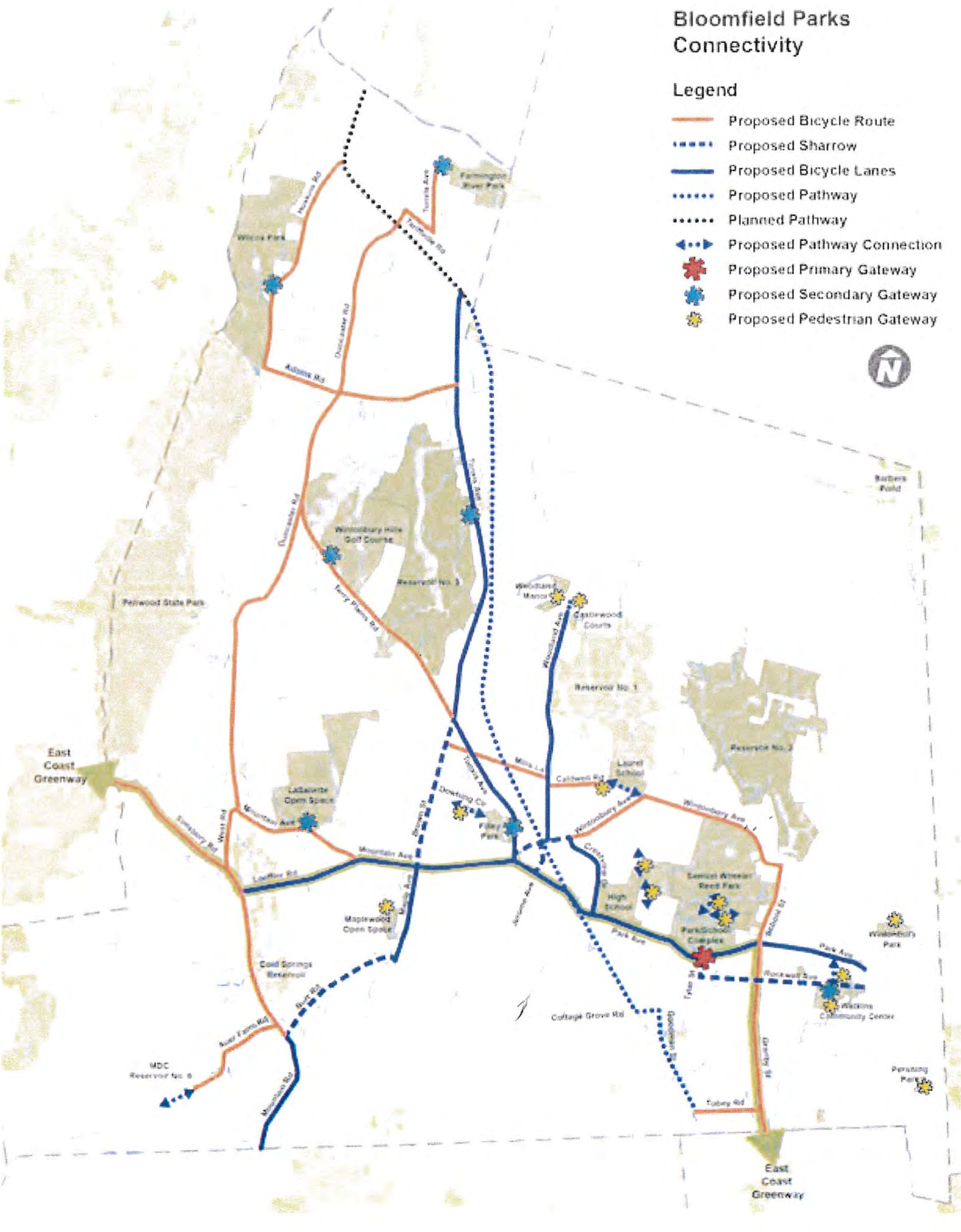
ntains no authoritative data and is intended for planning purposes only.

GIS map prepa

OPEN SPACE VISION

Bloomfield, Connecticut





Bloomfield Parks Connectivity
Legend
Proposed Bicycle Route
Proposed Sharrow
Proposed Bicycle Lanes
Proposed Pathway
Planned Pathway
Proposed Pathway Connection
Proposed Primary Gateway
Proposed Secondary Gateway
Proposed Pedestrian Gateway
East Coast Greenway
Penwood State Park
Wintonbury Hills Golf Course
Reservoir No. 1
Reservoir No. 3
Laurel School
High School
Park/School Complex
Mountain Ave
Park Ave
Wintonbury Ave
Tobey Rd
Cottage Grove Rd
MDC Reservoir No. 6
Maplewood Open Space
Cold Springs Reservoir
East Coast Greenway

GEOLOGY

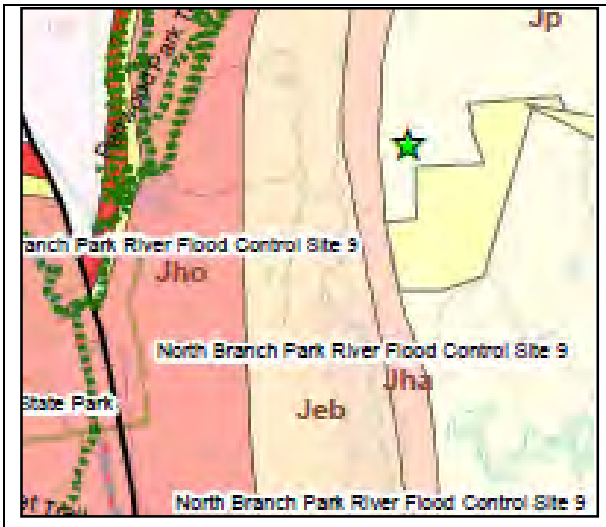


Figure 1 – Bedrock Geology

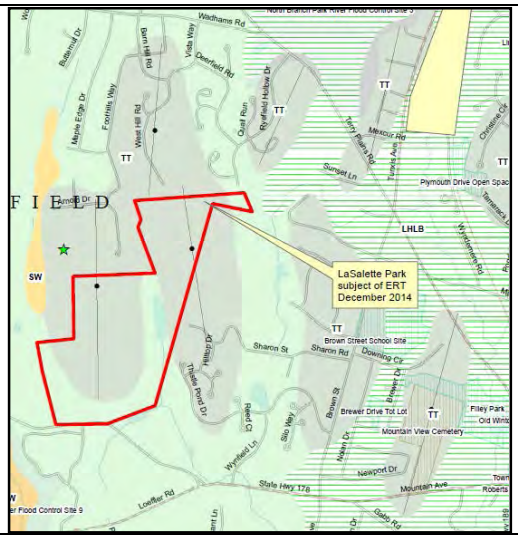


Figure 2 – Quarternary Geology

Photo 1 – 9”x12” briefcase shown for scale.

Bedrock Geology:

The site (Figure 1, pale yellow) is underlain by the geologic unit identified as Portland Arkose which is defined as reddish-brown arkose (brownstone). The arkose can be seen on-site (Photo 1).This formation is part of the Newark Terrane / Hartford and Pomperaug Mesozoic Basins and estimated to be from the Jurassic period from 199.6 to 145.5 million years ago.

Quarternary and Surficial Geology:

The Quarternary period in geologic time began about 1.8 million years ago and continues today. During the last million years the northern hemisphere has experienced numerous ice ages of varying intensity. At least two have been intense and spread ice as far south as Long Island. The last ice age ended about 15,000 years ago; during its height, ice more than a mile thick covered Bloomfield.

Looking at the property area (outlined in red) on The Quaternary Geologic Map of Connecticut (Figure 2) Glacial till (gray (thicker deposits) and pale green) covers most of the property’s surface. Flowing glacial ice is a powerful

agent of erosion. The ice freezes soil and rocks into its base and uses those particles like sand paper to scrape and abrade the underlying bedrock. The result is to round off the hill tops and in the process, create a huge amount of sand, mud and gravel; essentially ground up bedrock. This ground-up debris is referred to as glacial till (or till).

The most interesting geologic features on this property can also be seen on Figure 2, as a group of gray, elongated forms beneath and around the subject property. These gray forms are called drumlins which occur in symmetric, spindle, parabolic, and transverse asymmetrical forms. Drumlins are created within receding glacier ice and record the final direction of ice movement as detailed in Figures 3 and 4. There are a few theories on drumlin formation which would make a great research project resulting in interpretive signage for this property. In fact, you can observe the drumlin field (swarm) quite well at various points on the property (photo 2).

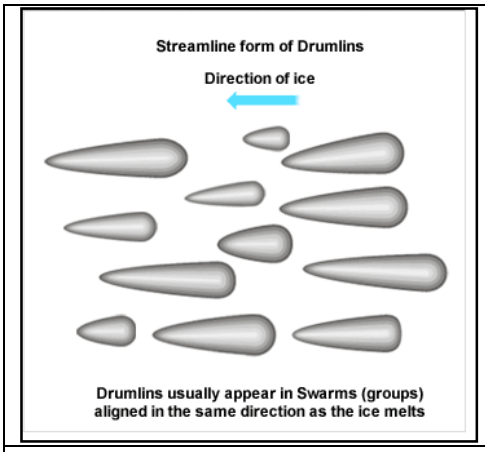


Figure 3

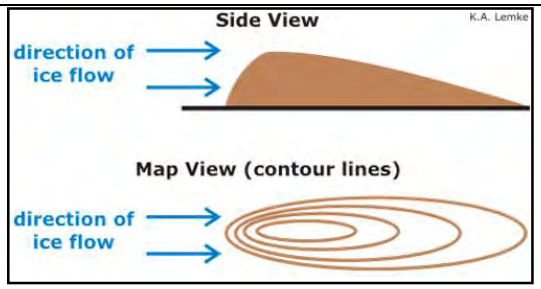


Figure 4

Photo 2 – view from the top of one drumlin to another.

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.

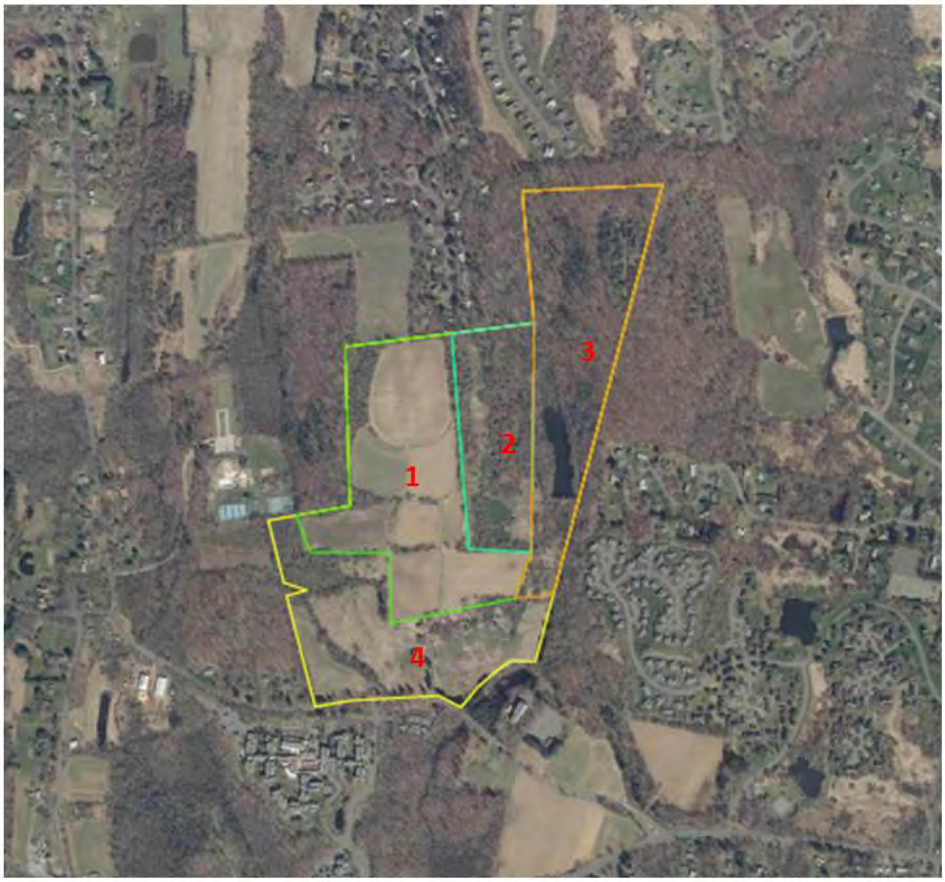
Connecticut Surficial Materials information was initially compiled at 1:24,000 scale (1 inch = 2,000 feet) then recompiled for a statewide 1:125,000-scale map, the *Surficial Materials Map of Connecticut* (PDF, 26 Mb), Stone, J.R., Schafer, J.P., London, E.H., DiGiacomo-Cohen, M.L., Lewis, R.L., and Thompson, W.B., 2005, U.S. Geological Survey Scientific Investigation Map 2784, 2 sheets, scale 1:125,000.

SOILS REVIEW

The National Cooperative Soil Survey of Connecticut provides a good representation of soils in the park. A soils map and a drainage class map are attached at the end of this section, and soil map unit descriptions may be found in the Appendix . The majority of the site is occupied by Wethersfield and Ludlow, with smaller areas of Broadbrook and Rainbow soils. These soils formed in dense glacial till derived mostly from reddish sandstone, shale, and conglomerate with some basalt. They are primarily well and moderately well drained and range from nearly level to steep. A small area of the outwash soils Haven, Enfield, Raypol, and Scarboro occur lower in the landscape. Wilbraham, Menlo, Raypol, and Scarboro are wetland soils.

On the map below, the property is divided roughly into 4 areas with general soil suitability information. Soil maps and map unit descriptions are at the end of this report.

Figure 1 - Broad Management Areas organized by Soils



Area 1:

This area includes prime and important farmland soils that are suitable for a variety of annual or perennial crops. It is dominated by Wethersfield soils, which are well drained glacial tills underlain by a restrictive layer of dense till.

While these fields have been cleared of surface stones, there are significant amounts of gravel, cobbles and stones throughout the profile that may interfere with some practices and equipment. Much of the area is sloping and prone to erosion.

Most crops would require irrigation during the growing season and there is currently no accessible water source on this part of the property. If irrigation is provided, most of the area is suitable for a wide range of perennial crops including grapes, tree fruits, berries, hops, and pasture crops. Level and slightly sloping areas (<8% slope) are suitable for most annual crops including vegetables, flowers, and forage crops. If no irrigation is provided the best use of these fields is for hayland or non-irrigated annual crops such as silage corn or small grains. (Please see the Appendix for a hops and grain resource page.)

A HEL (highly erodible land) determination should be done on these fields and a conservation plan prepared when the desired use is determined. A plan would address the fields as well as erosion and runoff associated with the roads. Recommendations for the fields might include permanent hay and/or perennial crops in the more sloping fields and crop rotations, no-till planting, cover cropping, strip cropping and nutrient and residue management throughout.

Area 2:

This area is also dominated by Wethersfield soils along with Ludlow soil in the lower part. Ludlow is similar to Wethersfield, but moderately well drained, with a seasonal high water table perched on the dense till for part of the growing season.

Most of this area has steep slopes and is very rough ground (stony and rutted). The lower half of the side slope is somewhat less steep, but has groundwater seeps throughout which create small wet areas, some of which are wetlands. These could cause erosion if the area were cleared.

Some appropriate uses for the area are properly managed walking trails, native shrub and tree plantings, permaculture or edible landscaping, and wildlife habitat. Soils are stony, but in general have depth, drainage and water holding capacity adequate for these uses as long as the planting does not require irrigation. There may be an opportunity to take some water from the pond if supplemental moisture is needed. This area might also be suitable for careful pasturing of small animals, at least as a means to clear brush and invasive plants.

Any disturbance here should be accompanied by an erosion control and runoff management plan that addresses the slopes, groundwater seeps, and proximity to the pond.

Area 3:

This area has a combination of wetlands around the pond, steep side slopes, as well as a relatively level hilltop in the northeast corner of the property. Soils are primarily well drained basal tills similar to those in areas 1 and 2.

The exception is the hilltop area mapped 82B - Broadbrook silt loam, 3 to 8 percent slopes. These soils have a windblown surface 2 feet or so thick which is relatively free of stones.

With the exception of the wetlands surrounding the pond and stream, the soils in area 3 are very productive for tree growth and appropriate for walking trails if potential erosion is addressed. In addition, the more level area on the hilltop is suitable for picnic areas or a campground as well. The soils here are in very good condition, but their loamy textures make them vulnerable to damage by erosion and compaction. Any recreational development should be accompanied by a conservation plan that eliminates erosion and minimizes compaction. Disturbance should be minimized close to the wetland areas.

Area 4:

The soils in this area are highly variable, with spatial complexity beyond the scale of the National Cooperative Soil Survey. Moderately well drained soils (Rainbow and Ludlow) can vary significantly in depth and duration of the seasonal high water table. In addition, most of the wetland acreage on the property is in this area. In the lowest elevation, sandy outwash soils (32C – Haven and Enfield soils) occur in a complex pattern with the till, with the depth of the outwash over till ranging from one foot to over 4 feet.

Maintaining the area in grassland and wetland is an appropriate use as well as in native plantings. Much of the area is too wet to access early enough to provide high quality hay, but would provide wildlife habitat, walking trails, native plant education, etc. If more intense use of a portion of this area is desired, such as parking, recreation, or community gardening, a more detailed soil evaluation should be done, particularly to identify seasonal high water table depths, soil textures, and wetlands.

Soil Map—State of Connecticut
(LaSalette)

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.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
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 13, Oct 28, 2014

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

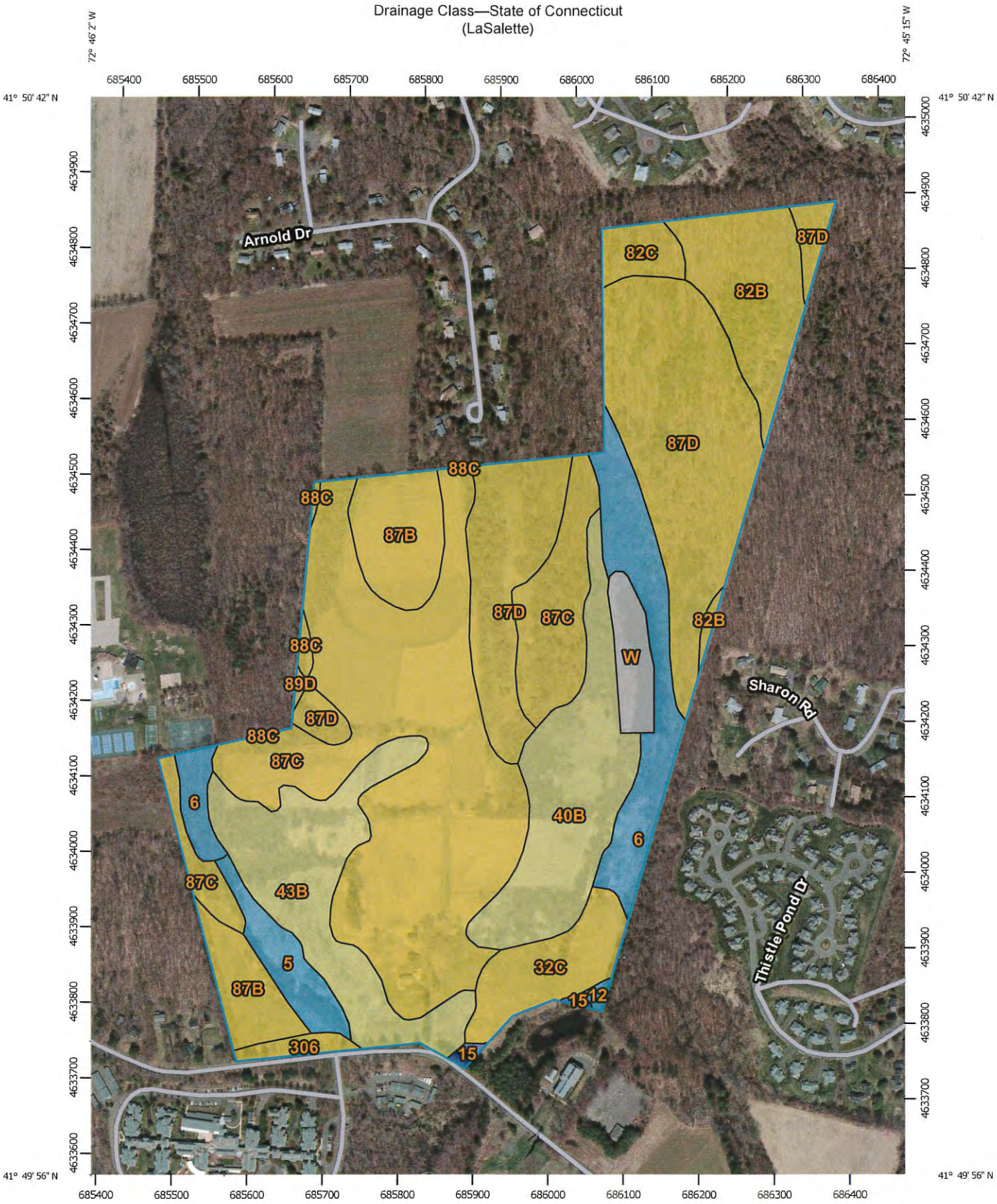
Date(s) aerial images were photographed: Mar 28, 2011—May 12, 2011

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**
5	Wilbraham silt loam	2.8	2.2%
6	Wilbraham and Menlo soils, extremely stony	8.8	6.8%
12	Raypol silt loam	0.2	0.2%
15	Scarboro muck, 0 to 3 percent slopes	0.3	0.2%
32C	Haven and Enfield soils, 8 to 15 percent slopes	4.9	3.8%
40B	Ludlow silt loam, 3 to 8 percent slopes	11.9	9.3%
43B	Rainbow silt loam, 3 to 8 percent slopes	11.8	9.1%
82B	Broadbrook silt loam, 3 to 8 percent slopes	7.6	5.9%
82C	Broadbrook silt loam, 8 to 15 percent slopes	1.8	1.4%
87B	Wethersfield loam, 3 to 8 percent slopes	7.9	6.1%
87C	Wethersfield loam, 8 to 15 percent slopes	40.2	31.2%
87D	Wethersfield loam, 15 to 25 percent slopes	26.8	20.8%
88C	Wethersfield loam, 8 to 15 percent slopes, very stony	0.4	0.3%
89D	Wethersfield loam, 15 to 35 percent slopes, extremely stony	0.1	0.1%
306	Udorthents-Urban land complex	0.9	0.7%
W	Water	2.3	1.8%
Totals for Area of Interest		**128.7**	**100.0%**

Drainage Class—State of Connecticut
(LaSalette)



Map Scale: 1:6,960 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Soil Rating Lines

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Soil Rating Points

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

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.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

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Survey Area Data: Version 13, Oct 28, 2014

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—May 12, 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.

Drainage Class

Drainage Class— 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	Poorly drained	2.8	2.2%
6	Wilbraham and Menlo soils, extremely stony	Poorly drained	8.8	6.8%
12	Raypol silt loam	Poorly drained	0.2	0.2%
15	Scarboro muck, 0 to 3 percent slopes	Very poorly drained	0.3	0.2%
32C	Haven and Enfield soils, 8 to 15 percent slopes	Well drained	4.9	3.8%
40B	Ludlow silt loam, 3 to 8 percent slopes	Moderately well drained	11.9	9.3%
43B	Rainbow silt loam, 3 to 8 percent slopes	Moderately well drained	11.8	9.1%
82B	Broadbrook silt loam, 3 to 8 percent slopes	Well drained	7.6	5.9%
82C	Broadbrook silt loam, 8 to 15 percent slopes	Well drained	1.8	1.4%
87B	Wethersfield loam, 3 to 8 percent slopes	Well drained	7.9	6.1%
87C	Wethersfield loam, 8 to 15 percent slopes	Well drained	40.2	31.2%
87D	Wethersfield loam, 15 to 25 percent slopes	Well drained	26.8	20.8%
88C	Wethersfield loam, 8 to 15 percent slopes, very stony	Well drained	0.4	0.3%
89D	Wethersfield loam, 15 to 35 percent slopes, extremely stony	Well drained	0.1	0.1%
306	Udorthents-Urban land complex	Well drained	0.9	0.7%
W	Water		2.3	1.8%
Totals for Area of Interest			**128.7**	**100.0%**

Description

"Drainage class (natural)" refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized-excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."

WETLANDS REVIEW

Introduction:

Two large wetland systems, referred to as Wetlands 1 and 2 in this section of the report, flank the east and west lower slopes of the drumlin hill located in the center of the LaSalette Open Space property (Figure 1). A description and functional assessment of these wetland systems is provided below, along with recommendations to maintain and enhance their functional values.

Wetland 1:

On the subject property this wetland system lies along the western flanks of the drumlin hill, and extends from Mountain Avenue north to the property boundary with the adjoining JCC Swim and Tennis Club (Figure 1; Photo 4). This wetland extends off-site to the north of the Swim and Tennis Club, and south of Mountain Avenue.

This seasonally saturated wetland system consists of three distinct interconnected components:

- a relatively narrow wooded riparian corridor that extends through a pasture field
- a portion of the gently sloping pasture field that borders the riparian corridor (Photo 1)
- a broad deciduous wooded swamp that runs from the pasture field north to the JCC property (Photo 5)

A first order headwaters watercourse flows through the center of Wetland 1 (Photo 2). The low gradient channel (2-3 feet wide) consists mostly of accumulated silt sediment deposits, although the upper reaches contain cobbles. Low, sluggish flow was present in the channel on the inspection date. This watercourse is not shown on the USGS topographic map, and given its relatively small watershed it is likely that the channel is dry during the summer months. This watercourse, and the unnamed watercourse in Wetland 2, are tributary to Tumble Brook south of the subject property, and support its baseflow.

North of a tree line the deciduous wooded swamp broadens considerably. Here prominent tussock sedge hummocks can be observed (Photo 3). A narrow dirt farm road crosses this swamp.

The dominant vegetation in Wetland 1 includes trees (red maple, green ash, musclewood, red cedar), shrubs (speckled alder, multiflora rose, silky dogwood, spicebush) and herbs/grasses (reed canary grass, soft rush, tussock sedge, sensitive fern, common reed). Black-capped chickadee, tufted titmouse, American crow, red-tailed hawk, white-breasted nuthatch and American robin were observed in or near the wetland.

Wetland 1 provides a variety of functions/ecological services:

- Groundwater Discharge and Recharge - Active groundwater discharges were observed in the wetland during the site inspection. These discharges support the baseflow of the watercourse in the wetland, and downstream aquatic resources such as Tumble Brook. Groundwater recharge likely occurs in the wetland during the drier summer months, when the groundwater table is lower and does not preclude infiltration.

- Floodflow Alteration - The broad, densely vegetated, gently sloping wetland has the capacity to detain and slowly release a significant amount of stormwater runoff.

- Pollutant Removal - The gentle slopes and dense vegetation that characterize the wetland allow it to remove a variety of solid and dissolved pollutants from stormwater runoff.

• Production Export - Biomass generated by the dense vegetation in the wetland decomposes and is seasonally exported by the watercourse to support downstream aquatic systems.

• Wildlife Habitat - The subject property lies within a landscape that has been lightly developed, and which includes interspersed field and forest habitats (Figure 1). Because of this, the property in general has a high wildlife habitat value. Wetland 1, with its diverse wet meadow, deciduous wooded swamp, and shrub swamp fringe habitats, is an important component of the overall property habitat value.

Wetland 2:

On the subject property this wetland system lies along the eastern flanks of the drumlin hill, and extends from Mountain Avenue north to the property boundary with an adjoining residential development (Figure 1).

Near the south end of this wetland system lies a small constructed pond with a shoreline bordered entirely by trees and shrubs. Very dense multiflora rose thickets on the slope above this pond preclude safe access. A deciduous wooded swamp extends north from this small pond, to another, but larger, constructed rectangular pond (Photo 7). The pond shoreline is bordered by trees, with small gaps along the dam at the south and of the pond that provide access for fishing and wildlife viewing. Dredge spoil piles can be seen along the pond shoreline. Neither of these ponds is visible in 1934 and 1951 archived aerial photographs.

A deciduous wooded swamp extends north of this pond, up to the northerly property boundary. A meandering low gradient watercourse channel runs through the center of this swamp (Photo 9). The northern portions of this channel exhibit moderate to severe bank erosion (Photo 12). The very gently sloping lower reach of this channel contains mostly silt sediments, while the moderately sloping upper reach contains cobbles.

The dominant vegetation in Wetland 2 includes trees (American sycamore, red maple, black birch, eastern hemlock, American elm, green ash), shrubs (silky dogwood, speckled alder, multiflora rose, winterberry, spicebush, Japanese barberry) and herbs (purple loosestrife, soft rush, skunk cabbage, sedges). Wildlife observed in and near the wetland include wood duck, red-tailed hawk, northern junco, black-capped chickadee, white-breasted nuthatch, blue jay, pileated woodpecker and white-tailed deer.

Wetland 2 provides a variety of functions/ecological services:

• Groundwater Discharge and Recharge - Active groundwater discharges were observed in the wetland during the site inspection, particularly in the swamp at its north end (Photo 10). These discharges support the baseflow of the watercourse in the wetland, and downstream aquatic resources such as Tumble Brook. Groundwater recharge likely occurs in the wetland during the drier summer months, when the groundwater table is lower and does not preclude infiltration.

• Floodflow Alteration - The broad, densely vegetated, gently sloping wetland and the constructed ponds detain and slowly release a significant amount of stormwater runoff.

• Pollutant Removal - The gentle slopes and dense vegetation that characterize the wetland remove a variety of solid and dissolved pollutants from stormwater runoff.

• Production Export - Biomass generated by the dense vegetation in the wetland decomposes and is seasonally exported by the watercourse to support downstream aquatic systems.

• Wildlife Habitat - Wetland 2 contains wet meadow, deciduous wooded swamp, and open water habitats, and thus is capable of supporting a diverse suite of wildlife species.

• Finfish Habitat (Ponds and Lakes) - The two constructed ponds in Wetland 2 likely sustain a warm water finfish community.

• Recreation - The northerly pond in Wetland 2 provides opportunity for fishing and wildlife observation. A nearby well-maintained hiking trail allows convenient access to parts of the wetland (Photo 8).

Recommendations:

There is a proposal to restore the farmstead on the property and to attract a start-up enterprising farm business. Since a detailed plan has not yet been developed, it is not possible to provide feedback to the plan at this time. However, the following general recommendations are offered to maintain and enhance the functional values of the on-site wetlands:

1. The educational and recreational values of the on-site wetlands are severely hampered by locally dense multiflora rose thickets. In particular, these thickets essentially preclude safe access to the smaller pond in Wetland 2. Consideration should be given to selectively clearing some of these thickets to provide better, safer access to the wetlands.

2. The constructed ponds in Wetland 2 may have been pumped in the past for agricultural irrigation. If this practice is resumed, a study should be conducted of the capacity of the ponds to supply irrigation water, and restrictions should be established to prevent pumping from impairing the finfish and wildlife habitat of these resources.

3. Currently there are only small gaps along the wooded shoreline of the large pond in Wetland 2 to provide access for fishing and wildlife observation. The selective cutting of saplings along the dam at the south end of this pond would enhance its value for fishing and wildlife viewing.

4. Presently there is only a very narrow wooded buffer between the watercourses and the edges of the pastures in Wetlands 1 and 2. In order to preserve the water quality of these streams, it is recommended that a 100 foot wide riparian buffer be preserved adjacent to the watercourses. It is recommended that no vegetation cutting or fertilizing occur within these buffer zones.

5. The placement of tree swallow nest boxes in the pasture fields, and wood duck nest boxes in the Wetland 2 ponds could enhance the wildlife habitat of these resources.

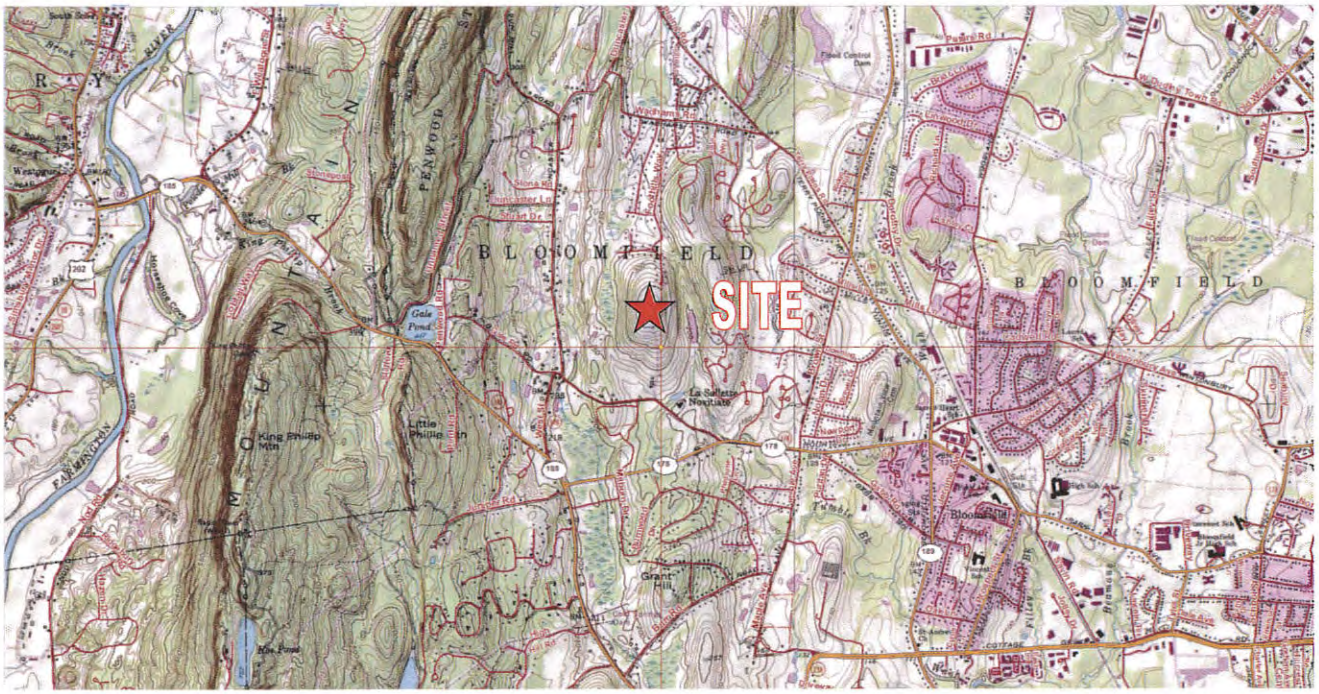


Figure 1. Site Location Map
LaSalette Park Bloomfield, CT
Connecticut Ecosystems LLC
December 23, 2014
Avon, CT Quadrangle Map

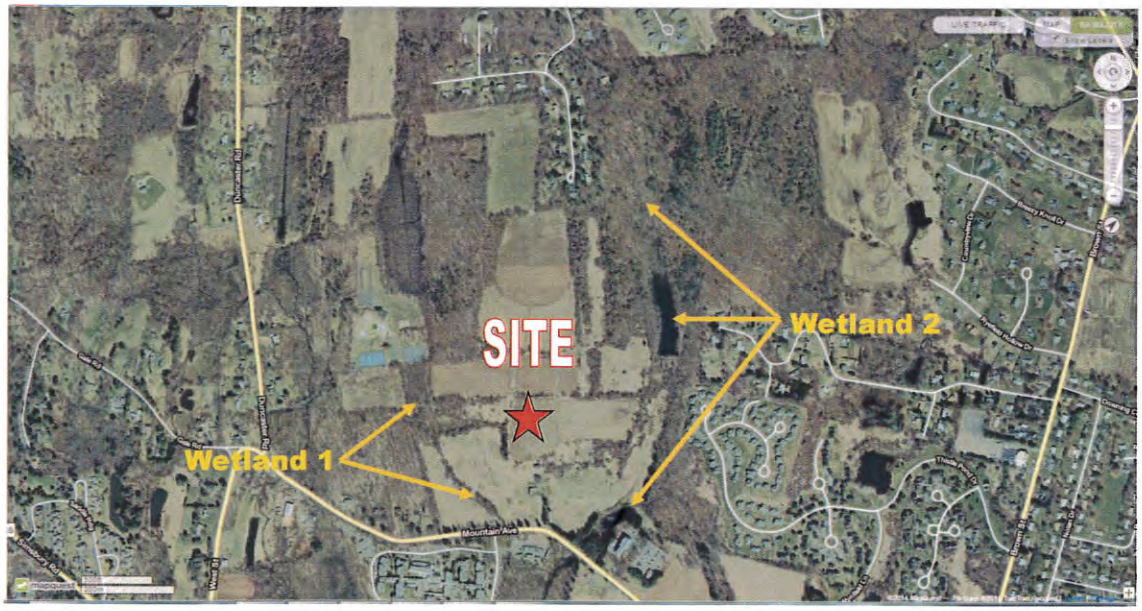


Figure 2. Aerial Photograph
LaSalette Park Bloomfield, CT
Connecticut Ecosystems LLC
December 23, 2014

LaSalette Open Space Bloomfield, CT 12/15/2014 1. Large pasture 2. Seasonal watercourse in Wetland 1
3. Prominent tussock sedge hummocks in Wetland 1 4. Wetland 1 terminates at JCC Swim & Tennis Club

LaSalette Open Space Bloomfield, CT 12/15/2014 5. Broad deciduous wooded swamp in Wetland 1 6. Hillside shrub swamp/ wet meadow in Wetland 2 7. Large pond in Wetland 2 8. Well-maintained trail near large pond in Wetland 2

LaSalette Open Space Bloomfield, CT 12/15/2014 9. Wetland 2 seasonal watercourse 10. Active groundwater discharge in Wetland 2 11. Windthrown trees are common in Wetland 2 12. Bank erosion is evident in northern section of Wetland 2 watercourse

CONSULTING CONSERVATION SCIENTIST REVIEW

Overview:

The LaSalette Park Property consists of largely an agricultural landscape edged by woodlands, wooded and shrubby riparian areas, and old fields. The farm includes an interesting cluster of buildings from the 1800s including the National Historic registered Oliver Filley House. The Town is interested in evaluating the potential of the site for increased agricultural activity as well as other compatible uses. This reviewer's comments will provide information to consider as per agricultural use. Since the field visits, additional information was provided by CT DEEP as to the nature of the potential uses based on the wording provided as per the funding from the State of Connecticut to purchase the parcel. This reviewer did not examine the deed language to see if there was additional detail or clarification. (Please see the dedication Agreement and the Connecticut General Statutes Sec. 7-131c through 7-131k, as amended in the Appendix of this report.) An email from David Stygar, CT DEEP, as to the acceptable uses for the parcel is below:

Subject: RE: LaSalette Park

That would depend upon the extent.
If there are fields, open fields that need haying 2-3 times a year then that would be acceptable. If we are talking about leasing the area for commercial agriculture, then no. The property was purchased for open space and recreational use. Recreation use to be the primary use, management of open space (hayfields) second. Athletic fields, trails, open passive fields, passive recreation, hunting, fishing, picnicking… all accepted uses.

Does this give you a good idea?

Dave

In addition, this reviewer had a follow up conversation with Dave for additional clarification. He explained that because the public access for recreation language is of primary importance, any agricultural use can't overly restrict the public's right to access the fields/property. He interpreted managed hayfields as not being overly restricted, but a commercial agricultural enterprise such as vegetable production, which would limit public access, to be unacceptable. When asked, he also considered community gardens to be a use compatible with the purchase language.

As a management and compatible use plan is developed by the Town and residents, the following information is offered. It is recommended that a conservation plan (which includes a woodland management plan) be developed for the property. More detailed information about the soils can be found in the portion of the report for soils by Lisa Krall, USDA NRCS. The numbered reference areas discussed below are identified on the accompanying map at the end of this section:

Buildings:

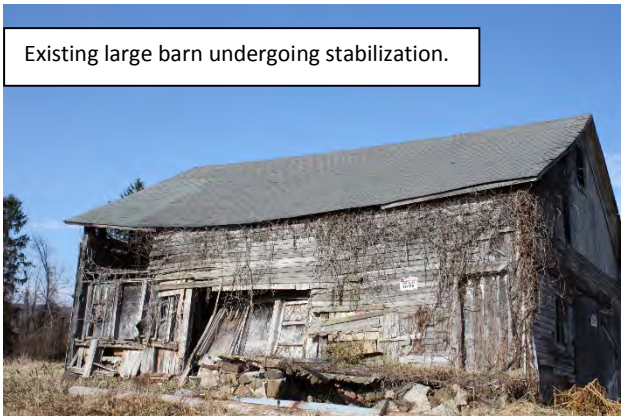
The Oliver Filley House and building complex will best maintain their historical integrity if the surrounding land use continues to be in agricultural use and should be encouraged. The outbuildings are in poor shape and, typical of historic buildings, difficult to reuse for current agricultural needs.

Oliver Filley House – front view.

Existing barn/shed and corncrib.

Area where old barns were located.

Existing large barn undergoing stabilization.



Consider reusing the area where the old barns were, to the east, for any new structures. Consider developing a kitchen, herb, and or demonstration garden to complement the historic structures and possible uses for events and educational endeavors. Test soils for heavy metals in proposed garden areas.

Area # 1:

This field is just east of the complex of buildings. The area is currently used as a hayfield. The soils are a highly complex landscape of soils that range from well drained to poorly drained and from strongly sloping to very gently sloping.

Use and management **-** It may be possible to find sufficient area of well drained gently sloping soils to develop a small area for community gardens or more intense agricultural use. This would require additional soils mapping/investigation. A water source is recommended if a community garden is established (A new well may be able to service the buildings as well as this area. The pond could supply supplemental water- testing recommended). Due to the proximity to the buildings, which have a history of manufacturing, it would be recommended to have the soils tested for heavy metals. The area could continue to be used for moderate quality hay production, recommend soil testing and appropriate applications of nutrients and weed control. Areas of invasives, trees and shrubs should be controlled on the edges of the field to increase the useable field area.

Area # 2:

These fields, just west of the farm building complex are dominated by gently sloping moderately well drained to poorly drained soils. The soils have a significant component of poorly drained soils. Thus the field is dominated by reed canary grass, sedges, and soft rushes. It receives significant surface and subsurface water from upslope areas.

Use and management- this field has limited capacity for more intensive agricultural use due to wetness. The existing grasses could continue to be managed as low to moderately quality hay. Soil testing and nutrient application would be recommended. The area could also continue to be under a low level of management, cut annually to reduce shrub and tree establishment, and managed as wet meadow habitat. This would give an "agricultural" appearance from the house and buildings.

Area # 3:

The fields in the middle of the farm are dominated by strongly to gently sloping well and moderately well drained soils. Some of these fields were recently used for corn, hay, or have been fallow for several years and dominated by common agricultural weeds and some invasives.

Use and management- Portions of these fields with well drained soils have a high potential for tree fruits as wells as berries, grapes, and Christmas trees. Currently there is evidence of erosion both in the fields and in the access roads. Any row crop production must be according to a conservation plan, and depending on the crop and management, may require strip cropping, cover crops, and reduced tillage practices. These fields are capable of producing very high quality hay, and could be seeded down to grasses and legumes. Soil tests, nutrient application, weed control, and no till seeding recommended. In addition, strips of small grain crops could be incorporated into the rotation. These crops, once established, reduce erosion and may be more compatible with the ownership restrictions referenced by DEEP. Farm access roads and surface drainage swales and diversions need to be improved to reduce erosion and improve all season access for farm and recreational activities. Trees, shrubs and vines need to be cleared from field edges to gain back acreage and productivity.

Area # 4:

The fields in this area are dominated by steep to strongly sloping well and moderately well drained soils. In addition there are numerous springs and intermittent watercourses. This area appears to have been used for hay

and or pasture historically. Currently it is dominated by mixed grasses, herbaceous plants, shrubs, and other early successional plants. Invasive plants are predominate in some areas.

Use and management- This area has limited agricultural potential, but could be managed for grassland and shrub land or early successional habitat. Not recommended for restoration to active agricultural land since there are more suitable fields.

Area # 5:

This field is dominated by gently sloping well drained soils. It has previously been used for corn but was fallow this past season and is dominated by common agricultural weeds. Areas of erosion on moderately sloping portions as well as on some access roads were found.

Use and management- This field has high potential for agricultural use either for row crops or perennial crops, and is adjacent to another agricultural field on the adjoining parcel. The field could produce high quality grass and/or legume hay if soil tested, nutrients applied, weeds controlled and seeded. Small grains could also be incorporated into the rotation. Brush and trees should be cleared from field edges to restore acreage. The field offers a spectacular view, and if in hay crops, could be used occasionally for outdoor events without damaging the soils.

Conclusion:

The LaSalette Farm has a long history of agricultural use. The ability to use the farm for more intensive agricultural production is limited by the natural and infrastructure features as well as the potential conflict with the language on use and management based on the original State of Connecticut funding, the ownership by the Town, the lack of long term leases, and lack of investment in agricultural infrastructure and land stewardship. Efforts by the Town and interested groups such as the Wintonbury Land Trust and the Wintonbury Historical Society to restore the buildings and develop a long term strategy and management plan are to be commended. This parcel can then continue to provide important agricultural economic activity as well as cultural, recreational, and ecosystem services.

Additional thoughts and recommendations:

- Clarify what activities are considered compatible with the purchase and deed constraints. Would use of fields by a town non-profit or the Donald F. Harris Agricultural-Science Center for growing crops be allowed? Community gardens? Would they be allowed to use high tunnels or greenhouses?
- Even if the fields can only be used for hay crops, this farm can provide a significant acreage that can contribute to the agricultural community and should be encouraged.
- Discuss with the farmer who has been using the property what their needs are (acreage) as part of their business.
- Use a long term lease with any farmer (s). Require following a conservation plan. This ensures protection of the soil resources and allows the farmer to recoup the cost of cover crops, soil heath improvements and amendments, and infrastructure improvements. Consider sharing in the cost of some of the farm improvements (such as in-kind) which is an investment in the property.
- Although the ponds are potential water sources, consider a well development for any more intensively used crop production areas.
- Once a farmer (s) have been identified, and leases developed, consider applying to the CT Department of Agriculture Farmland Restoration Program (FLRP) to improve access roads and water management, control brush, and restore the fields. Other Federal and State programs may also be available to the Town or Farmer.
- Develop trail systems and public access that reduces impacts to any agricultural activities. Trails that use the existing farm roads and edges of fields can meet the public access needs and still make the fields useable.


Google earth
Sharon-Rd
Wild-Rose-Ct
Sharon-St
#4
#3
#5
#2
Buildings
#1
Mountain-Ave
Duncaster-Rd
Gale-Rd
West-St
Imagery Date: 3/29/2012 41°50'15.92" N 72°45'47.41" W elev 308 ft eye alt 5840 ft
1992
3/2012

LANDSCAPE ECOLOGIST REVIEW

In addition to agriculture, the property has potential for hiking. The view from the hilltop is a valuable asset. And the property provides opportunities for trail linkages to adjacent properties. Additional comments and concerns are as follows.

Erosion:

The information below on soil ratings comes from Web Soil Survey, an online soils tool made available by the USDA-Natural Resources Conservation Service (NRCS). Web Soil Survey may be accessed at http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm . It allows creation of do-it-yourself soils maps and through its Soil Data Explorer provides related information. For the LaSalette Park property, note that the soils map layer is slightly offset from the underlying aerial photo (as may be seen by comparing the location of the mapped polygon labeled *W* [Water] to the underlying image of the pond).

From Web Soil Survey, the erosion ratings for road and trail use on the soil types mapped for the property range from *slight* to *severe*. *Slight* means little or no erosion likely. *Moderate* means some erosion is likely; roads or trails may require occasional maintenance; and simple erosion control measures are needed. *Severe* means significant erosion is expected; the roads or trails require frequent maintenance; and costly erosion control measures are needed. As a general rule, soil types on the property that included slopes steeper than 8% (i.e., C and D slopes) were rated *severe* while the wetland soils were rated *slight*. (Refer to the soils map.)

The soil rutting hazard related to the operation of forestland equipment for all of the soil types mapped for the property is *severe*, meaning that ruts form readily. During the site visit, 4" to 5" deep ruts (in a spacing typical of an ATV wheelbase) were seen in the wetland flat near the dam on the trail that runs straight down from the agricultural hilltop. The sloping part of the trail also had signs of tire wear. Although not mapped as a wetland soil, the lower slope has vegetation that indicates that indicates a good deal of soil moisture is common year round (e.g., Speckled Alder, Purple Loosestrife, Red-osier Dogwood). Ruts not quite so deep also were seen in wet soil along the trail bordering the east side of the pond.

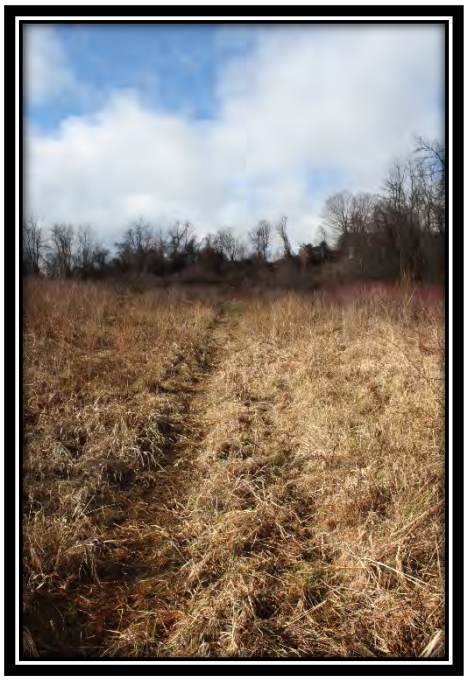
White blazed trail along east side of pond.

On the east edge of the hilltop fields, an erosion gully has formed. There is a water bar across the road at this point which channels water into a ditch on the east (downslope) side of the road.

Given the propensity of the soils for erosion, it is important to prevent erosion from taking hold. It was noted that the dirt road is well-maintained with gravel. This is a practice that should be continued. Consideration should be given to creating a permanent vegetated border to the road. This would serve to protect the road from erosion coming off the field. Small gullies in a field can be blended into a final grade using tillage equipment. Then the area can be cropped. However, following harvest, it is paramount to apply a cover crop to cropped fields to help protect the soil during the non-growing season. Where the water is channeled across the road by the water bar, any down-cutting in the ditch should be addressed before it gets worse.

Gully in the upper field.

Trail re-routing is suggested for the trail which runs from the hilltop fields down to the pond dam. Recommended re-routing would involve (1) switchbacks to lessen the steepness of the trail and (2) when possible, avoidance of areas where the soils are prone to wetness. As more people use the trail and if bicycle traffic is planned, this is an important consideration. Perhaps the re-routing process could begin with an experimental flagged route which would allow some time to view the proposed trail conditions in all seasons.



Trail looking upslope to farm fields from dam area.

Information on trail building is available on the internet, for example, at http://www.americantrails.org/resources/trailbuilding/Favro-sustainable-trail-design.html . In addition, the Connecticut Forest and Park Association organizes periodic trails workshops and has done special trails workshops for other organizations (http://www.ctwoodlands.org/).

Invasive Plants:

The typically observed invasive plant species of old fields were seen in various places on the property including agricultural field edges and the clearing near the former ski area on the east side of the property. These species include Oriental Bittersweet (*Celastrus orbiculatus*), Autumn-olive (*Elaeagnus umbellata*), Multiflora Rose (*Rosa multiflora*), Wineberry (*Rubus phoenicolasius*), Japanese Barberry (*Berberis thunbergii*) and the hollow-stemmed, non-native shrubby Honeysuckles (*Lonicera* spp.). Reed Canary Grass (*Phalaris arundinacea*) was seen at the wettish edges of the agricultural fields. This is a species that spreads readily by underground runners, particularly in wettish soil.

Of most concern was the presence of Canada Thistle (*Cirsium arvense*), particularly in the agricultural field east of the road, below the hilltop fields. This species spreads by seed, by underground runners and even by transported root fragments. It can quickly form an extensive root system

leading to dense patches in agricultural fields, pastures and other open areas; and its roots release chemicals that inhibit the growth of other plants.

Canada Thistle is difficult to control and most recommendations involve the repeated use of chemicals. One reported non-chemical method of control is to till every three weeks for an entire growing season. This helps deplete root reserves. In addition, where roots are exposed to freezing temperatures, they will die. Another non-chemical method to slow the growth of Canada Thistle is to plant something that grows vigorously and thickly enough to shade it. Rather than being used in place of chemicals, shading is a method suggested as complementary to chemical control.

Canada Thistle is readily spread by agricultural equipment. For example, tilling equipment can carry root fragments (and this should be considered if the tillage method of control is attempted). In addition, harvesting and mowing equipment can transport seeds. Where Canada Thistle is present, it is important to clean the equipment before moving it to new fields.

Canada Thistle (Cirsium aryense)

An identification sheet for Canada Thistle is included in the Appendix. Additional information is available at a variety of websites including:
http://oregonstate.edu/dept/nursery-weeds/feature_articles/thistles/thistles.html
http://www.btny.purdue.edu/pubs/ws/canadathistle/CanadaThistle.html
http://extension.udel.edu/ag/files/2012/08/WF3.pdf .

Technical and Financial Assistance for Farmers:

The USDA-Natural Resources Conservation Service (NRCS) offers farmers technical and financial assistance on erosion control and other aspects of farmland management. (Note that Towns as landowners are not eligible for NRCS financial assistance programs, however, individuals who farm on rented Town land may be eligible.) Further information on the kinds of assistance available and the eligibility requirements may be obtained from NRCS at the USDA Service Center office in Windsor, Connecticut (100 Northfield Drive, 4th Floor; telephone: 860-688-7725 Ext. 3).

FOREST AREA REVIEW

Introduction:

Contained within the northeast section of LaSalette Park, a 140 acre parcel owned by the Town of Bloomfield, is approximately 60 acres of forestland, bounded to the south and west by recently abandoned cultivated fields, and the north and east by a mixture of private and residential holdings. Based on satellite imagery from 2012 and a field visit during December 2014, there are three distinct vegetation types: reverting pasture, mixed hardwood, and softwood. Each area provides important ecological services and is depicted on a vegetation type map (Exhibit 1). A general description of current conditions and discussion of management opportunities continues below; please note that the acreages depicted are approximate.

General Descriptions of Each Vegetation Type:

The 20 acres of east-facing reverting pasture may be best described as an area flourishing with native and non-native shrub species amid grassy areas. A representative image of this stand can be seen in Exhibit 2. The predominant native plant species found during the site visit include winterberry (*Ilex verticillata*), eastern red cedar (*Juniperus virginiana*), staghorn sumac (*Rhus typhina*), and brambles (*Rubus spp*). Many non-native species were also encountered, including: Japanese barberry (*Berberis thunbergii*), Asiatic bittersweet (*Celastrus orbiculatus*), crabapple (*Malus spp*), multiflora rose (*Rosa multiflora*), wineberry (*Rubus phoenicolasius*), and several species of honeysuckle (*Lonicera spp*).

The 36 acres of gentle to steeply sloping mixed hardwood appears to have originated during the middle part of the 20th century, following farmland abandonment as remnants of barbed wire fencing can still be observed. A representative image of this stand can be seen in Exhibit 3. The parcel appears to have limited history of forest management activities as inferred by a scarcity of cut stumps. Although a few individual trees have attained significant size[JW1] (approx. 30-40" diameter at breast height), the vast majority of the stand is comprised of medium-shade tolerant, poletimber (<11" dbh) trees with an understory of shade tolerant species. The common tree species encountered during the visit include: red maple (*Acer rubrum*), sweet birch (*Betula lenta*), American beech (*Fagus grandifolia*), and eastern hemlock (*Tsuga canadensis*). The larger, less common overstory species observed during the visit include: sugar maple (*Acer saccharum*), shagbark hickory (*Carya ovata*), yellow poplar (*Lirodendron tulipifera*), and northern red oak (*Quercus rubra)*. There is a lack of natural seedling regeneration and herbaceous cover[JW2][JW3], except where light is allowed to penetrate through breaks in the canopy. However, the suite of invasive[JW4] species observed in the reverting pastures has also become established in the hardwood forest. This information, along with the apparent browse line seen in exhibits 3 and 4, suggests an overabundant deer herd. This area also surrounds a 2 acre waterbody.

Surrounded by the mixed hardwood stand described above is a 6.5 acre stand of eastern white pine (*Pinus strobus*) with scattered hardwood trees. Similar to the mixed hardwood stand, this stand also appears to have little evidence of any harvest activity. Several smaller diameter individual pines appear to have recently died. A representative image of this stand can be seen in Exhibit 4.

General Concerns and Opportunities:

Each of the three areas discussed above serve important ecological services. The forested areas aid in protecting the quality of the water resources by helping to stabilizing the soil and aiding in erosion protection, serving as structural habitat for the wildlife including birds, and also aid in carbon sequestration. In addition to the above services, the reverting pastures provide habitat for shrub-nesting birds and abundant soft mast (berries). That stated, the principal threat to each of these three areas is the presence of invasive plant species. Not only can they out-compete native species for resources and degrade the quality of the landscape, they can potentially impact human health, via presenting an increased risk for contracting tick-borne illnesses. Should the Town of Bloomfield wish to make it a priority to improving the environmental quality of the site, mitigating the threat of invasive species would be a significant step in that direction. There are many examples throughout the State where municipalities, land trusts, and private landowners have used mechanical and/or chemical methods to control invasive plant species with great success.

Management opportunities for the mixed hardwood and softwood stands are limited, due the less desirable quality of the resources on the site as well as a lack of adequate seedling understory which would become the larger trees in a future stand. Attempts to improve the timber resources of the site should be postponed until the spread of invasive plant species has been contained[JW5][C6] and thought given to deer control. Lastly, one of the potentially under-rated benefits of keeping this forest intact is that the actual amount of forest cover for the fauna of the areas is nearly doubled in size, due to the adjacent parcel of forest to the east of the property.

Conclusion:

The emphasis of the environmental review of LaSalette Park is to form a farm/feasibility/farmstead restoration master plan for the town. As such, relative to the overall report, which aims to address those issues, the focus of section is to raise awareness of current site conditions and objectively present possibilities pertaining to the management of the forest resources of the site.

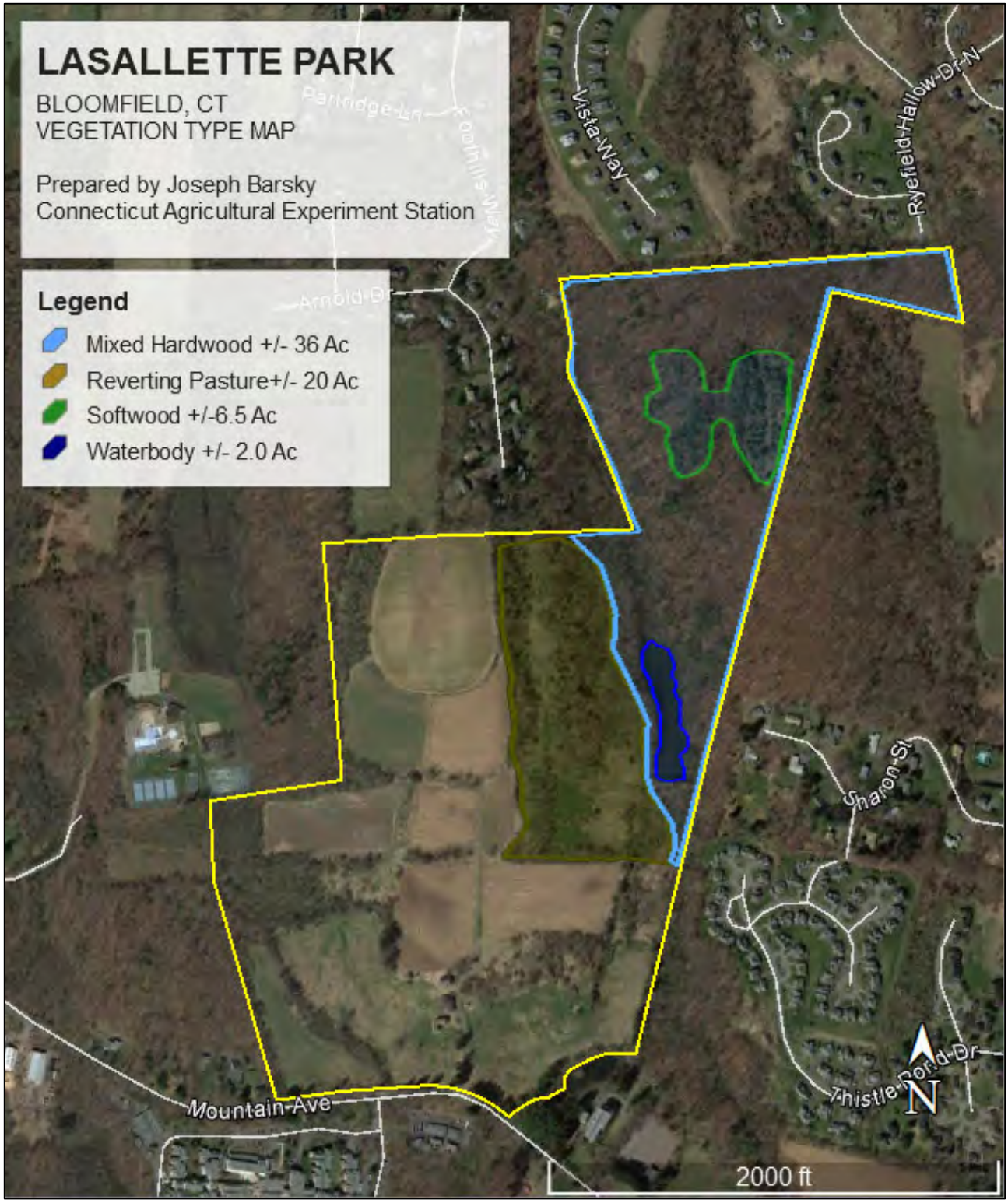


Exhibit 1 (Vegetation cover map)

Exhibit 2 (reverting pasture)

Exhibit 3 (Mixed hardwood stand. Note vegetation browse line on hemlock trees)

Exhibit 4 (Softwood stand)

WILDLIFE HABITAT AND RESOURCES

Highlights

- The fields at LaSalette Park provide important habitat for wildlife due to their current state of reverting to native plants.
- The area of thick shrubs between the fields and the pond also provide important wildlife habitat.
- These sites are the most critical habitats occurring at LaSalette Park (Figure 1).

Figure 1. This area of LaSalette Park, outlined in yellow, contains fields that are reverting to wildflowers and shrubs, and provides the most valuable potential for wildlife habitat.

Summary

LaSalette Park contains important wildlife habitats. Fields that had been used for agriculture are now reverting to native wildflowers and shrubs. This reverting-field habitat is critical for some of Connecticut's wildlife such as blue-winged warblers, bobolink and American kestrels. These birds have become much less common because of the loss of this type of habitat. Reverting fields, also known as early successional habitat (because they occur early in the process of forest succession), were historically created or maintained by natural disturbances such as fire and beaver flooding. Grasslands, old fields, shrublands and young forest are examples of early successional habitats. Today, because these disturbances are controlled, these habitats and many of the species that depend on them have become uncommon. LaSalette Park has a unique opportunity to attract and help sustain many species that are otherwise disappearing from much of Connecticut.

Overview

A site walk was conducted at LaSalette Park on December 10, 2014 as part of the Environmental Review Team. A previous visit to the site by this team member had been made on October 27, 2014. LaSalette Park has great wildlife potential due to the former agricultural fields on the site that are now reverting to native plants. This is important habitat for many of Connecticut's wildlife species. This type of habitat has become rare in Connecticut, thus the animals that depend on this habitat have also become rare. Shrubland habitat and the species that depend on it have also become rare. The Park contains a thick shrubby area between the fields and the pond. Due to the existence of these habitats at this site, LaSalette Park offers a great opportunity to support a variety of species that are otherwise declining throughout Connecticut.

A complete inventory of wildlife species on the property is beyond the scope of this report as it would require observations throughout the year with a focus on the spring nesting season. However, a reasonable assessment of the kinds of wildlife that may be expected is possible, as well as recommendations for enhancement of available habitats. When considering wildlife habitat, there are four components that are essential: food, water, cover and adequate space. The required types and amounts of these components vary by wildlife species.

Please note that although a number of plant and animal species are named in this report, it does not represent a thorough survey.

Background

LaSalette Park has excellent wildlife potential. Abandoned farm fields are important habitats for many species of birds as well as other forms of wildlife such as butterflies and box turtles. The western portion of the property contains 11 fields totaling approximately 44 acres, each one between 1 and 8 acres (Figure 2). The northernmost field is the largest field at about 8 acres. Two 3-acre fields abut this 8-acre field. Ground-nesting bird species such as red-winged blackbird, song sparrow and bobolink, a species of special concern in Connecticut, will use grasslands of this size. The additional fields to the south of these fields add to the value of this habitat. Bigger patches of habitat support greater diversity and greater numbers of species. Another important patch of habitat occurs along the slope from the upper field down to the pond (Figure 3). This area has dense shrubby habitat that is important for a number of wildlife species. Brown thrasher, a species of special concern, depends on this thick cover to survive. These are the most important areas to protect and manage for wildlife. Both shrubland and grassland habitats have become extremely rare, as have the species that depend on these habitats. LaSalette Park has the potential to support many of these species.

The Connecticut Outdoor Recreation Fund provided funding for the purchase of this property in 1991. Properties purchased with these grant funds may be used for open space and recreation. Due to the potential to attract a variety of wildlife, a strategically placed trail would offer a great opportunity for the residents of Bloomfield to enjoy wildlife that they would not otherwise have the opportunity to see.

Fig**ure 2.** Former agricultural fields of LaSalette Park. Abandoned farm fields provide habitat for some of Connecticut's disappearing species. Numbers represent approximate acreage.

Figure 3. Four-acre patch of valuable shrubland habitat at LaSalette Park. Birds such as brown thrasher, a species of special concern, depend on thick shrubland habitat to survive.

Resources

Early Successional (Open) Habitats

Succession is the natural process where one group of plants is replaced by another group of plants over time. For example, grasses and wildflowers may be replaced by shrubs and trees. Ultimately, a final stage, such as mature forest, may be reached if the process is not set back by a disturbance such as fire or flooding. Early successional habitats include grasslands, old fields, shrub thickets and young forest. These areas are critical to a number of wildlife species, many of which are listed as endangered, threatened or of special concern in Connecticut. They are rare and declining in Connecticut and throughout the Northeast due to development, natural succession into mature forest, and overgrowth with invasive species.

Historically, this type of habitat was created and maintained by fire, beaver work, intense weather events and agricultural activities. It was present in a small but critical amount prior to European colonization and reached a maximum during the 19th century. Until the mid-20th century, small family farms still provided diverse wildlife habitats including pasture, abandoned old fields, shrublands and woodlots. Farming practices allowed for wildlife use as fields were mowed less frequently and often some fields were left fallow. Following World War II, the rapid loss of wildlife-friendly early successional habitat began with the development of suburbia, the abandonment of many farms that returned to forest, and the concentration and intensification of farming activities.

Open habitats, such as those present at LaSalette Park, are considered highly valuable. There is a unique opportunity to manage this area to optimize its habitat value. As for any habitat, larger patch size allows for greater wildlife diversity and a higher survivorship. Maintaining the current area of early successional (open) habitat would be the most useful for wildlife.

Figure 4. View from the upper field at LaSalette Park. These fields provide food and cover that many wildlife species depend on. White-throated sparrows, song sparrows and juncos use these fields in the fall and winter. A number of species, including eastern bluebird, tree swallows, barn swallows, eastern kingbird, red-winged blackbirds and a variety of butterflies are expected to use these fields in the spring and summer.

Early Successional (Open) Habitats at LaSalette Park

Grassland/Old Field. The former agricultural fields at LaSalette Park offer habitat that is suitable for grassland species such as red-winged blackbird, eastern bluebirds, tree swallows, American kestrel and many species of butterflies. These are all species that would be expected to use the reverting fields of the Park. White-throated sparrows, juncos and song sparrows use the cover of these fields in the fall and winter and feed on seeds of grasses and wildflowers.

These fields may also support bobolinks. Bobolinks require grassland habitat of approximately 10 acres or more in which to breed. In addition to being a species of special concern, Connecticut Audubon lists bobolink in their "top 20 conservation priority species". These birds are disappearing due to the loss of grassland habitat in which to breed.

Monarch butterflies, whose populations are plummeting due to loss of habitat, would also benefit from these fields. The caterpillar of the monarch butterfly feeds only on milkweed. Milkweed is growing in and along the fields. Planting more would be a good practice to help the species survive.

The fields are currently dominated by horseweed, a native plant which commonly grows in the first year after a field has been abandoned. It is quickly outcompeted by other types of plants. Other native plants that are growing in these fields include milkweed, New England aster, Pennsylvania smartweed (Figure 5), common evening primrose and several species of goldenrod. Staghorn sumac, a native shrub, is also growing in the field. Larger patches of habitat allow for greater wildlife diversity and higher rates of survival. Maintaining all of these fields for wildlife habitat would be the most useful for the species that are expected to be using the site.

Figure 5. Red fall color of Pennsylvania smartweed, a native plant growing in the fields at LaSalette Park.

Grassland and old field habitats, such as abandoned agricultural fields, offer some of the best wildlife viewing opportunities. Ground-nesting birds such as red-winged blackbirds and bobolinks can be seen fighting

over territories above the grasses. Aerial feeders such as tree swallows, barn swallows and chimney swifts can be seen diving for insects. Hawks can be seen soaring and looking for prey. Butterflies can be seen fluttering from wildflower to wildflower and dragonflies can be seen darting back and forth catching smaller insects. Providing a place where residents can witness these activities offers a direct connection to the wild instead of viewing it through a screen. Witnessing these activities creates a sense of wonder and a chance for discovery, something that is necessary for the development of all children.

These habitats are also essential for pollinators. Pollinators are responsible for one out of every three bites of food that we take. But many native bee species have been declining due to loss of habitat and to pesticides. Keeping grassland and old field habitats, like those at LaSalette Park, help to keep these beneficial insects from disappearing.

There has been discussion about offering the use of these fields for agricultural purposes. The dedication agreement under the Connecticut Open Recreation Fund, which provided funds for the purchase of this property, does not allow leasing for commercial agriculture. It would, however, allow occasional mowing of the fields. Some mowing would be required to keep these fields from reverting to forest. Mowing after the nesting season would keep the fields in an open and natural state and allow birds to breed, but would also provide an agricultural product in the form of mulch hay. Mowing after the breeding season is essential as mowing too early would destroy nests as many birds nest directly on the ground.

The 7-acre field on the west side of the house and abutting Mountain Avenue has wet soil and is dominated by reed canarygrass, an invasive plant that grows is moist areas. The wildlife value of this field has been diminished due to the conversion of this field to a dense carpet of this non-native plant. This plant had historically been used as hay. However, since it grows in moist areas, mowing equipment usually cannot get to it until the later in the season when the soil is drier. By this time the plant may have gone to seed. If processed as mulch hay, the seeds of this invasive plant may end up getting dispersed to other areas. Native wet meadows are highly valuable wildlife habitats. Given sufficient resources, there is certainly potential to restore this field to a native wet meadow.

Shrubland. The path leading from the upper field down to the pond goes through some valuable shrubland habitat. Species like brown thrasher, a species of special concern, gray catbird and eastern towhee depend on thick, dense, shrubby habitat such as this. These shrubs provide thick cover for these birds to hide their nests in. This is also the type of habitat required by the New England cottontail rabbit which has nearly disappeared due to loss of habitat. The blue-winged warbler, whose population centers around Connecticut, depends on this type of habitat as well. The proximity to the open fields and to the pond adds to the value of this shrub habitat. Yellow warblers and common yellowthroats would be expected to nest in the shrubs here. These birds breed in shrubby areas adjacent to wetland habitats.

Native shrubs such as red-osier dogwood, blackberry and raspberry are growing at this site. These are important species, not only for providing cover for birds, but also for providing food as these shrubs are host plants (plants that caterpillars feed on) for many species of butterfly and moth caterpillars. Birds depend heavily on caterpillars and other plant-eating insects as their primary source of food in the warmer months. The native shrubs growing at this site also provide nectar for pollinators. Butterflies, beetles and bees can be seen feeding at the flowers of blackberry, raspberry and dogwood. The berries are also eaten by birds to supplement their diet of insects.

It was mentioned that there is interest in developing this area into a disc golf course. Development of this field would destroy this valuable habitat and eliminate the shrubland species that depend on it. To protect this critical habitat, other options for such development should be explored.

Expected species. Many species would be expected to use the early successional (open) habitats of LaSalette Park. Birds that would be expected to use these habitats include American woodcock, wild turkey, red-tailed hawk, chimney swift, ruby-throated hummingbird, eastern kingbird, tree swallow, barn swallow, eastern bluebird, gray catbird, northern mockingbird, cedar waxwing, yellow warbler, blue-winged warbler, common yellowthroat, red-winged blackbird, Baltimore oriole, song sparrow, white-throated sparrow, dark-eyed junco, northern cardinal, rose-breasted grosbeak, indigo bunting and American goldfinch. Many species of butterflies would also be expected to use these habitats including monarch, great-spangled fritillary, silver-spotted skipper, eastern tiger swallowtail, black swallowtail, viceroy, eastern tailed blue, spring azure, American copper, pearl crescent, painted lady, red admiral, sulphur and a variety of grass skippers. Many other species of beneficial and interesting insects such as dragonflies, damselflies, beetles and native bees would also be expected to use these habitats.

These species must have early successional habitats to survive. They cannot exist in forest habitats.

Figure 6. Blue-winged warbler, eastern bluebird and yellow warbler would be expected to breed at LaSalette Park if the reverting farm fields are maintained in their current states of grassland/old field and shrubland habitat.

Note: Grasslands consist of grasses and wildflowers that are allowed to grow throughout the season. Frequently mowed areas such as lawns and recreational fields are not grassland habitats.

Wetland Habitat. A narrow two-acre pond lies at the bottom of the slope between the upper fields and the forested section of the park. Native plants such as gray birch, paper birch, red-osier dogwood, elderberry, highbush-cranberry and speckled alder grow along the edge of the pond. Spring peepers would be expected to breed in this pond. The pond and the stream that feeds it increase the value of the surrounding habitats. Due to the proximity of the pond to the shrubland habitat, yellow warblers and common yellowthroats would be expected to use this area. These birds require shrubby areas adjacent to wetland habitats for nesting. The stream that feeds this pond is a headwater stream. Headwater streams are extremely important to protect due to their role in supporting a variety of animal life and in protecting the quality of the water downstream. The source of this stream appears to be a seep at the northern edge of the property. It would be expected that the surrounding development would be impacting the hydrology and water quality of this stream.

Forest Habitat. The northeast portion of the park contains approximately 35 acres of forest habitat. Much of this area is dominated by black birch and beech. A small stand of hemlock grows along the slope on the east side of the pond. Small understory trees and shrubs are lacking except for non-native invasive Japanese barberry and winged euonymus (burning bush). Lack of understory is an indication of overbrowsing by white-tailed deer. Overbrowsing by deer reduces or eliminates both food and cover for many forest bird species. Standing dead trees (snags) are important elements of this section as many forest species are dependent on tree cavities for nesting and roosting. Fallen trees also provide habitat for salamanders and a variety of invertebrates.

Although the lack of small trees and shrubs in the understory reduces the value of this habitat for wildlife, the small stream adds to its value, providing a source of water and moist soil for supporting a diversity of plant life and insects. Many common species would be expected to use this area – chickadees, titmice, white-breasted nuthatches, blue jays, downy woodpeckers and flickers. All of these birds, except the blue jay, depend on tree cavities for nesting. They also depend on an abundance of insects during the breeding season. A variety of caterpillars would be expected to feed on the leaves of the trees in this area, providing an important source of food for these birds. Louisiana waterthrush and wood thrush might also be expected to use this area. Louisiana waterthrush will make their nests on the ground along the edge of a stream. Wood thrush also nest on or near the forest floor. Because of this, wood thrush and other birds that nest on or near the ground have become much less common as they have become more vulnerable to predators, especially domestic cats and dogs.

Invasive Species. Non-native invasive plants were found throughout the property. Multiflora rose, Asiatic bittersweet, autumn olive and mugwort are growing in the fields and in the shrubland habitat. Reed canarygrass is growing in the lower field west of the house. Morrow's honeysuckle is growing at the edge of the pond. Japanese barberry and burning bush are growing in the forest. These plants outcompete native plants. Plant diversity is reduced because a few invasives grow at the expense of many native plants. Non-native plants do not provide food for many of our plant eating insects, further reducing overall diversity. This means less food for the birds. No insect food, no insects. No insects, no birds.

Recommendations

Wildlife Surveys. Many species of wildlife that may be using the park in the spring and summer would not have been present during the fall site visit. Therefore, it is recommended that wildlife surveys be conducted during the spring and summer to get a more accurate account of actual species use and determine if any rare or listed species are using the property.

Grassland/Old Field. Maintaining all of the existing grassland and shrubland habitat would be the most beneficial to wildlife. In order to maintain these early successional habitats, occasional mowing is required to prevent these fields from growing up into forest. Mowing should be delayed until August 1st in order to protect nesting birds. As many species still find food and cover in these fields over the winter and during migration, and since many insects, such as Baltimore butterfly pupae, overwinter in these fields, the best course of action would be to only mow invasive plants and any trees encroaching on the field habitat. This would leave food and cover for wildlife, allow native grasses and wildflowers to go to seed and would not

destroy overwintering insects.

Another option, although not as beneficial to wildlife, would be to mow the fields for mulch hay, again delaying mowing until August 1st. Although this method is not as valuable to wildlife as the first option, it is still a viable option for maintaining early successional habitat. To reduce impacts, fields could be mowed on a rotational basis so that each field would be mowed every other or every third year. Alternately, the lower fields could be mowed for mulch hay while the larger upper fields could be managed more for the benefit of wildlife.

Mowing invasive plants helps to keep them from taking over, however these invasives will resprout after being mowed. More effective methods for removing invasive plants include pulling, burning and herbiciding. Planting native wildflowers, especially milkweed, and native grasses in place of the invasives would be beneficial to wildlife.

Installing nest boxes would provide nest sites for bluebirds and tree swallows. While nest boxes can provide critical nesting and even winter roosting sites for birds, they can also increase vulnerability to predation or competition by the non-native invasive house sparrow if not designed and maintained properly. Boxes should be inspected regularly for damage, insect infestations and habitation by nuisance species. European house sparrows are common nest competitors for bluebird boxes. House sparrows are considered a nuisance and should be discouraged. Predator guards on nest box mounting posts are important to prevent predation by raccoons, snakes or domestic cats. The CT DEEP Wildlife Division has information on nest box design and maintenance for bluebirds at http://www.ct.gov/deep/cwp/view.asp?A=2723&Q=325966 .

In order to protect the wildlife of LaSalette Park, it is recommended to maintain all of the fields as early successional habitat. However, if the demand for a disc golf course cannot be met at another site that has already been developed for active recreation, then selection of a site at LaSalette Park must be considered carefully. Any such development would impact wildlife. It may be best to keep such development closer to the road so as to maintain the upper fields as an unbroken patch of habitat and reduce the disturbance to wildlife.

Shrubland. As with grasslands, shrublands must be managed in order to prevent them from growing up into forest. The shrubland habitat at LaSalette Park contains several native shrubs including red-osier dogwood, blackberry and raspberry. These are very important plants that provide food for a wide variety of caterpillars. These caterpillars are an extremely important source of food for the birds. There are also non-native invasive shrubs at this site: multiflora rose and autumn olive. These plants need to be removed. The best method of removal is to cut the larger ones at the end of the summer and immediately paint the stumps with herbicide, and to dig up the roots of the smaller ones so that they cannot resprout. Individual trees that begin to grow taller than the native shrubs can be cut as needed. The edges of the shrubland should be maintained as this is where taller trees are most likely to encroach upon the shrubland habitat. The reference Managing Grasslands, Shrublands and Young Forests for Wildlife A Guide for the Northeast, is available on line on the DEP website www.ct.gov/dep or in the DEP bookstore http://www.ctdepstore.com/main.sc and may be helpful in providing more information on habitat management.

Forest. Invasive plants and overbrowsing by white-tailed deer are the biggest threats to the forest habitat

at LaSalette Park. Japanese barberry and burning bush should be removed from the forest understory. If possible, hand pulling or digging is an effective method. Burning has also proved to be effective in controlling barberry in the understory. All standing dead trees (snags) should be left if safe to do so. These snags are vital to many species that make their nest only in tree cavities.

Should a timber harvest be conducted, leave adequate undisturbed area around wetlands. Also leave snags, den trees and downed tree tops for wildlife cover throughout the forest. Tops of trees should remain on the ground, scattered or in brush piles, to provide cover for small mammals, birds, amphibians and reptiles. Up to 30% of all small mammals and 50% of amphibians and reptiles use downed branches and rotting logs for some or all of their life cycle. These materials also return essential nutrients to the soil upon decomposition. Unless posing a hazard near a trail, snags (standing dead trees), and standing or downed hollow trees should be left in place to provide essential insect food and potential nest and den sites for wildlife. Live trees greater than 15 inches in diameter at breast height (dbh) are potential den trees, and should be left at least one per acre.

Invasive Plants. A number of non-native invasive plants were found on the property:

Mugwort (perennial) is growing in the fields and should be dealt with immediately. This plant can take over entire fields in a short amount of time. Pulling up the entire plant by the roots before the plants go to seed is an effective removal method for smaller patches of mugwort. For larger patches, herbiciding before the plants go to seed may be a more desirable method of control.

Multiflora rose (shrub), Asiatic bittersweet (vine), and autumn olive (shrub) are also growing in the fields. These woody plants can be dug up by the roots when smaller. For larger plants, the most effective treatment is to cut the plants close to the ground in late summer or early fall and immediately paint the stumps with herbicide.

Morrow's honeysuckle (shrub) is growing near the pond. Follow recommendations for multiflora rose.

Reed canarygrass (perennial) has invaded the lower field on the west side of the farmhouse. To control, mow in mid-June and again in October to reduce seed and encourage native species. Fall application of appropriate herbicide may also be effective.

Japanese barberry (shrub) and burning bush (shrub) are growing in the forest understory. Follow recommendations for multiflora rose. Flame-weeding is also effective in controlling Japanese barberry.

Other Considerations: Trails and Education

Since there is a wealth of wildlife and wildlife habitat on this property, it would be worth considering the installation of interpretive signs to explain the importance of various habitats, the wildlife that use them and management practices in place. An interpretive trail should be routed so as to minimize disturbance to wildlife and habitats. A trail at the edge of the field would create less disturbance to ground-nesting grassland birds than a trail through the middle of the field. Installing signs may be a good project for a youth or scout group.

Since ground-nesting birds are expected to occur throughout LaSalette Park, it is imperative that dogs be leashed at all times while in the park.

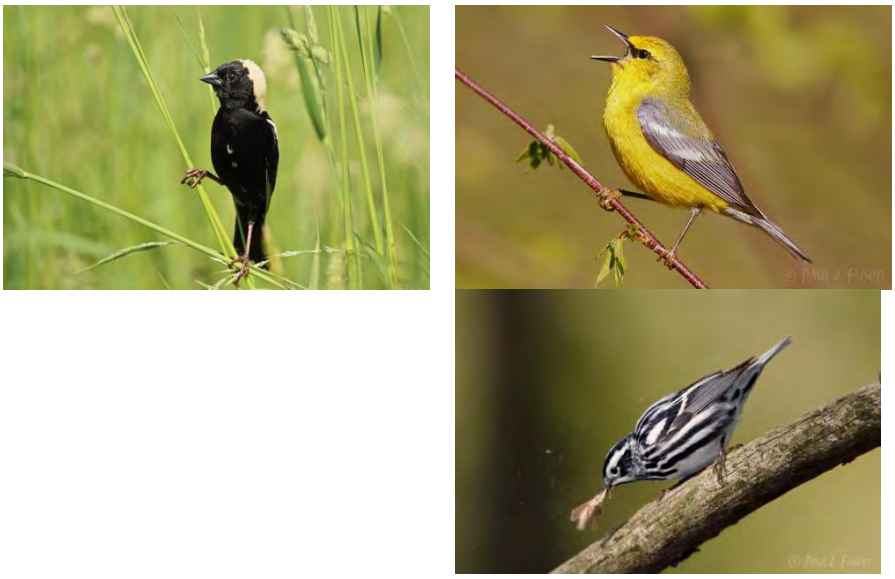


Figure 7. Some of the birds that are expected to use LaSalette Park make their nests on the ground. Because of this, it is imperative that a "No dogs off leash" policy is implemented as it would take only one dog one time to destroy the nesting efforts of an entire season.

Summary of Recommendations

LaSalette Park is a unique and highly valuable property for wildlife. Without an exhaustive plant and animal inventory of the property, the primary recommendations for managing this land for the benefit of wildlife are:

1. Retain maximum acreage for grassland/old field habitat. Bigger patches of habitat support a greater variety of species.
2. Retain all existing shrubland habitat.
3. Delay mowing of fields until after August 1st to allow completion of the nesting cycle for ground-nesting grassland birds.
4. If possible, mow only non-native invasive plants and any trees that are encroaching into the fields or shrubland habitats.
5. Place trails where they will minimize disturbance. A trail along the edge of a field will create less disturbance to grassland ground-nesting birds than a trail through the middle of a field. A trail placed away from a stream will cause less erosion than a trail place along the edge of a stream.
6. Install nest boxes with predator guards. Inspect, repair, and clean nest boxes regularly to prevent parasites and discourage use by non-native species.

7. Conduct a full inventory of plant and animal species using the property at different times of the year to refine management objectives.
8. Implement a “no dogs off leash” policy.
9. Should a timber harvest be conducted, leave adequate undisturbed area around wetlands, as well as snags, den trees and downed tree tops for wildlife cover throughout the forest.
10. Remove invasive plant species from fields and forest understory, and replant with native species.
11. Consider interpretive signs explaining the various habitats on the property, their importance to wildlife, and management practices in place.

THE NATURAL DIVERSITY DATA BASE

The Natural Diversity Data Base maps and files regarding the project area for LaSalette Park have been reviewed. According to our records there are known extant species that occur either within or in close proximity to this property. Following is a list of species. Please be advised that this is a preliminary review and not a final determination. A more detailed review will be necessary to move forward with any subsequent environmental permit applications submitted to DEEP for the proposed project. This letter cannot be used or submitted with your permit applications at DEEP. This preliminary assessment is good for one year.

Natural Diversity Data Base information 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 substitutes 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. The result of this review does not preclude the possibility that listed species may be encountered on site and that additional action may be necessary to remain in compliance with certain state permits.

Please contact Dawn McKay if you have further questions at (860) 424-3592, or dawn.mckay@ct.gov.

Species List for NDDB Request

Scientific Name	Common Name	State Status
Invertebrate		
Speyeria atlantis	**Atlantis fritillary butterfly**	**Threatened**
Vertebrate		
Falco sparverius	**American kestrel**	**Threatened**
Heterodon platirhinos	**Eastern hognose snake**	**Special Concern**
Lasiurus cinereus	**Hoary bat**	**Special Concern**
Terrapene carolina carolina	**Eastern box turtle**	**Special Concern**
Thamnophis suritus	**Eastern ribbon snake**	**Special Concern**
Toxostoma rufrum	**Brown thrasher**	**Special Concern**

CT DEEP fact sheets for the American kestrel, Eastern hognose snake, Eastern box turtle, and Eastern Ribbon snake may be found in the Appendix.

Atlantis fritillary butterfly - http://www.massaudubon.org/learn/nature-wildlife/insects-arachnids/butterflies/find-a-butterfly/(id)/36

Hoary bat – Photo by Jennifer Linehan –nps.gov
http://www.nps.gov/prsf/learn/nature/hoary-bat.htm

Brown thrasher - http://state-birds.findthedata.com/l/29/Brown-Thrasher
https://www.audubon.org/field-guide/bird/brown-thrasher

PARK RIVER WATERSHED COMMENTS

The LaSalette Park is within the northern reaches of the Tumble Brook watershed, which is a sub-watershed within the North Branch Park River watershed. Areas of the property along the northern rim of the Tumble Brook sub-watershed have extraordinary views. The North Branch Park River watershed is a 28.6 square-mile basin within the Park River regional watershed, and the greater Connecticut River watershed.(see North Branch Park River Subwatershed map) Four major tributaries– Beamans Brook, Wash Brook, Filley Brook, and Tumble Brook – drain through the Town Bloomfield and converge to form the North Branch of the Park River. The LaSalette property includes two ponds that drain into intermittent streams south, under Route 178, to converge into a northern tributary of Tumble Brook.

The North Branch Park River Watershed Management Plan was completed in July 2010 according to the US EPA 'Nine Element' planning process in conversation with municipal staff, neighborhood non-profits, homeowners, and guidance from the Connecticut Department of Environmental Protection, (now the Department of Energy and Environmental Protection or CT DEEP). The project team, led by Fuss & O'Neill, Inc., included New England Environmental, Inc., Farmington River Watershed Association, and Park River Watershed Revitalization Initiative. The Plan goal is to reduce the impacts of human development that have impaired water quality in the North Branch, and that are increasingly degrading water quality in its tributaries – yet to encourage environmentally sensitive urban-suburban development of the Park River regional watershed.

The plan is posted on the CTDEEP website:
http://www.ct.gov/deep/cwp/view.asp?a=2719&q=379296&depNav_GID=1654
The project website, www.NorthParkPlan.net, posts background research such as review of land use regulations and municipal policies, an assessment of baseline watershed conditions, and detailed field surveys. Maps developed during the North Branch Park River Watershed Management Plan, which include LaSalette Park, can be found project website: http://www.northparkplan.net/?page_id=10

The primary plan recommendations are as follows:

- Revitalize and conserve landscapes that benefit water quality
- Protect and restore habitat to increase biodiversity
- Encourage smart growth land use practices that protect water resources
- Strengthen watershed knowledge networks and K-12 learning programs

Interest in restoration of the LaSalette property as a farm can be compatible with the North Branch Park River Watershed Management Plan. Note however that emphasis on **only** a farm for **immediate** business viability may minimize the opportunity to restore diversity and future property prosperity. The farm feasibility farmstead restoration plan ought to study restoration of ecological health and diversity, along with native food sources as well as ways in which activities and events can increase farmstead community value and environmental resiliency in a changing climate.

Conventional high-yield intensive farming has contributed to climate change and has had serious impacts on natural resource diversity and on water quality. The Town of Bloomfield has an opportunity to transition this property from a conventional 20th century farm into a demonstration of diverse approaches to

agriculture oriented towards 21st century climate change adaptation. Focus on farm character and crop quality, rather than quantity, will serve the long-term value of LaSalette. Small farms have already diversified their operations to attract a dedicated community of customers that stabilize farm business viability. Farm-to-table meals, cooking classes, farm stays, weddings, and u-pick produce are just a few of many activities that increase business on small farms today. New farm programming concepts based on future environmental and community health could further enhance development of the LaSalette farmstead as a unique municipal and regional destination.

Leasing the land to a single farmer, who may have a financial need to concentrate on increasing crop yield as soon as possible, could result in monoculture plantings as well as application of fertilizers, pesticides, and herbicides. In order to increase crop yields, conventional 20th century farming practices tend to plow as much land as possible, which will further reduce already minimal wetland and vegetative buffers needed to protect water quality at the intermittent streams and the southern pond. Vegetative buffers also provides critical habitat for wildlife and migratory birds.

The Town of Bloomfield could openly support innovative farming practices that can inform future local growers. Emerging environmentally-friendly agricultural practices such as edible landscaping could increase support for ecological restoration and healthy local food resources. For example, a network of walking trails could become passages lined with diverse native food plants such as Paw-paw trees, heritage grains, fiddlehead ferns, mushrooms, blueberries, and resilient Chestnut trees. Non-native species that have invaded steep slopes can be replaced by managed edible landscapes.

Restoration of 100-500 foot buffers of native vegetation around the on-site ponds and water courses could channel new, creative, environmentally-sensitive approaches to land management. Although conventional agricultural field land area would be reduced, the Town can enhance the future community value and ecosystem service benefits of the landscape by taking time now to address the challenges of climate change adaptation. Grain storage and handling techniques that ensure high-quality identity preserve crops could also serve as an educational resource for area farmers. Other strategies that could be employed at the LaSalette farmstead include sustainable water management techniques such as rainwater harvesting for irrigation re-use and low impact stormwater management practices such as rain gardens, biofilters, and vegetated buffers.

The design process would begin by gathering input from individuals working to balance agricultural practices with healthy communities: organic growers, community-supported agricultural programs, health professionals, and environmental scientists. This long-term approach to farmstead planning can cultivate community engagement and appreciation for the LaSalette property as a public amenity of environmentally-sensitive agricultural practices that can improve water quality.

Resources:

http://www.southkentschool.org/center-innovation
The mission of the Center for Innovation is to teach students sustainability, resilience, and wholeness through the spheres of Sustainable Earth, Sustainable Design, and Sustainable Community.

http://www.farmbasededucation.org/page/farmbased-education-programs

http://www.beaconfoodforest.org/
The goal of the Beacon Food Forest is to design, plant and grow an edible urban forest garden that inspires our community to gather together, grow our own food and rehabilitate our local ecosystem.

Join us to improve public health by regenerating our public land into an edible forest ecosystem. We work to reduce agricultural climate impact, improve our local food security, provide educational opportunities, and celebrate growing food for the benefit of all species.

http://www.newpondfarm.org
Connecting people with the land that enriches and sustains us all.

http://sustainablefood.yale.edu
On the farm, in the classroom, and around the world, the Yale Sustainable Food Program grows food literate leaders.

Food offers us the opportunity to engage with the world around us. By gathering people around a common table, the Yale Sustainable Food Program encourages interdisciplinary learning and creative as well as critical thinking. It inspires big questions and crucial research that addresses our pressing need for more sustainable food systems.

http://www.madisonct.org/bauer
Madison's agricultural and environmental center.

http://www.flandersnaturecenter.org/flanders_places/farm_&_garden.html

Sanctuary, farm and community garden

http://www.wakemantownfarm.org/

The Westport Wakeman Town Farm Sustainability Center is an organic demonstration homestead dedicated to serving the Westport Community. The Farm is a model facility created to educate the community with local healthy food production, responsible land stewardship, sustainable practices and community service orientation.

Activities include educational workshops, student internships, hosting after school environmental clubs, children's summer camp programs, growing fruits and vegetables, animal husbandry, providing a farm stand and CSA pickup location.

http://www.amblerfarm.org/

The mission of Friends of Ambler Farm (Wilton, CT) is to celebrate our community's agrarian roots through active learning programs, sustainable agriculture, responsible land stewardship, and historic preservation.

Our vision is a restored and self-sustaining Ambler Farm that provides our community with a place to connect with the land and the Town's agrarian past through hands-on educational programming, sustainable farming in harmony with nature, animal husbandry, and community activities.

http://www.boulderknollfarm.com/

We provide healthy, local vegetables and fruit to 68 shareholders, local soup kitchens, and a New Haven restaurant. Education is a central component and an essential element in the vision of the Friends of

Boulder Knoll, the farm's sponsoring organization. Our goal is to emphasize essential links between people, plants, and the earth, to develop interdisciplinary learning, and to promote environmental responsibility. We believe that exposing the community, especially its youth, to the wonders, importance and value of agriculture, conservation, and outdoor recreation is critical to fostering future stewards of the environment. We run the farm in a sustainable manner. We use solar electricity and do most of the bed preparation, planting, cultivating and some mowing with hand tools. We consider and incorporate permaculture practices. The farm is not certified organic, but we adhere to organic growing standards and have signed then CTNOFA Farmer's Pledge, a commitment to farming, marketing and farm management in accordance with sound ecological and economic principles.

http://www.hilltopfarmsuffield.org/

Non-profit and town owned in Suffield. What can you learn on a farm? Truth be told? There's ***nothing*** you can't learn on a farm. Caring for the land. Growing food. Using tools. Building and fixing things. Being responsible. Creating. Planning. Leading. Recycling. Respecting nature. Working in teams. You name it, you can learn it on a farm. That's the vision of The Friends of the Farm at Hilltop — ***to help people connect with the land and learn from it***. We see a vibrant learning center at Hilltop operating year round with summer camps, school group visits, seminars and special events. We see gardens, crops and classes. We see meaningful and fun programs on farming, gardening, architecture, photography, history, nature and caring for the land. We see young and old and in-between. We hear laughter. And we see people coming back for more. What can you learn on the farm? ***The possibilities are endless***.

http://dpnc.org/coogan-farm-maps/

The Coogan Farm and Heritage Center in Mystic.

http://edibletrails.org/

Creating public edible forest gardens in Northwest Lower Michigan.

http://www.yourhoustonnews.com/fort_bend/news/missouri-city-opens-first-ever-edible-arbor-trail/article_a48dbe2a-02b1-5bce-b712-c34da7ae62cf.html

Article on edible trail in Texas.

http://triblive.com/news/allegheny/7950917-74/edible-trail-park#axzz3Y2wAmlH5

Article on edible trail in Pennsylvania.

https://www.stonebarnscenter.org/

Stone Barns Center for Food and Agriculture is on a mission to create a healthy and sustainable food system that benefits us all. On 80 acres in Westchester County, just 25 miles north of New York City, we operate a highly diversified, four-season farm and an education center that hosts over a hundred thousand visitors each year. As a nonprofit, we work to: Experiment with and improve sustainable farming practices. Train beginning farmers in resilient, regenerative farming techniques. Help children discover the sources of their food while preparing them to steward the land that provides it. Increase public awareness of healthy,

seasonal and sustainable food. Our food system is on an unsustainable course: resource depletion, environmental degradation, epidemics of disease and obesity, food that doesn't represent the true costs of its production. We are working to change the way America eats and farms by inspiring people, engaging leaders and the public, developing practices in resilient agriculture and driving choices that benefit human health and the environment. Join us!

Stone Barns Center for Food and Agriculture is a 501(c)(3) nonprofit organization.

http://www.forestsforwatersheds.org/reduce-stormwater/

Information on using trees to help control stormwater runoff.

http://www.crjc.org/buffers/Buffers%20for%20Habitat.pdf

Connecticut River Watershed riparian buffer information.

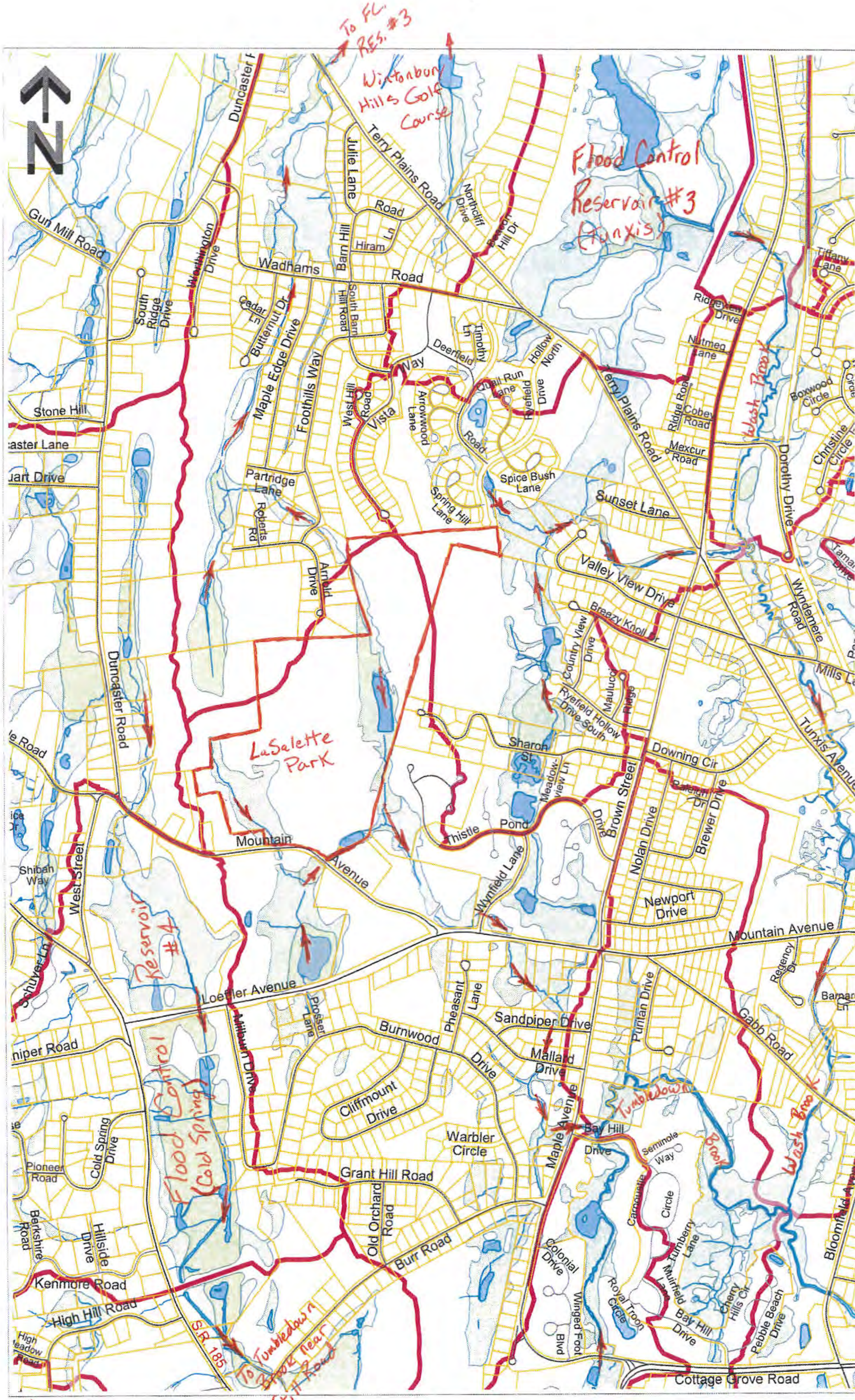
http://www.ct.gov/deep/lib/deep/water/watershed_management/wm_plans/lid/what_is_a_vegetated_riparian_area.pdf

Brochure with an excellent list of resources.

http://nemo.uconn.edu/

http://clear.uconn.edu/

Resources for natural resource and land use planning and management.


N
To FL. RES. #3
Wintonbury Hills Golf Course
Flood Control Reservoir #3 (Tunxis)
LaSalette Park
Reservoir #4
Flood Control (Cold Spring)
Wash Brook
Tumbledown Brook
To Tumbledown Brook near Still Road
S.R. 185
Duncaster Road
Gun Mill Road
Washington Drive
South Ridge Drive
Wadhams Road
Julie Lane
Barn Hill
Hiram
Terry Plains Road
Northcliff Drive
Beacon Hill Dr
Butternut Dr
Cedar Ln
Maple Edge Drive
Foothills Way
West Hill Road
Vista Way
Deerfield Road
Timothy Ln
Arrowwood Lane
Quail Run Lane
Ryefield Hollow Drive North
Stone Hill
Partridge Lane
Roberts Rd
Arnold Drive
Spring Hill Lane
Spice Bush Lane
Sunset Lane
Ridgeview Drive
Nutmeg Lane
Ridge Road
Cobey Road
Mexcur Road
Dorothy Drive
Boxwood Circle
Christine Circle
Tiffany Lane
Valley View Drive
Breezy Knoll Dr
Country View Drive
Mauluco Ridge
Ryefield Hollow Drive South
Wyndemere Road
Mills Lane
Tunxis Avenue
Sharon St
Meadowview Ln
Downing Cir
Brown Street
Nolan Drive
Brewer Drive
Thistle Pond Drive
Mountain Avenue
Wynfield Lane
Newport Drive
West Street
Shibah Way
Schuyler Ln
Loeffler Avenue
Prosser Lane
Milburn Drive
Pheasant Lane
Sandpiper Drive
Puritan Drive
Regency Dr
Barnard Ln
Gabb Road
Burnwood Drive
Mallard Drive
Cliffmount Drive
Juniper Road
Cold Spring Drive
Pioneer Road
Warbler Circle
Maple Avenue
Bay Hill Drive
Seminole Way
Carnoustie Circle
Turnberry Lane
Muirfield Lane
Grant Hill Road
Old Orchard Road
Burr Road
Berkshire Road
Hillside Drive
Kenmore Road
High Hill Road
High Meadow Road
Colonial Drive
Winged Foot Blvd
Royal Troon Circle
Bay Hill Drive
Cherry Hills Cir
Pebble Beach Drive
Bloomfield Avenue
Cottage Grove Road

1" = 1000'

TRAILS AND GREENWAYS REVIEW

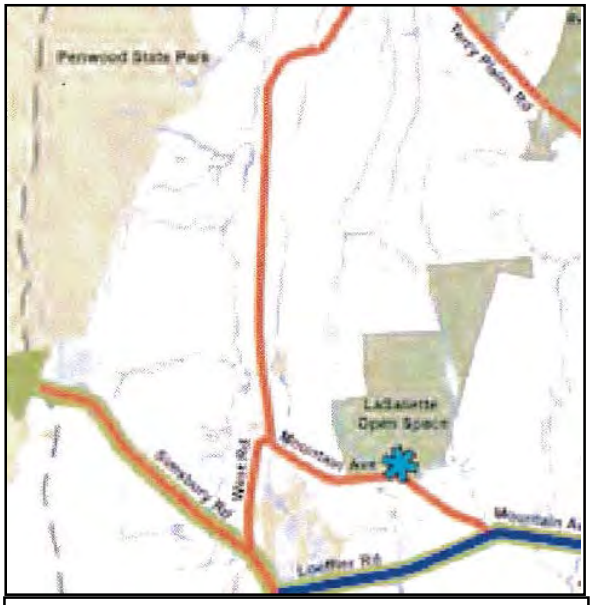


Figure 1 - Bloomfield Parks Connectivity map. LaSalette property shown in dark green. Proposed bike routes in red; proposed bike lanes shown in blue.

Site Visit and Observations:

The Town of Bloomfield acquired the 140 acre LaSalette Park property located on Mountain Road in 1992. The town's goal for the property is to form a farm feasibility/farmstead restoration master plan for the park. In addition, the town would like to provide both a trail system on the property as well as linkages to nearby trails and bike routes. This intention is documented in the town's "Parks Connectivity" map (Figure 1) which shows the property being planned as a "gateway" (blue asterisk in Figure 1) as well as adjacent to an important bike route.

The Farmington Canal Heritage Trail (a CT Designated Greenway) and East Coast Greenway (ECG, a nationally important recreational trail) trail head currently exists about 7 miles north of the subject property on Route 189 in Simsbury. The East Coast Greenway currently passes close by the property on Route 178 (shown in blue in Figure 1) and continues westerly through Penwood and Talcott Mountain State Parks on Route 185 (Simsbury Rd in Figure 1). The ECG would provide a potentially international user group who might utilize the LaSalette Property amenities as a break from their trek. Similarly, the Metacomet Trail (blue line in Figure 2) which is part of a CT Designated Greenway (The Blue Blazed Hiking Trail (BBHT) System) and The New England National Scenic Trail exist in Penwood and Talcott Mountain State Parks.

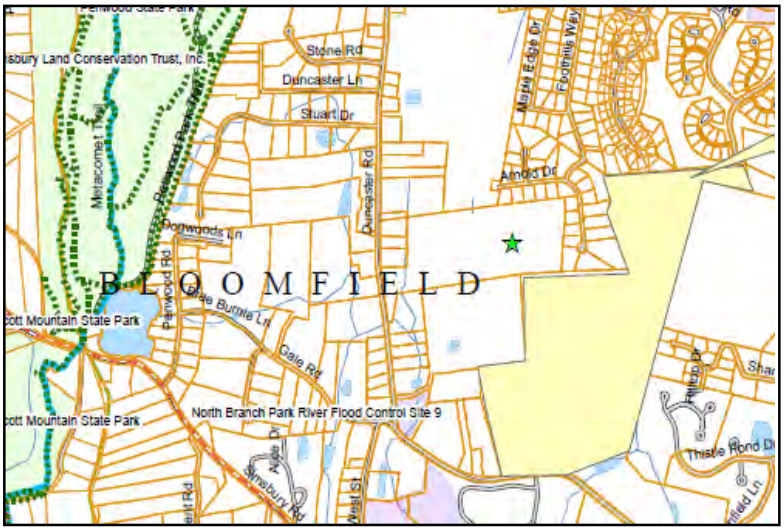


Figure 2

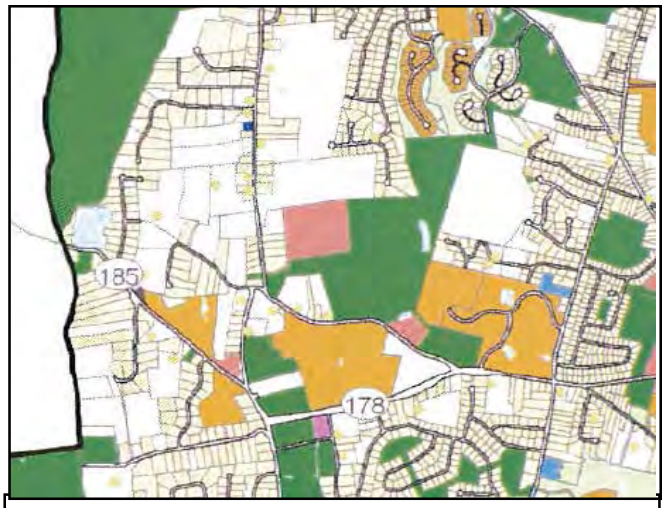


Figure 3 - Bloomfield Landuse Map. LaSalette property shown in dark green (dedicated open space). Multi-family development shown in gold.

Looking at Figure 3, you can imagine other connections to nearby multi -family developments which, in addition to potentially using the property, may offer other trail and recreational connections as well as partners in land stewardship.

Some items that came to mind during my site walk regarding trail design follow. A very important exercise for anyone considering trail design is attempting to clearly define the trail users. There are many different types and some have conflicting needs. Determining the user groups can be done by survey, public meetings or other common planning techniques. It is important to also consider any user restrictions that may exist on trails you may wish to link to; Penwood State Park system, for example, is a multi-use trail system except for the BBHT.

Once the user groups are determined, many Connecticut trail user clubs are available to help with trail design. For example, The Connecticut Forest & Park Association, who maintain the BBHT system, offer trail training and technical assistance (www.ctwoodlands.org). The New England Mountain Biking Association (http://www.nwctnemba.org) offers similar services for multi-use trails and has excellent publications available. Also American Trails (www.americantrails.org) has a great variety of resources.

Picture 1 shows the abundant potential access to the property's small lake. Providing access to water features that will limit users to desirable locations will keep people from creating their own potentially numerous and less protective paths. There are various techniques available to use to develop a sustainable access. The Forest Service trail building publications are one example of a resource.


Picture 1

Board walks may be of interest to provide access to the most variety of ecosystems on the property or to protect fragile soils (Picture 2). Many new technologies are available and a wide range of prices. Dinosaur State Park will be replacing their old wooden structure in 2015 and would be a good source of detail if desired.


Picture 2

This reviewer walked on an apparently well used, white blazed trail which provided excellent views and access to much of the diverse landscape of the property. The blazes can sometimes be too numerous or confusing (Picture 3). CFPA has very good guidance documents and training available for trail blazing.

Because of the terrain, the property may lend itself to providing a very enjoyable cross country ski experience. The existing trails can be used for more experienced skiers. It may also provide an opportunity to include some educational historical information on the historic ski area known to have existed on the adjacent property.


Picture 3

There are a few good examples of properties combining farming with recreation. Two that come to mind are Shelburne Farms in Vermont (http://www.shelburnefarms.org) and Northwest Park in Windsor (http://www.northwestpark.org).

The Recreational Trails & Greenways Program is available upon request to assist the town. FYI, there will be another Recreational Trails grant round for 2016. Details can be found at: www.ct.gov/deep/rectrails.

ARCHAEOLOGICAL AND HISTORICAL REVIEW

The park consists of 140 acres of woodlands and active agricultural land, as well as the 1834 Captain Oliver Filley House (Figure 1). The property represents an important part of local and national history, and was listed on the National Register of Historic Places in 2007 (NRHP 2007). The grounds of the Filley House were investigated in late 1994 and early 1995 by Archaeological Research Specialists (Lavin 1995). This work was supported by the Wintonbury Historical Society (Comar et al 1995) in order to document the original exterior grade adjacent to the building, to investigate the use of the area near the rear ell arched portico, to locate features associated with the removed front porch, and to investigate the location and age of a possible earlier northwestern addition. The survey was limited to the excavation of three test pits in the area of the old front porch and a large block excavation at the northwest corner of the house. A second archaeological survey was undertaken in 1999 by avocational archaeologist Jim Trocchi (Trocchi 1999). This survey included the excavation of 58 test pits in the south grounds and 22 to the north and west of the house. These preliminary investigations indicate that buried features associated with earlier architectural structures are present, as are abundant remains of household debris associated with the families that resided there. The property also housed an important tin wares shop from 1805 through 1817. In 1913 the property was sold to the Missionaries of LaSalette for use as an agricultural training center for young men. The Filley House is listed in the state archaeological site files as Site 11-9.

Aerial photographs indicate that the property has undergone several changes during the 20th century. The 1934 Fairchild aerial survey photograph indicates that the Missionaries of LaSalette made complete agricultural use of the property. The northeastern portion of the property, including a meadow where the modern pond is located, represents pasture land. The rest was cultivated. This pattern probably reflects prior 19th-century land use, known to have included both animal husbandry and agriculture (NRHP 2007: §8, p. 4). A closer examination of the core household area indicates the presence of a large number of farm buildings north and east of the Filley house (Figure 3). Most of these appear to be dairy barns, in addition to a number of smaller out-buildings. The location of these structures is superimposed on a recent image of the property in Figure 4. These areas could be investigated by archaeologists to verify their locations and identify associated artifacts that could better define the age and use of each structure. In 1951, many of these structures remain visible on the aerial photograph, though only three remain today. The northeastern pasture is reverting to forest at this time, and the meadow had not yet been dredged and dammed. Spoils piles associated with the dredging and damming of the pond shortly after this time were noted during the walkover (Figure 6).

The high elevation areas of the property consist of drumlinoid hills (thick till) surrounded by thin till on the lower slopes. These stony Wethersfield loam soils have a relatively low sensitivity for Native American archaeological sites. The exception to this is the naturally terraced area in the forested portion of the property east of the dammed pond. This part of the property appears to be less stony and would have provided a good short-term living or work area for Native American occupants of the region (Figure 7). Low lying portions of the property include poorly-drained Wilbraham, Ludlow and Rainbow silt loams with very low archaeological potential. No Native American artifacts were identified in any of the prior investigations of the Filley house grounds and none were observed during the walkover.

The Office of State Archaeology supports the potential use of LaSalette Park as a working farm to preserve and maintain its historical character. Because the site is listed on the National Register of Historic Places, future restoration work on existing structures should be done under the guidance of the State Historic Preservation Office (SHPO). The SHPO should also be contacted if there are plans to disturb the yard area

associated with the Filley house, or areas in the vicinity of the prior agricultural outbuildings shown in Figures 3 and 4. The Office further recommends that if additional portions of the property are developed for recreational purposes, such as the creation of multi-use trails, they should undergo a Phase IB archaeological reconnaissance survey prior to any ground disturbance to ensure that no undocumented cultural/historical resources are impacted. This recommendation applies in particular to the terraces east of the pond in the wooded section of the property.

References:

Comar, Lee, et al.
1995 The Captain Oliver Filley House, Feasibility Study. Wintonbury Historical Society.

Lavin, Lucianne
1995 Archaeological Sensitivity Survey, Captain Oliver Filley House. CHPC No. 602. Archaeological Research Specialists, Meriden.

NRHP
2007 Captain Oliver Filley National Register of Historic Places nomination form: http://pdfhost.focus.nps.gov/docs/NRHP/Text/07000420.pdf

Trocchi, Jim
1999 Captain Oliver Filley House, Archaeological Study. Report on file at the Office of State Archaeology, UConn, Storrs.

Figure 1: Approximate bounds of the LaSalette Property on a recent aerial photograph.

Figure 2: Location of the LaSalette Park project area on the 1934 Fairchild Aerial Survey image. At this time the Missionaries of LaSalette made complete agricultural use of the property.

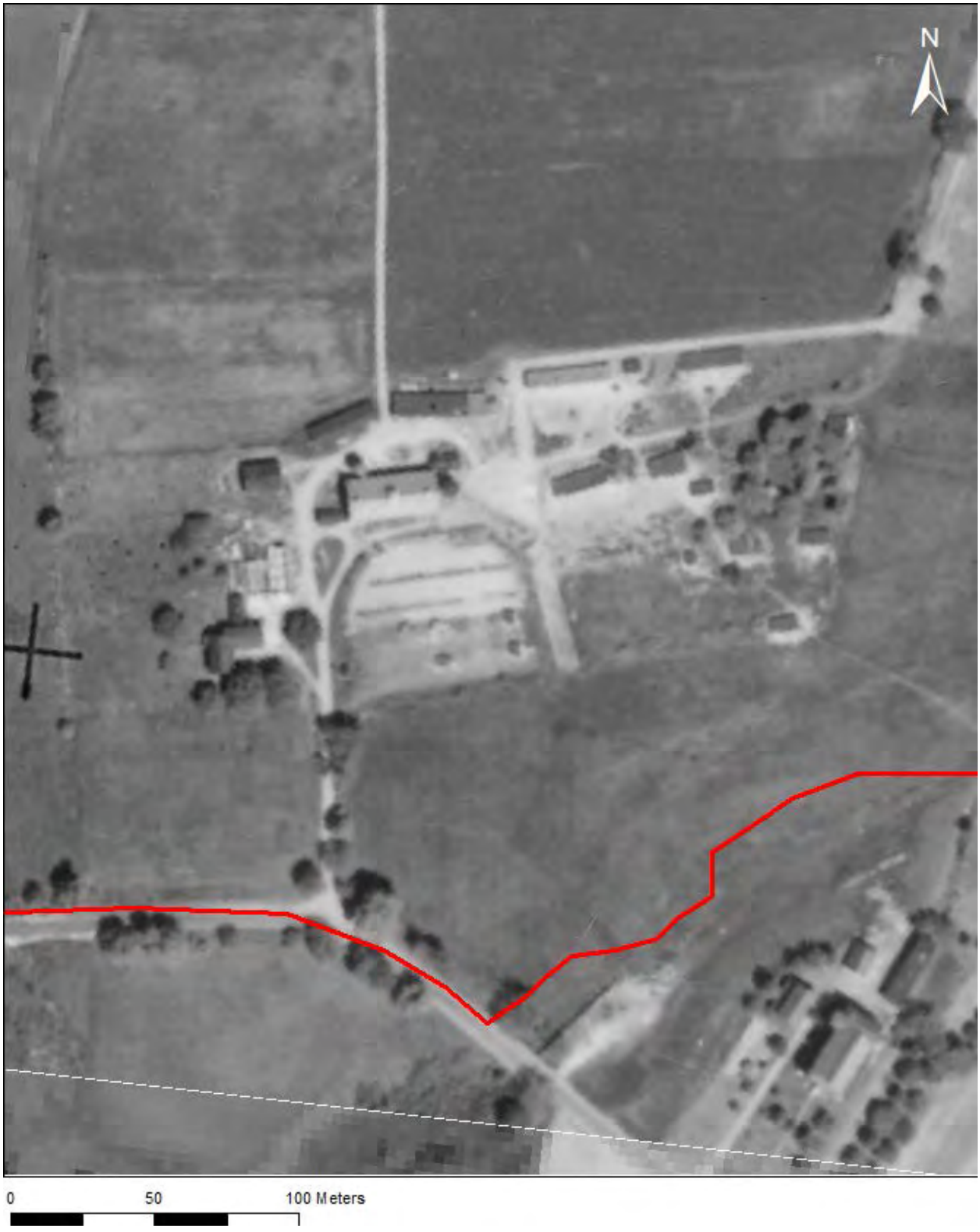


Figure 3: Agricultural building visible on the 1934 Fairchild aerial photograph. The Finney house, with a no longer extant north addition is visible on the lower left. Other structures appear to represent dairy barns and smaller out buildings.

Figure 4: Location of 1934 structures on a recent aerial photograph of the Finney property. Only the Finney House, two barns and the well house remain standing.

Figure 5: The 1951 aerial photograph of LaSalette Park indicates forest regrowth in much of the former northeastern pasture. The meadow has not yet been dredged and dammed. Many of the structures visible in 1934 are still standing. A possible ski run lies about 100 meters south of the northeastern dog-leg outside of the property bounds (faint white line).

Figure 6: Dredging spoils along the eastern margin of the dammed pond at LaSalette Park.

Figure 7: Terraces such as this lie in the forested area east of the LaSalette Park pond. These terrace areas have moderate to high archaeological sensitivity for Native American sites.

CT DEPARTMENT OF TRANSPORTATION COMMENTS

The project as presented is the use of the parcel as open space with possible uses including: community garden, CSAs, other leased agricultural use, Disc Golf, trails, and hayrides. This project would likely include some public parking but will not likely affect traffic on the State Route system.

LaSalette Park is close to the Farmington Canal Trail/East Coast Greenway, creating an opportunity for an extension of the trial systems leading to the center of town. All Connecticut Department of Transportation (Department) funded paths provide ADA compliant facilities. Therefore, while the Department has a wide variety of funding options, a Department funding source may not be possible due the site challenges to ADA compliance. Alternatives to State funding could include a Community Block grant or a Recreation Trails grant, private foundation funds, or non-profit volunteer force such as the Boy Scouts.

The development of this trail, even though it won't be ADA compliant, would be a great extension of the surrounding trails and coincides with Department's goals of creating a network of intermodal travel. The trail would be used frequently due to its location and purposed connectivity to the center of the town which offers substantial health benefits to its users. Consider use of "Share the Road" signage on the surrounding road network to alert drivers to the presence of a bike and pedestrian generator. Sidewalks leading to the property may also provide a higher level of accommodation for pedestrians. (Attached in the Appendix is the UCONN Technology Transfer Center Tech Brief 2014-5 *Sharing the Road for Motorists, Pedestrians and Cyclists*.

STATE and LOCAL PLANS of CONSERVATION and DEVELOPMENT

Introduction

Similar to many towns in the Connecticut, Bloomfield's early economy was largely based on agriculture – specifically shade tobacco. Over time, Bloomfield has transitioned away from an agro-centric economy to become a densely populated suburb of Hartford.

Connecticut's agriculture has changed significantly over the years, but it remains a major contributor to the character and heritage of Connecticut towns and a part of the State's diversified economy. For a more in-depth discussion on the benefits of incorporating agriculture in Connecticut towns, please see Planning for Agriculture: A Guide for Connecticut Municipalities (http://ctplanningforagriculture.com/guide/AFT_guide_web9-29.pdf).

State of Connecticut: Plan of Conservation and Development (POCD)

The State POCD is a tool to help guide land use decisions in Connecticut and promote those aspects that residents find important. The State POCD is generally supportive of actions that promote agriculture, as stated in this policy recommendation in Growth Management Principle Four: Conserve and Restore the Natural Environment, Cultural and Historical Resources, and Traditional Rural Lands,

PROMOTE agricultural businesses and supportive industries that are vital to the local and regional economy, while simultaneously preserving prime farmland through the acquisition of development rights and, to the extent practical, the avoidance, minimization, and/or mitigation of the loss or conversion of agricultural lands associated with state-sponsored development actions;
http://www.ct.gov/opm/lib/opm/igp/org/cdupdate/2013-2018_cd_plan.pdf

Current trends have shown an increase in the number of new farms established in Connecticut in recent years. According to the USDA's 2012 Census of Agriculture, Table 8, (http://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_2_County_Level/Connecticut/st09_2_008_008.pdf), between 2007 and 2012, both the number of farms and the acreage of land devoted to farmland in Connecticut has increased. However, the statewide acreage used for farmland has not kept pace with the overall number of new farms. Hartford County, in particular, showed a 14% increase in the number of farms from 2007 to 2012, but only a 1% increase in farmland, resulting in a decrease in average farm size from 68 acres in 2007, to only 60 acres in 2014. To meet the needs of Connecticut farmers and prevent the loss or conversion of existing farmland to non-agricultural purposes, the State POCD *encourage[s] municipalities to build capacity and commitment for agricultural lands preservation. http://www.ct.gov/opm/lib/opm/igp/org/cdupdate/2013-2018_cd_plan.pdf.* At 140 acres, 80 acres of which are active farm fields, the acquisition of the LaSalette property is a significant commitment for agricultural preservation by the town of Bloomfield.

The preservation of agricultural land is only one step in creating a sustainable farming model. The integration of local community programs such as CSAs, community gardens, and educational programs are often considered and can assist a municipal farm property succeed economically and also contribute

to the community in other ways. One source of further information on community farming, including case studies, is the Northeast Organic Farming Association of Connecticut (CTNOFA) http://www.ctnofa.org/CommunityFarms.html.

In addition to agricultural value, The State POCD recognizes the importance of multi-functional open space, both for its environmental benefit and its positive impact on public health and safety. The POCD states, *It is widely recognized that Connecticut's natural, cultural and historical resources, along with its rural landscapes, have intrinsic values which contribute to the state's high quality of life* *http://www.ct.gov/opm/lib/opm/igp/org/cdupdate/2013-2018_cd_plan.pdf*. LaSalette is located in close proximity to Bloomfield's town center and abuts several residential developments, presenting an opportunity to connect a large number of residents to the positive benefits associated with open space.

Capitol Region Council of Governments (CRCOG): Regional Plan of Conservation and Development

The Capitol Region Council of Governments (CRCOG) maintains its own Plan of Conservation and Development (POCD) (http://www.crcog.org/community_dev/regional_plan.html). Chapter Five discusses the importance of Open Space and Farmland Preservation. While the plan shows that Bloomfield is in line with the State's 2023 goal of 21% preserved open space and ahead of the Capitol Region's average of 18% preserved open space, large parcels suitable for open space are often difficult to come by. CRCOG's POCD has put forth five Goals and Policy Recommendations related to Open Space and Farmland Preservation:

A. *Support protection of more open space in the Capitol Region*
B. *Encourage preservation of farmland in the Capitol Region*
C. *Encourage preservation of declassified Water Company Land as open space*
D. *Coordinate and prioritize open space preservation throughout the region*
E. *Expand and protect open space along major rivers*

Section B of CRCOG's Plan goes into further detail recommending stipulations that allow for working lands to continue production, including the integration of community supported agriculture, and preserving "agricultural clusters" to improve viability of farming operations. LaSalette is desirable, in that it satisfies both open space and farmland preservation goals within the same property, and the proposed use of the property as a working farmstead is in line with CRCOG's policy recommendations.

Section D of the CRCOG POCD promotes the prioritization and acquisition of properties with the potential to create inter-municipal, open space connections, thus reducing the checkerboard effect and creating regional "greenways". To accomplish this goal, CRCOG recommends that municipalities adopt individual open space plans, and cooperatively work towards a regional open space plan. The Town of Bloomfield has developed an open-space plan that highlights the opportunities for the LaSalette property to connect with local existing open-space parcels, as well as with larger tracts of State open space, such as the nearby Penwood and Talcott Mountain State parks.

Town of Bloomfield: Plan of Conservation and Development

Chapter Three of the Town Plan of Conservation and Development (POCD) http://bloomfieldct.org/Resources.ashx?id=8e2c31b3-fa96-4230-9536-ef74348134c8 places high priority on not only the preservation of farmland, but the promotion of active agricultural operations. The Town has developed a process that allows for farming on municipal land, thereby eliminating the costs and burden of land ownership and opening up more opportunity for local farmers:

Developing partnerships with farmers to provide land at a reduced rental rate is one way to promote/retain farming while meeting overall open space objectives. This is a good use of open space land and Bloomfield should continue to allow farm activities on open space lands.

http://bloomfieldct.org/Resources.ashx?id=8e2c31b3-fa96-4230-9536-ef74348134c8

The Agricultural Resources Plan identifies the LaSalette parcel as one of the few areas where public open space and agriculture overlap. Multi-functional land use is encouraged by the State POCD, especially when those uses complement one another. Opportunities to combine farmstead programming with other agricultural and public use should be explored.

In addition to farmland use and preservation, the Bloomfield POCD places a high priority on the preservation of Historic and Scenic Resources. The Oliver Filley House and LaSalette property are identified as important character resources to the Town and listed on the National Register of Historic Resources. Protection, preservation and - where appropriate -the continued or adaptive reuse of these resources are consistent with the State POCD and encouraged.

Open space connectivity and the creation of greenways is a high priority to the Town of Bloomfield, especially the establishment of East-West Greenways. While the town contains several passive recreation trails, including the extensive Penwood and Talcott Mountain State Parks trail systems and the Metacomet Trail, the majority of these trails primarily run in the north-south direction and stay within a single corridor. Relatively few trails exist that link corridors and open space, especially in the east-west direction. As outlined in the Town's Open Space and Greenway Vision, a clear need exists to improve connectivity and create a more meaningful, more interconnected trail network.

The LaSalette property and proposed LaSalette Trail are a key link in fulfilling the Town's Open Space and Greenway Vision. Along with other existing and proposed open space, they would connect the Penwood Trail system with Bloomfield's Town Center and the proposed East-Coast Greenway extension, and open recreational opportunities to several surrounding residential neighborhoods.

Conclusion

A farm feasibility/farmstead program for LaSalette Park and the Oliver Filley House, is generally consistent with the State, Regional, and Municipal Plans of Conservation and Development. Agriculture is important to the culture, heritage, and economy of Connecticut, and even more so at the local level, and should be encouraged whenever practical. Factors such as existing uses, soils and other environmental factors, DEEP open space limitations, and public needs and public interests should guide the development of the site.

Sources

Capitol Region Council of Governments. Regional Plan of Conservation and Development, May 21, 2014. http://www.crcog.org/community_dev/regional_plan.html

Department of Environmental Protection. Officially Designated Connecticut Greenways. http://www.ct.gov/deep/cwp/view.asp?a=2707&q=323852

A Publication of American Farmland Trust and Connecticut Conference of Municipalities. Planning for Agriculture: A Guide for Connecticut Municipalities, 2012 Edition. http://ctplanningforagriculture.com/guide/2012_planning_for_ag.pdf

State of Connecticut. Plan of Conservation and Development Policies Plan 2013-2018, June 5, 2013. http://www.ct.gov/opm/lib/opm/igp/org/cdupdate/2013-2018_cd_plan.pdf

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Town of Bloomfield. News Release, January 29, 2013 http://bloomfieldct.org/Resources.ashx?id=6f3f0d8e-84d5-4770-8a7b-648021931518

University of Connecticut, College of Agriculture and Natural Resources. Economic Impacts of Connecticut's Agricultural Industry, September 2010. http://www.are.uconn.edu/documents/EconomicImpacts.pdf

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Halloran, Liz. Bloomfield Council To Accept Rest Of Lasalette Property. Hartford Courant, December 27, 1994. http://articles.courant.com/1994-12-27/news/9501250871_1_town-hall-open-space-property-owners

Meyers, Kendra. Town Farmland up for Leasing. Hartford Courant, December 26, 1995. http://articles.courant.com/1995-12-26/news/9512260319_1_todd-bedard-farmed-town-owned-land

Drury, David. Bloomfield Commits $20,000 To Open Space Proposal. Hartford Courant, April 13, 2010. http://articles.courant.com/2010-04-13/community/hc-bloomfield-farms-0414.artapr13_1_open-space-proposal-appraisals-town

APPENDICES

Hops and Grain Resources

Dedication Agreement and State Statutes

Soil Map Unit Descriptions

Canada Thistle Invasive Plant Information

CTDEEP Information Sheets:
American Kestral, Eastern Hognose Snake, Eastern Box Turtle, and Eastern Ribbon Snake

Additional Watershed Maps

Tech Brief: Sharing the Road for Motorists, Pedestrians and Cyclists

Hops and Grain Resources

http://www.conngardener.com/images/HopsJA13.pdf

Article in the 2013 July/August Connecticut Gardener by Victor Triolo on hops.

Victor A. Triolo is the research and development coordinator of the Connecticut hops and malt grains trials for the Connecticut Agricultural Experiment Station and Southern Connecticut State University. Write to him at Southern Connecticut State University, Room 342 -Jennings, 501 Crescent St., New Haven 06515.
Email: triolov1@southernct.edu.

http://www.kentfallsbrewing.com/

Sourcing regional and local grains for craft brewing

http://valleymalt.com/

a micro-malter – great information

FarmerBrewer
Winter Weekend 2016
January 16-17, Amherst, MA

FarmerBrewer is an immersive experience for established and aspiring farmers, brewers, and maltsters to glean crucial lessons from industry experts as well as each other. We also make plenty of time to socialize and enjoy locally grown food and beer, of course! **Registration in advance is encouraged. Speakers and schedules for 2016 will be announced by August 2015.**

http://www.northeasthopalliance.org/pages/resources

The Northeast Hop Alliance (NeHA) welcomes hops growers, brewers, educators, and supporters to join us in promoting hops as a specialty crop in the Northeast, and to restore hops as the profitable agricultural industry that once thrived in this area for nearly 150 years.

https://s3.amazonaws.com/assets.cce.cornell.edu/attachments/9023/June_2015_Hops_Newsletter.pdf?1433962372

http://fourstarfarms.com/

A farm in Northfield, MA that grows hops and grains.

http://www.bostonmagazine.com/restaurants/blog/2014/09/05/four-star-farms-new-england-hops-revolution/

Cornell Extension hops specialist
Steve Miller

Senior Resource Educator
(315) 684-3001 ext.127
sgm6@cornell.edu
Agriculture

http://news.cornell.edu/stories/2013/07/hop-yard-takes-root-geneva

http://news.cornell.edu/stories/2011/06/states-first-hops-specialist-tap

http://www.sevendaysvt.com/vermont/resurrecting-hops/Content?oid=2144031

Article on hops growing in Vermont.

http://www.craftbeer.com/craft-beer-muses/the-return-of-the-micro-maltsters-a-locavores-craft-beer-dream-come-true

Article on micro-malters

http://www.sevendaysvt.com/vermont/resurrecting-hops/Content?oid=2144031

August 2011 article on hops in Vermont

http://www.newleafnet.com/docs/New_Leaf_Northeastern_Hops_Market.pdf

PowerPoint on market potential for hops (early 2000's)

http://www.ct.gov/doag/lib/doag/marketing_files/2014/project_awards_06_to_13.pdf

Specialty crop block grants – study of hop cultivation in CT

http://hookerbeer.com/gallery/set/72157631537696758

Photos from 2012 hop harvest

DEDICATION AGREEMENT

CONNECTICUT SPECIAL ACT PROJECT
MUNICIPALITY OF BLOOMFIELD
LaSALETTE PROPERTY

TO ALL PEOPLE WHO THESE PRESENTS SHALL COME, GREETING:

KNOW YE THAT the Town of Bloomfield, a municipal corporation, specially chartered under the laws of the State of Connecticut and located within the County of Hartford in said State here in after called TOWN, has developed a certain parcel of land within and owned by the town, which land is more fully described as follows:

Being the same and all the same property conveyed to the Town of Bloomfield by Northwest Development Associates Limited Partnership by virtue of a Warranty Deed dated November 27, 1991 recorded on November 27, 1991 in the land records of the Town of Bloomfield, County of Hartford and State of Connecticut in Volume 0534 and Page 016. Said parcel contains 139.3 +/- acres and is more fully shown on a map entitled "Land To Be Conveyed To The Town of Bloomfield By Northwest Development Associates Limited Partnership, Mountain Ave/Loeffler Rd. Bloomfield, Conn. date 08/27/91, Drawn by: G.G., Job No.: 84156, Scale: 1"=200', Checked by F.A.H., Sheet No.: 1, revisions 9/26/92, 10/23/91." Said property is more particular shown as "Parcel 1" on the above referenced map which is filed in the land records of the Town of Bloomfield, County of Hartford and State of Connecticut.

WHEREAS, the Town has received a state grant-in-aid for the development of said land for conservation, recreation and open space purposes,

WHEREAS, the Town intends to use said land for recreational conservation purposes as defined in Section 7-131c through 7-131k of the Connecticut General Statutes, as amended.

NOW, THEREFORE, in consideration for the grant-in-aid, the Town agrees with the State of Connecticut that :

1. Said land shall not be converted or converted to any use other than recreation or conservation purposes (as defined in said Sections 7-131c through 7-131K, as amended), except with the approval by the Commissioner of the Department of Environmental Protection as provided in Sections 7-131c through 7-131k of the Connecticut General Statutes, as amended.

2. That the Town will erect a permanent plaque or sign on said property which acknowledges State Outdoor Recreation Project Assistance.

3. It is agreed and understood that the Town shall not charge a fee to nonresidents that exceeds twice that charged to residents. Where there is no fee charged to residents but a fee charged to nonresidents, nonresidents' fees can not exceed fees charged for residents at comparable State or local facilities.

Reservation, membership or annual permit systems available to residents must also be available to nonresidents and the period of availability must be the same for both residents and nonresidents.

4. The Town agrees to comply with Connecticut General Statute section 4a-60, nondiscrimination and affirmative action provisions, attached as Schedule A which is hereby incorporated as part of this agreement.

5. The Town agrees to comply with the provisions of Section 16(b) of Public Act 91-58 as amended by Section 8 of Public Act 91407 which is attached as Schedule B and is made part of this agreement hereto.

Said covenants and agreements shall run with the land in favor of the State of Connecticut and shall be binding upon the Town and its successors and assigns.

IN WITNESS WHEREOF, the Town of Bloomfield has caused these present to be executed and its seal to be hereunto affixed by the Town Manager, Keith L. Harrigan, hereunto duly authorized this 12th day of August, 1992.

Signed ,Sealed and Delivered in the presents of:

Signature
Print

Wallace A. Curtis
Witness Wallace A. Curtis

Bainie D. Wild
Witness Bainie D. Wild

TOWN OF BLOOMFIELD

By Keith L. Harrigan
Acting Keith L. Harrigan
Town Manager
Duly Authorized

STATE OF CONNECTICUT:)
) ss: TOWN OF BLOOMFIELD
COUNTY OF HARTFORD:)

The foregoing instrument was acknowledged before me this 12th day of August, 1992, by Keith L. Harrigan Acting Town Manager, Town of Bloomfield.

Bainie D. Wild
NOTARY PUBLIC
My Commission Expires: MY COMMISSION EXPIRES MARCH 31, 1995

Sec. 7-131c. Open space land. Definitions. Section 7-131c is repealed, effective July 1, 1998.

(1963, P.A. 649, S. 1; February, 1965, P.A. 368, S. 1; 574, S. 3; 1971, P.A. 842, S. 1; P.A. 90-239, S. 3; P.A. 92-206, S. 1; P.A. 98-157, S. 14, 15.)

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Sec. 7-131d. Protected open space and watershed land acquisition grant program: Purposes; criteria; conditions. Charter Oak open space grant program: Criteria; conditions. (a) There is established the protected open space and watershed land acquisition grant program. The program shall provide grants to municipalities and nonprofit land conservation organizations to acquire land or permanent interests in land for open space and watershed protection and to water companies, as defined in section 25-32a, to acquire and protect land which is eligible to be classified as class I or class II land, as defined in section 25-37c, after acquisition. All lands or interests in land acquired under this program shall be preserved in perpetuity predominantly in their natural scenic and open condition for the protection of natural resources while allowing for recreation consistent with such protection and, for lands acquired by water companies, allowing for the improvements necessary for the protection or provision of potable water.

(b) Grants may be made under the protected open space and watershed land acquisition grant program established under subsection (a) of this section or under the Charter Oak open space grant program established under section 7-131t to match funds for the purchase of land or permanent interests in land which purchase meets one of the following criteria: (1) Protects land identified as being especially valuable for recreation, forestry, fishing, conservation of wildlife or natural resources; (2) protects land which includes or contributes to a prime natural feature of the state's landscape, including, but not limited to, a shoreline, a river, its tributaries and watershed, an aquifer, mountainous territory, ridgelines, an inland or coastal wetland, a significant littoral or estuarine or aquatic site or other important geological feature; (3) protects habitat for native plant or animal species listed as threatened or endangered or of special concern, as defined in section 26-304; (4) protects a relatively undisturbed outstanding example of a native ecological community which is now uncommon; (5) enhances and conserves water quality of the state's lakes, rivers and coastal water; (6) preserves local agricultural heritage; or (7) in the case of grants to water companies, protects land which is eligible to be classified as class I land or class II land after acquisition. The commissioner may make a grant under the protected open space and watershed land acquisition grant program to a distressed municipality or a targeted investment community, as defined in section 32-9p, for restoration or protection of natural features or habitats on open space already owned by the municipality, including, but not limited to, wetland or wildlife or plant habitat restoration or restoration of other sites to a more natural condition, or replacement of vegetation, provided the total amount of grants to such municipalities for such purposes may not exceed twenty per cent of the total amount of grants made in any fiscal year.

(c) No grant may be made under the protected open space and watershed land acquisition grant program established under subsection (a) of this section or under the Charter Oak open space grant program established under section 7-131t for: (1) Land to be used for commercial purposes or for recreational purposes requiring intensive development, including, but not limited to, golf courses, driving

ranges, tennis courts, ballfields, swimming pools and uses by motorized vehicles other than vehicles needed by water companies to carry out their purposes, provided trails or pathways for pedestrians, motorized wheelchairs or nonmotorized vehicles shall not be considered intensive development; (2) land with environmental contamination over a significant portion of the property provided grants for land requiring remediation of environmental contamination may be made if remediation will be completed before acquisition of the land or any interest in the land and an environmental assessment approved by the Commissioner of Energy and Environmental Protection has been completed and no environmental use restriction applies to the land; (3) land which has already been committed for public use; (4) development costs, including, but not limited to, construction of ballfields, tennis courts, parking lots or roadways; (5) land to be acquired by eminent domain; or (6) reimbursement of in-kind services or incidental expenses associated with the acquisition of land. This subsection shall not prohibit the continuation of agricultural activity, the activities of a water company for public water supply purposes or the selling of timber incidental to management of the land which management is in accordance with approved forest management practices provided any proceeds of such timber sales shall be used for management of the land. In the case of land acquired under this section which is designated as a state park, any fees charged by the state for use of such land shall be used by the state in accordance with the provisions of title 23.

(d) Any municipality or group of contiguous municipalities may apply to the Commissioner of Energy and Environmental Protection for a grant-in-aid of a program established to preserve or restrict to conservation or recreation purposes the use of open space land. Such grant shall be used for the acquisition of land, or easements, interests or rights therein, or for the development of such land, or easements, interests or rights therein, for purposes set forth in this section, or both, in accordance with a plan of development adopted by the municipal planning commission of the municipality within which the land is located. Any application for a grant-in-aid relating to land located beyond the territorial limits of the applying municipality shall be subject to approval of the legislative body of the municipality within whose territorial limits the land is located. A municipality applying for aid under this section, may designate its conservation commission as its agent to make such application.

(e) At closing, a permanent conservation easement, as defined in section 47-42, shall be executed for any property purchased with grant funds, which conservation easement shall provide that the property shall remain forever predominantly in its natural and open condition for the specific conservation, open space or water supply purposes for which it was acquired provided any improvements or changes to the property shall be supportive of such condition or purposes. The permanent conservation easement shall be in favor of the state acting through the Commissioner of Energy and Environmental Protection, or his designee, which may be a municipality or a land conservation organization. In the case of land acquired for water supply protection, a water company may hold an easement in conjunction with the state or a nonprofit entity to protect the water supply. Such permanent conservation easement shall also include a requirement that the property be made available to the general public for appropriate recreational purposes, the maintenance of which recreational access shall be the responsibility of the grantee provided such access shall not be required for land which will be classified as class I or class II land by a water company if such access is inconsistent with the provision of pure drinking water to the public. An exception to the provision of public recreational access may be made at the discretion of the Commissioner of Energy and Environmental Protection when provision for public access would be unreasonably detrimental to the wildlife or plant habitat or other natural features of the property or, for land where development rights have been purchased, would be disruptive of agricultural activity occurring on the land. Any instrument conveying an interest in land less than fee which interest is purchased under this section shall provide for the permanent preservation of the land and public access

consistent with the land's use or protection and with any restrictions prescribed by the Department of Public Health in order to protect a public drinking water source.

(1963, P.A. 649, S. 2; February, 1965, P.A. 367, S. 1; 1971, P.A. 842, S. 2; 872, S. 404; P.A. 78-359, S. 1, 8; P.A. 98-157, S. 3, 15; P.A. 00-203, S. 3, 11; P.A. 01-195, S. 106, 181; June Sp. Sess. P.A. 09-3, S. 468; P.A. 11-80, S. 1.)

History: 1965 act added requirement that grant-in-aid application concerning land beyond municipality's territory be approved by municipality where land lies and specified plan of development be in accordance with plan adopted by planning commission of municipality within which land is located, deleting restriction that municipalities may apply only for grant involving the use of land in their own towns; 1971 acts included improvement of land, easements, etc. for purposes of Sec. 7-131c in uses of grants and substituted commissioner of environmental protection for council on agriculture and natural resources; P.A. 78-359 substituted use of grants for "development" rather that "improvement" of land, easements, etc; P.A. 98-157 added new provisions as Subsecs. (a) to (c), inclusive, and (e) re the protected open space and watershed land acquisition grant program and designated existing provisions as Subsec. (d), effective July 1, 1998; P.A. 00-203 amended Subsec. (b) by applying certain provisions to charter oak open space grant program and amended Subsec. (c) by applying provisions to charter oak open space grant program and adding exception in Subdiv. (1) for vehicles used by water companies and for motorized wheelchairs, effective July 1, 2000; P.A. 01-195 deleted "account" following "the charter oak open space grant program" in Subsecs. (b) and (c), effective July 11, 2001; June Sp. Sess. P.A. 09-3 amended Subsec. (c) by deleting reference to Sec. 22a-27h; pursuant to P.A. 11-80, "Commissioner of Environmental Protection" was changed editorially by the Revisors to "Commissioner of Energy and Environmental Protection", effective July 1, 2011.

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Sec. 7-131e. Decisions of commissioner re grants. Administrative expenses. Review board. Report. Account. (a) Grant award decisions under the protected open space and watershed land acquisition grant program established under section 7-131d or under the Charter Oak open space grant program established under section 7-131t shall be made by the Commissioner of Energy and Environmental Protection at least semiannually. All complete and eligible grant applications shall be acted upon by the commissioner as soon as practicable. A single project may receive a grant in more than one grant cycle, subject to future availability of funds and subject to the limitations set forth in this section and sections 23-78, 12-498 and 7-131d. Up to five per cent of the grant funds may be used for administrative expenses including, but not limited to: (1) Contractors to assist the Department of Energy and Environmental Protection in the review and evaluation of grant proposals and baseline data collection for conservation easements; (2) appraisals or appraisal reviews; and (3) preparation of legal and other documents. Administrative expenses may not be used for staff salaries. Not later than September 1, 1998, for the protected open space and watershed land acquisition grant program established under section 7-131d, and not later than September 1, 2000, for the Charter Oak open space grant program account established under section 7-131t, the commissioner shall develop written guidelines and a ranking system for consistency and equity in the distribution of grant awards under the protected open space and watershed land acquisition grant program established under section 7-131d or

under the Charter Oak open space grant program account established under section 7-131t based on the criteria listed in subsections (b) and (c) of section 7-131d. Consistent with such criteria, additional consideration shall be given to: (A) Protection of lands adjacent to and complementary to adjacent protected open space land or class I or class II water company lands; (B) equitable geographic distribution of the grants; (C) proximity of a property to urban areas with growth and development pressures or to areas with open space deficiencies and underserved populations; (D) protection of land particularly vulnerable to development incompatible with its natural resource values including the protection of a public water supply source; (E) consistency with the state's plan of conservation and development; (F) multiple protection elements, such as water quality and supply protection, scenic preservation and farmland preservation; (G) the extent to which the presence of already constructed buildings or other manmade improvements diminish or overshadow the natural resource value of a proposed acquisition, or its value relative to its cost; and (H) preservation of forest lands and bodies of water which naturally absorb significant amounts of carbon dioxide.

(b) There is established a Natural Heritage, Open Space and Watershed Land Acquisition Review Board to assist and advise the commissioner in carrying out the provisions of sections 7-131d to 7-131g, inclusive, and sections 23-73 to 23-79, inclusive. Upon establishment of the review board and selection of a chairman under this section, the review board (1) shall provide comments on selection criteria, policies and procedures; (2) shall promote public participation; (3) shall provide guidance and conduct review of strategies for land protection, including strategies under section 23-8; (4) shall review and evaluate grant award policies and procedures; and (5) may provide comments on any application for funds not later than forty-five days after such application is submitted to the chairman. Upon establishment of the board, the commissioner shall take such comments into consideration in making any decisions regarding such grants.

(c) The review board shall consist of twenty-one members as follows: (1) The chairpersons and ranking members of the bonding subcommittee of the joint standing committee of the General Assembly having cognizance of matters relating to finance, revenue and bonding; (2) one member of the joint standing committee of the General Assembly having cognizance of matters relating to the environment, appointed by the speaker of the House of Representatives, and one member of the joint standing committee of the General Assembly having cognizance of matters relating to planning and development, appointed by the president pro tempore of the Senate, each of whom shall be ex-officio members of the board; (3) the Secretary of the Office of Policy and Management, or his designee; (4) a representative of the business community and a person experienced in issues relating to access to public facilities by persons with disabilities, appointed by the Governor; (5) one representative from an investor-owned water utility, appointed by the minority leader of the Senate; (6) one representative from a municipal water utility, appointed by the minority leader of the House of Representatives; (7) one representative from a regional water utility, appointed by the minority leader of the Senate; (8) one representative who is a realtor or attorney with a minimum of five years experience in real estate transfers, appointed by the speaker of the House of Representatives; one representative with a minimum of five years experience in the construction industry or land development, appointed by the president pro tempore of the Senate; (9) two representatives of interest groups primarily concerned with the conservation of river watershed regions, appointed one each by the majority leaders of the House of Representatives and the Senate; (10) three representatives from nonprofit organizations primarily concerned with environmental protection or natural resource conservation with a minimum of five years experience in land conservation and acquisition, appointed one each by the Governor, the speaker of the House of Representatives and the president pro tempore of the Senate; and (11) one chief elected official of a town with a population less than twenty thousand and one chief elected official of a town with a population greater than twenty

thousand, appointed by the Governor. The members, other than the members described in subdivisions (1), (2) and (3) of this subsection, shall serve terms of three years provided the terms of the members described in subdivisions (4) to (8), inclusive, of this subsection who are appointed in the year after July 1, 1998, shall expire on October 1, 1999, and further provided the terms of the members described in subdivisions (9) to (11), inclusive, of this subsection shall expire on October 1, 2000. The board shall elect a chairman from among its members and shall make such election on or before October 1, 1998. Members of the board shall serve until reappointed or replaced.

(d) Annually, on or before February fifteenth, the board shall submit a report regarding grant awards made in the previous calendar year and any findings and recommendations regarding the open space and watershed land acquisition program and the recreation and natural heritage trust program established under section 23-73 to the General Assembly.

(e) There is established an open space and watershed land acquisition account within the General Fund which shall consist of any funds required or allowed by law to be deposited into the account including, but not limited to, gifts or donations received for the purposes of section 7-131d. Investment earnings credited to the assets of the account shall become part of the assets of the account. Any balance remaining in the account at the end of any fiscal year shall be carried forward in the account for the fiscal year next succeeding. Payments from the account shall be made upon authorization by the Commissioner of Energy and Environmental Protection. Neither the proceeds of any general obligation bonds of the state nor the investment earnings of any such proceeds shall be deposited in the account. The Commissioner of Energy and Environmental Protection may use funds in the account for purposes of section 7-131d.

(1963, P.A. 649, S. 5; 1969, P.A. 628, S. 16; 1971, P.A. 872, S. 405; P.A. 98-157, S. 4, 15; June Sp. Sess. P.A. 98-1, S. 103; P.A. 99-58; P.A. 00-203, S. 4, 11; P.A. 01-195, S. 107, 181; P.A. 07-131, S. 1; P.A. 11-80, S. 1.)

History: 1969 act clarified provisions regarding preliminary approval, reports concerning and disposition of applications; 1971 act substituted commissioner of environmental protection for council on agriculture and natural resources; P.A. 98-157 deleted former section and added new provisions re timing of grant decisions, administrative expenses, a review board, a report and an account for donations, effective July 1, 1998; June Sp. Sess. P.A. 98-1 made technical corrections in Subsec. (c); P.A. 99-58 amended Subsec. (d) to provide for recommendations from the board to the General Assembly regarding the recreation and natural heritage trust program; P.A. 00-203 amended Subsec. (a) by applying provisions to charter oak open space grant program, effective July 1, 2000; P.A. 01-195 made a technical change in Subsec. (b), effective July 11, 2001; P.A. 07-131 amended Subsec. (a) to increase the percentage of grant funds permitted to be used for administrative expenses from 2% to 5%, effective July 1, 2007; pursuant to P.A. 11-80, "Commissioner of Environmental Protection" and "Department of Environmental Protection" were changed editorially by the Revisors to "Commissioner of Energy and Environmental Protection" and "Department of Energy and Environmental Protection", respectively, effective July 1, 2011.

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Sec. 7-131f. Considerations for approving grants from funds authorized prior to July 1, 1998. In making grants-in-aid for open space land acquisition or development from out of funds authorized before July 1, 1998, the Commissioner of Energy and Environmental Protection shall: (a) Seek to achieve a reasonable balance among all parts of the state in the relative adequacy of present areas devoted to recreational and conservation purposes and the relative anticipated future needs for additional areas devoted to recreational and conservation purposes; (b) give due consideration to the special park requirement needs of urban areas; (c) wherever possible, give priority to land which will be utilized for multiple recreational and conservation purposes; (d) give due consideration to coordination with the plans of departments of the state and regional planning agencies with respect to land use or acquisition; and (e) give primary consideration to the needs of municipalities that have formed local housing partnerships pursuant to the provisions of section 8-336f.

(1963, P.A. 649, S. 4; 1971, P.A. 872, S. 406; P.A. 79-607, S. 7; P.A. 88-305, S. 2, 4; P.A. 98-157, S. 13, 15; P.A. 11-80, S. 1.)

History: 1971 act substituted commissioner of environmental protection for council on agriculture and natural resources; P.A. 79-607 included grants for development; P.A. 88-305 added Subdiv. (e) re consideration of needs of municipalities that have formed local housing partnerships; P.A. 98-157 made this section applicable to funds authorized prior to July 1, 1998, effective July 1, 1998; pursuant to P.A. 11-80, "Commissioner of Environmental Protection" was changed editorially by the Revisors to "Commissioner of Energy and Environmental Protection", effective July 1, 2011.

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Sec. 7-131g. Grant: Amount, purposes, valuation of land. Issuance of bonds. (a) Subject to the provisions of sections 7-131d to 7-131k, inclusive, the Commissioner of Energy and Environmental Protection may (1) where a federal grant is also made, approve grants to municipalities in an amount not to exceed one-half of the nonfederal share of open space land acquisition or development costs, (2) where a federal rehabilitation or innovation grant is made to a municipality under the Urban Park and Recreation Recovery Act of 1978 (P.L. 95-625, 92 Stat. 3538), approve a grant to such municipality not to exceed fifteen per cent of the total project cost of such development or rehabilitation, and (3) where a federal grant is not made, approve grants to municipalities in accordance with the provisions of this section.

(b) The Commissioner of Energy and Environmental Protection may make grants under the open space and watershed land acquisition program to: (1) Municipalities for acquisition of land for open space under subdivisions (1) to (6), inclusive, of subsection (b) of section 7-131d in an amount not to exceed sixty-five per cent of the fair market value of a parcel of land or interest in land proposed to be acquired; (2) municipalities for acquisition of land for class I and class II water supply protection under subdivision (5) of subsection (b) of said section 7-131d, in an amount not to exceed sixty-five per cent of such value; (3) nonprofit land conservation organizations for acquisition of land for open space or watershed protection under subdivisions (1) to (6), inclusive, of subsection (b) of said section 7-131d, in an amount not to exceed sixty-five per cent of such value; (4) water companies for acquisition of land under subdivision (7) of subsection (b) of said section 7-131d, in an amount not to exceed sixty-five per cent of

such value provided if such a company proposes in a grant application that it intends to allow access to such land for recreational uses, such company shall seek approval of the Commissioner of Public Health for such access; and (5) distressed municipalities or targeted investment communities, as defined in section 32-9p, or, with the approval of the chief elected official or governing legislative body of such a municipality or community, to a nonprofit land conservation organization or water company, for acquisition of land within that municipality or community, for open space under subdivisions (1) to (6), inclusive, of subsection (b) of said section 7-131d, in an amount not to exceed seventy-five per cent of such value or for performance of work in the restoration, enhancement or protection of resources in an amount not to exceed fifty per cent of the cost of such work. Applicants for grants under the program shall provide a copy of the application to the chairperson of the review board established under section 7-131e. The board shall provide comments to the commissioner on pending applications as it deems necessary.

(c) For purposes of this subsection, the fair market value of land or interest in land shall be determined by one or more appraisals satisfactory to the commissioner and shall not include incidental costs, including, but not limited to, surveying, development or closing costs. The commissioner may consider a portion of the fair market value of a donation of land by an entity receiving a grant as a portion of the matching funds required under this subsection. A potential grantee may use funds made available by the state and federal government to fund not more than seventy per cent of the total cost of any project funded under the program.

(d) To the extent there is a balance of bonds authorized but not allocated by the State Bond Commission on or after July 1, 1998, pursuant to any bond act for the purposes of (1) the recreation and natural heritage trust program established under sections 23-73 to 23-79, inclusive, and (2) the municipal open space grant program established under sections 7-131c to 7-131g, inclusive, the State Bond Commission shall authorize the issuance of such balance only for the purposes described in section 23-74 and sections 23-75 and 7-131d and in two substantially equal installments one in each half of the fiscal year commencing with the fiscal year ending June 30, 1999.

(1963, P.A. 649, S. 3; 1967, P.A. 739, S. 1; 1969, P.A. 190, S. 1; 1971, P.A. 63, S. 1; 872, S. 407; 1972, P.A. 21, S. 1; P.A. 78-359, S. 2, 8; P.A. 79-607, S. 8; June Sp. Sess. P.A. 83-33, S. 14, 17; P.A. 92-206, S. 2; P.A. 98-157, S. 5, 15; P.A. 01-204, S. 9, 29; June Sp. Sess. P.A. 01-9, S. 73, 131; P.A. 07-131, S. 2; P.A. 08-124, S. 1, 38; P.A. 11-80, S. 1.)

History: 1967 act amended Subsec. (a) to differentiate between cases where federal grants made and where not made and required that land cost be determined by state-obtained appraisals in Subsec. (b); 1969 act added Subsec. (c) re applications prior to January 1, 1968; 1971 acts amended Subsec. (b) to allow state to make appraisals and substituted commissioner of environmental protection for council on agriculture and natural resources; 1972 act amended Subsec. (b) by specifying "one or more" appraisals; P.A. 78-359 changed "shall" to "may" in Subsec. (a), included grants for development costs, added provision re information required for determining development cost grant in Subsec. (b) and in Subsec. (c) changed applicable date to January 1, 1968, and replaced reference to council with commissioner of environmental protection; P.A. 79-607 added provision concerning grants under Urban Park and Recreation Recovery Act in Subsec. (a); June Sp. Sess. P.A. 83-33 amended Subsec. (b) to include language regarding determination of the treatment of gifts to municipalities; P.A. 92-206 amended Subsec. (a) to change the specification re the amount of certain grants authorized under this section; P.A. 98-157 replaced former Subsecs. (b) and (c) with new Subsecs. (b) to (d), inclusive, re amount of grants, valuation of land and issuance of bonds, effective July 1, 1998 (Revisor's note: In 1999 a reference to

Sec. 7-131c was changed editorially by the Revisors to Sec. 7-131d, since Sec. 7-131c was repealed by P.A. 98-157); P.A. 01-204 amended Subsec. (b) to allow the commissioner to make grants under the program to a nonprofit land conservation organization for the acquisition of land within a distressed municipality or targeted investment community with the approval of the chief elected official or governing legislative body of such municipality or community, effective July 11, 2001; June Sp. Sess. P.A. 01-9 revised effective date of P.A. 01-204 but without affecting this section; P.A. 07-131 amended Subsec. (b) to increase the percentages of the fair market value permitted to be paid in grants and added "water company" to the list of entities permitted to receive a grant in Subdiv. (5), effective July 1, 2007; P.A. 08-124 made a technical change in Subsec. (a) and amended Subsec. (c) to delete prohibition against using matching funds and to add provision permitting grantee to use state and federal funds for not more than 70% of total cost of project, effective June 2, 2008; pursuant to P.A. 11-80, "Commissioner of Environmental Protection" was changed editorially by the Revisors to "Commissioner of Energy and Environmental Protection" in Subsecs. (a) and (b), effective July 1, 2011.

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Sec. 7-131h. Charges by municipality. Reasonable charges may be made by a municipality, when necessary, to aid in the proper maintenance of recreational facilities developed on land acquired under sections 7-131d to 7-131k, inclusive.

(1963, P.A. 649, S. 6.)

History: (Revisor's note: In 1999 a reference to Sec. 7-131c was changed editorially by the Revisors to Sec. 7-131d, since Sec. 7-131c was repealed by P.A. 98-157).

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Sec. 7-131i. Municipal use of open space land. Land acquired or developed by any municipality, for which a state grant was awarded under sections 7-131d to 7-131k, inclusive, shall not be conveyed other than to another municipality or to the state for use for recreation or conservation or converted to any use other than recreation or conservation, except with the approval of the Commissioner of Energy and Environmental Protection, provided a municipality may use such land for a subsurface sewage disposal system if such system is adjacent to a municipally-owned building. If such grant was awarded for acquisition of land, such approval by said commissioner shall be conditioned on the agreement of the municipality to provide comparable land to be devoted to recreation or conservation, the full proceeds of any sale of land to be applied to such purpose and, if such proceeds exceed the amount required for such land acquisition, the balance shall revert to the state General Fund. If the municipality is unable to acquire comparable land, it shall pay to the state (1) if the land is sold, the same percentage of the proceeds of the sale as that granted by the state for the purchase of the land, or (2) if the land is not sold, such percentage of the fair market value of the land at the time of conversion to another use.

(1963, P.A. 649, S. 7; February, 1965, P.A. 369, S. 1; 1971, P.A. 872, S. 408; P.A. 78-359, S. 3, 8; P.A. 92-206, S. 3; P.A. 11-80, S. 1.)

History: 1965 act specified that land shall not be conveyed "other than to another municipality or to the state for use for recreation or conservation"; 1971 act substituted commissioner of environmental protection for council on agriculture and natural resources; P.A. 78-359 included land developed through grant; P.A. 92-206 authorized use of land acquired or developed by a municipality under Secs. 7-131c to 7-131k, inclusive, for subsurface sewage disposal systems under certain circumstances; (Revisor's note: In 1999 a reference to Sec. 7-131c was changed editorially by the Revisors to Sec. 7-131d, since Sec. 7-131c was repealed by P.A. 98-157); pursuant to P.A. 11-80, "Commissioner of Environmental Protection" was changed editorially by the Revisors to "Commissioner of Energy and Environmental Protection", effective July 1, 2011.

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Sec. 7-131j. Taking of land by state or public service company. If the state or any public service company, as defined in section 16-1, takes any land, for highway or other purposes, which is restricted to conservation or recreation use in accordance with an established open space program, whether or not a state grant was awarded under sections 7-131d to 7-131k, inclusive, to the municipality in which the land is located, the state or such company shall provide comparable land to be included in such program or shall grant or pay to the municipality sufficient funds to be used for such purpose; provided, before the state takes such land for highway or other purposes, it shall hold a public hearing in addition to the public hearing required by section 13a-58 or by any other section of the general statutes. At such public hearing and in the notice thereof, as provided for herein, the state shall set forth the description of the land proposed to be taken and the proposed use of such land, together with any reasons for the proposed taking of the open space land rather than other land. The state shall give notice of the time and place of such hearing by publication in a newspaper having a substantial circulation in each town, city or borough affected, at least twice, at intervals of not less than two days, the first not more than fifteen nor less than ten days and the second not less than two days before such hearing and such hearing shall be held within a period of not more than thirty and not less than fifteen days after any other public hearing required by section 13a-58 or by any other section of the general statutes. If the governing body of the municipality owning such land and the governing body of the municipality in which such land is located and the Commissioner of Transportation agree that a combination of the hearing required by section 13a-58 and the hearing required by this section will best serve the interests of the state and the municipality concerned, such combined hearing may be held after giving notice of such combined hearing in the manner provided in section 13a-58. At such combined hearing the state shall comply with the requirements of section 13a-58 and this section in regard to the information to be presented and the opportunity for all persons concerned to be heard. Except as hereinafter provided the state shall not take, for highway or other purposes, any such land unless the governing body of the municipality in which the land is located has, by majority vote of all its members, approved the proposed taking. If such governing body does not approve such proposed taking within ninety days after the public hearing provided for herein, the state may apply to the Superior Court, or to any judge thereof when said court is not in session, for an order permitting the state to take such land for highway or other purposes, notwithstanding the failure of the governing body of the municipality to approve the proposed taking.

The state shall serve upon the municipality a copy of such application not less than thirty days prior to the hearing thereon. Said court or judge shall hold a hearing on the application, at which hearing any interested citizen may be heard. If said court or judge, after consideration of all the facts and of the public policy of this state that open space land shall be preserved, finds that no land other than the land proposed to be taken will serve the purpose of such taking, it or he shall issue the order applied for.

(1963, P.A. 649, S. 8; February, 1965, P.A. 119; 609; 1969, P.A. 176, S. 1.)

History: 1965 acts added reference to the taking of land by public service companies, reference to payment to municipality and the proviso, and added specific provisions re procedure for taking land; 1969 act provided for combined hearings; (Revisor's note: In 1999 a reference to Sec. 7-131c was changed editorially by the Revisors to Sec. 7-131d, since Sec. 7-131c was repealed by P.A. 98-157).

General state power of condemnation, except for necessity to comply with section, adequate to permit taking of municipal park property. 154 C. 691. Insures that sufficient damages will be awarded to finance replacement for condemned facility. 165 C. 766. Section requires application of "substitute facilities" doctrine in cases of taking entire tract of parkland but where there is partial taking, section requires state to grant sufficient funds to condemnee to replace land condemned only and parkland is treated as having monetary value equal to its replacement cost just prior to taking. 169 C. 655.

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Sec. 7-131k. Acceptance of federal funds. Any municipality may accept federal funds for open space land acquisitions or development.

(1963, P.A. 649, S. 9; P.A. 78-359, S. 4, 8.)

History: P.A. 78-359 authorized acceptance of federal funds for "development".

See Sec. 22a-22(c) re receipt and disbursement of federal funds for planning, acquisition and development of state forest, park, fish and game facilities and for acquisition and development of lands by municipalities.

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LaSalette Park Soil Map Unit Descriptions:

Map Unit: 5—Wilbraham silt loam

Component: Wilbraham (80%)
The Wilbraham component makes up 80 percent of the map unit. Slopes are 0 to 3 percent. This component is on depressions on uplands, drainageways on uplands. The parent material consists of coarse-loamy lodgment till derived from basalt and/or sandstone and shale. Depth to a root restrictive layer, densic[1] material, is 20 to 36 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, November, and December. Organic matter content in the surface horizon is about 6 percent. Non-irrigated land capability classification is 4w. Actively farmed units classify as farmland of statewide importance. This soil meets hydric[2] criteria.

Map Unit: 6—Wilbraham and Menlo soils, extremely stony

Component: Wilbraham (60%)
The Wilbraham component makes up 60 percent of the map unit. Slopes are 0 to 3 percent. This component is on depressions on uplands, drainageways on uplands. The parent material consists of coarse-loamy lodgment till derived from basalt and/or sandstone and shale. Depth to a root restrictive layer, densic material, is 20 to 36 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, November, and December. Organic matter content in the surface horizon is about 6 percent. Non-irrigated land capability classification is 7s. This soil meets hydric criteria.

Component: Menlo (25%)
The Menlo component makes up 25 percent of the map unit. Slopes are 0 to 3 percent. This component is on depressions on uplands, drainageways on uplands. The parent material consists of coarse-loamy lodgment till derived from basalt and/or sandstone and shale. Depth to a root restrictive layer, densic material, is 20 to 36 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, June, July, August, September, October, November, and December. Organic matter content in the surface horizon is about 40 percent. Non-irrigated land capability classification is 7s. This soil meets hydric criteria.

Map Unit: 12—Raypol silt loam

Component: Raypol (80%)
The Raypol component makes up 80 percent of the map unit. Slopes are 0 to 3 percent. This component is on depressions on outwash plains, drainageways on outwash plains. The parent material consists of coarse-loamy eolian deposits over sandy and gravelly glaciofluvial deposits derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available

water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, May, November, and December. Organic matter content in the surface horizon is about 5 percent. Non-irrigated land capability classification is 4w. Actively farmed units classify as farmland of statewide importance. This soil meets hydric criteria.

Map Unit: 15—Scarboro muck, 0 to 3 percent slopes

Component: Scarboro (80%)
The Scarboro component makes up 80 percent of the map unit. Slopes are 0 to 3 percent. This component is on depressions, outwash plains, and drainageways. The parent material consists of sandy glaciofluvial deposits derived from schist and/or gneiss and/or granite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, November, and December. Organic matter content in the surface horizon is about 95 percent. Non-irrigated land capability classification is 5w. This soil meets hydric criteria.

Map Unit: 32C—Haven and Enfield soils, 8 to 15 percent slopes

Component: Haven (60%)
The Haven component makes up 60 percent of the map unit. Slopes are 8 to 15percent. This component is on outwash plains on valleys, terraces on valleys. The parent material consists of coarse-loamy eolian deposits over sandy and gravelly glaciofluvial deposits derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Non-irrigated land capability classification is 3e. This unit classifies as farmland of statewide importance. This soil does not meet hydric criteria.

Component: Enfield (25%)
The Enfield component makes up 25 percent of the map unit. Slopes are 8 to 15 percent. This component is on outwash plains on valleys, terraces on valleys. The parent material consists of coarse-silty eolian deposits over sandy and gravelly glaciofluvial deposits derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 70 percent. Non-irrigated land capability classification is 3e. This unit classifies as farmland of statewide importance. This soil does not meet hydric criteria.

Map Unit: 40B—Ludlow silt loam, 3 to 8 percent slopes

Component: Ludlow (80%)
The Ludlow component makes up 80 percent of the map unit. Slopes are 3 to 8 percent. This component is on drumlins on uplands, hills on uplands. The parent material consists of coarse-loamy lodgment till

derived from basalt and/or sandstone and shale. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, November, and December. Organic matter content in the surface horizon is about 5 percent. Non-irrigated land capability classification is 2e. All areas are prime farmland. This soil does not meet hydric criteria.

Map Unit: 43B—Rainbow silt loam, 3 to 8 percent slopes

Component: Rainbow (80%)
The Rainbow component makes up 80 percent of the map unit. Slopes are 3 to 8 percent. This component is on drumlins on uplands, hills on uplands. The parent material consists of eolian deposits over coarse-loamy lodgment till derived from gneiss and/or schist and/or sandstone and/or basalt. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, May, November, and December. Organic matter content in the surface horizon is about 4 percent. Non-irrigated land capability classification is 2e. All areas are prime farmland. This soil does not meet hydric criteria.

Map Unit: 82B—Broadbrook silt loam, 3 to 8 percent slopes

Component: Broadbrook (80%)
The Broadbrook component makes up 80 percent of the map unit. Slopes are 3 to 8 percent. This component is on drumlins on uplands, hills on uplands, till plains on uplands. The parent material consists of eolian deposits over coarse-loamy lodgment till derived from gneiss and/or schist and/or sandstone and/or basalt. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during March, April. Organic matter content in the surface horizon is about 4 percent. Non-irrigated land capability classification is 2e. All areas are prime farmland. This soil does not meet hydric criteria.

Map Unit: 82C—Broadbrook silt loam, 8 to 15 percent slopes

Component: Broadbrook (80%)
The Broadbrook component makes up 80 percent of the map unit. Slopes are 8 to 15 percent. This component is on drumlins on uplands, hills on uplands, till plains on uplands. The parent material consists of eolian deposits over coarse-loamy lodgment till derived from gneiss and/or schist and/or sandstone and/or basalt. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during March, April. Organic matter content in the surface horizon is about 4 percent. Non-irrigated land capability classification is 3e. This unit classifies as farmland of statewide importance. This soil does not meet hydric criteria

Map Unit: 87B—Wethersfield loam, 3 to 8 percent slopes

Component: Wethersfield (80%)
The Wethersfield component makes up 80 percent of the map unit. Slopes are 3 to 8 percent. This component is on drumlins on uplands, hills on uplands. The parent material consists of coarse-loamy lodgment till derived from basalt and/or sandstone and shale. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during February, March, and April. Organic matter content in the surface horizon is about 4 percent. Non-irrigated land capability classification is 2e. All areas are prime farmland. This soil does not meet hydric criteria.

Map Unit: 87C—Wethersfield loam, 8 to 15 percent slopes

Component: Wethersfield (80%)
The Wethersfield component makes up 80 percent of the map unit. Slopes are 8 to 15 percent. This component is on drumlins on uplands, hills on uplands. The parent material consists of coarse-loamy lodgment till derived from basalt and/or sandstone and shale. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during February, March, and April. Organic matter content in the surface horizon is about 4 percent. Non-irrigated land capability classification is 3e. This unit classifies as farmland of statewide importance. This soil does not meet hydric criteria.

Map Unit: 87D—Wethersfield loam, 15 to 25 percent slopes

Component: Wethersfield (80%)
The Wethersfield component makes up 80 percent of the map unit. Slopes are 15 to 25 percent. This component is on drumlins on uplands, hills on uplands. The parent material consists of coarse-loamy lodgment till derived from basalt and/or sandstone and shale. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during February, March, and April. Organic matter content in the surface horizon is about 4 percent. Non-irrigated land capability classification is 4e. This soil does not meet hydric criteria.

Map Unit: 88C—Wethersfield loam, 8 to 15 percent slopes, very stony

Component: Wethersfield (80%)
The Wethersfield component makes up 80 percent of the map unit. Slopes are 8 to 15 percent. This component is on drumlins on uplands, hills on uplands. The parent material consists of coarse-loamy lodgment till derived from basalt and/or sandstone and shale. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches

during February, March, and April. Organic matter content in the surface horizon is about 70 percent. Non-irrigated land capability classification is 6s. This soil does not meet hydric criteria.

Map Unit: 89D—Wethersfield loam, 15 to 35 percent slopes, extremely stony

Component: Wethersfield (80%)
The Wethersfield component makes up 80 percent of the map unit. Slopes are 15 to 35 percent. This component is on drumlins on uplands, hills on uplands. The parent material consists of coarse-loamy lodgment till derived from basalt and/or sandstone and shale. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during February, March, and April. Organic matter content in the surface horizon is about 70 percent. Non-irrigated land capability classification is 7s. This soil does not meet hydric criteria.

Map Unit: 306—Udorthents-Urban land complex

Component: Udorthents (50%)
The Udorthents component makes up 50 percent of the map unit. Slopes are 0 to 25 percent. This component is on urban land. The parent material consists of drift. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 59 inches during January, February, March, April, November, and December. Organic matter content in the surface horizon is about 4 percent. Non-irrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Urban land (35%)
Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Map Unit: W—Water

[1] Densic Material in this report refers to lodgement, or basal, till; a very dense substratum that restricts the movement of air, water, and roots.
[2] Hydric criteria describe soils found in wetlands.

Land Capability Classification:

Determinations of land capability involve consideration of the risks of land damage from erosion and other causes and the difficulties in land use resulting from physical land characteristics and from climate. Land capability, as used in the USA, is an expression of the effect of physical land characteristics and climate on the suitability of soils for crops that require regular tillage, for grazing, for woodland, and for wildlife habitat.

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to

management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, forestland, or engineering purposes.

In the capability system, soils are generally grouped at three levels: capability class, subclass, and unit.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. Capability classes are determined for both irrigated and non-irrigated land. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example, 2e. In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w*, *s*, or *c* because the soils in class 5 are subject to little or no erosion. These soils have other limitations that restrict their use to pasture, rangeland, forestland, wildlife habitat, or recreation. The significance of each subclass letter is described as follows:

Subclass letter e shows that the main problem is the hazard of erosion unless close-growing plant cover is maintained. The susceptibility to erosion and past erosion damage are the major soil-related factors affecting the soils that are assigned this subclass letter.

Subclass letter w shows that water in or on the soil interferes with plant growth or cultivation. In some soils the wetness can be partly corrected by artificial drainage. Ponding, a high water table, and/or flooding affect the soils that are assigned this subclass letter.

Subclass letter s shows that the soil has limitations within the root zone, such as shallowness of the root zone, a high content of stones, a low available water capacity, low fertility, and excessive salinity or sodicity (sodicity is a term given to the amount of sodium held in a soil). Overcoming these limitations is difficult.

Subclass letter c shows that the chief hazard or limitation is climate that is very cold or very dry. This subclass letter is used only in some parts of the United States.

Capability units are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, 2e-4 and 3e-6. The use of this category of the land capability classification is a state option. This category of the system is not stored in the soil survey database. For information about capability units, please contact the local NRCS State Soil Scientist. For locations of the offices of the State Soil Scientists, click on the State Contacts link in the upper portion of this window.

Reference:

"National Soil Survey Handbook," Part 622 (00-Exhibit 1), USDA, NRCS

United States Department of Agriculture
Natural Resources Conservation Service

CONNECTICUT

Planta Invasora — Invasive Plant

***Cirsium arvense* (L.) Scop.**

CARDO DEL CANADÁ

- Planta con hojas espinosas y muchas flores
  - Flores menos de 2.5 cm de ancho
  - Flores de color lila, moradas o a veces blancas
- Brácteas que cubren flores cerrados tienen cubierta de puntas moradas (* en foto)
- Planta crece hasta 1 metro de altura
- Tallo liso
- Hojas lobuladas, con pequeñas, finas y agudas espinas a lo largo del borde
- Cada flor es en sí un ramillo de florecitas, apiñadas juntas
  - Las florecitas al centro son las últimas de abrirse
- IMPORTANTE: Nuevas plantas brotan de "tallos" bajo la tierra, muy cerca unos a otros
  - Plantas pueden esparcirse sobre largas áreas

CANADA THISTLE

- Plant with prickly leaves and many flower heads
  - Flower heads less than 1" wide
  - Lilac, purple or (occasionally) white
- Bracts that enclose unopened flowers have purple tips (* see photo)
- Plant grows 2-3 feet tall
- Plant stalk is relatively smooth (lacks prickly wings)
- Leaves lobed with short, narrow, sharp spines on the margins
- Each flower head is a collection of tiny, tightly-packed flowers
  - Center flowers open last
- IMPORTANT: New plants spring up from underground "stems" and grow close together
  - Plants often cover large areas

EASTERN CONNECTICUT STATE UNIVERSITY

Written by/Escrito por Charlotte Pyle, USDA-NRCS
Traducido por/Translation by Carmen R. Cid, ECSU

NRCS Natural Resources Conservation Service

septiembre del 2011 — September 2011

Connecticut Department of Energy & Environmental Protection

AMERICAN KESTREL

Falco sparverius

State Threatened Species

Background
The American kestrel is a small, slender falcon that is about the size of a robin. It is found in open habitats that have plenty of nesting cavities and hunting perches.

Kestrels can be seen in the state throughout the year. They are considered uncommon residents in winter and somewhat common migrants in fall and spring. Migrant populations increased during the early 1900s but breeding populations were comparatively low. Kestrels were more numerous when agriculture was at its peak in Connecticut. Currently, with the disappearance of agriculture, along with the regrowth of forests and an increase in suburban development, open, grassy areas are in short supply. This change in Connecticut's landscape has caused many wildlife species that rely on open areas, including the kestrel, to experience long-term declines. Kestrels also were negatively affected by the use of organochlorine pesticides, such as DDT. DDT was banned from use nationwide in 1972.

The American kestrel was listed as threatened on Connecticut's Endangered, Threatened, and Special Concern Species List in 2004, primarily due to a lack of information, coupled with a perceived decline in nesting and migrating numbers and diminishing habitat.

Range
American kestrels are found throughout most of North and South America. Most of the kestrels that breed in North America overwinter in the United States and Mexico, although a small proportion migrate as far south as northern South America.

Description
The American kestrel is the smallest falcon found in North America. Like most falcons, kestrels have long, pointed wings and long tails. The birds are easily recognized by two vertical black lines on the cheeks and a rufous-colored back and tail. The female has rufous-colored wings while the male has black-banded, bluish-gray wings. This species is the only falcon in which the male and female show such a marked difference in plumage. The kestrel ranges in size from 9 to 12 inches long with females being larger than males.

Habitat and Diet
Kestrels prefer open grassy or shrubby areas with short vegetation in which to hunt for their prey. In Connecticut, kestrels are usually seen around agricultural areas (hay fields, orchards, pastures),

airports, large parks, and power line right-of-ways. Meadows, grassy fields, and old fields also may be inhabited. It is not unusual to find kestrels using urban and suburban areas and even buildings (barns, silos, cornices) for nest sites. Kestrels require natural tree cavities or nest boxes for nesting, along with perches in the form of trees, shrubs, or telephone poles.

The kestrel's diet varies seasonally and consists mainly of insects, including grasshoppers, crickets, beetles, dragonflies, butterflies, moths, and cicadas. Mice, voles, shrews, small snakes, frogs, and small birds also are eaten. Kestrels typically hunt from a conspicuous perch, although they occasionally hover over an open area when perches are lacking.

Life History

Connecticut's nesting kestrels begin courtship in late March to early April. An average of 4 to 5 brown-spotted eggs are laid by the end of April in a natural tree cavity or man-made nest box on little or no nesting material. They are incubated, primarily by the female, for 29 to 31 days. Males catch most of the food for the brooding female and, later, for the developing young. Usually 3 to 5 chicks are hatched and will grow quickly. The chicks are ready to fledge (reach flying stage) about a month after hatching. After fledging, the young stay with the adult birds for several weeks. In Connecticut, American kestrels will usually have 1 brood per season and will renest if the first nest fails.

Interesting Facts

Another name for the kestrel is the sparrow hawk, although birds are not a main prey item.

Kestrels have a habit of pumping their tail feathers up and down when perched, especially after landing. They are known for their rapid flight and have been recorded to fly between 22 and 39 m.p.h.

Kestrels are quite vocal. Their call is a loud, repeated "killy, killy killy" when they are excited or alarmed.

American kestrels do not need to drink free-standing water. They get all the water they need from the moisture of their prey.

Some of the predators that hunt kestrels are great-horned owls and red-tailed hawks. Other predators that have been known to attack raptors include coyotes, bobcats, skunks, raccoons, crows, and ravens.

Populations of the larger Cooper's hawk increased throughout northeastern North America from 1976-2003, and studies at Hawk Mountain Sanctuary, in Pennsylvania, and elsewhere have suggested this species preys on kestrels.

Kestrels are protected by the federal Migratory Bird Treaty Act of 1918 and Connecticut General Statutes Sec. 26-92 and Sec. 26-311 (threatened and endangered species legislation).

Conservation Concerns

According to Hawk Mountain Sanctuary, data from raptor migration counts, Breeding Bird Surveys, and Christmas Bird Counts indicate that American kestrel populations have declined in much of northeastern North America (including Connecticut) since 1974. Loss of habitat is the most likely cause of the kestrel decline in Connecticut. The number of farms in the state has been decreasing, many old agricultural fields are returning to forest, and suburban development has replaced suitable habitat. A lack of available nest cavities also can limit the number of kestrel breeding pairs.

What You Can Do

Because kestrels do not excavate their own nesting cavities, they seek out ready-made homes, such as abandoned woodpecker holes or nest boxes provided by people. Specially-made nest boxes have helped kestrels throughout the country in areas where there are few natural cavities. Nest box programs for kestrels enable populations to increase in locations where nest sites are limiting. If you live near suitable habitat, you should consider providing and maintaining nest boxes for kestrels. Box plans are available by sending an E-mail to the Wildlife Division at deep.wildlife@ct.gov. To be successful, nest boxes should be placed in open field habitat. Preferred habitats are grasslands, pastures, orchards, and hay fields with cover at about 10 inches high. Nest boxes require continuous maintenance and should be monitored to prevent non-native starlings from using them. A program to promote natural nest sites (cavities in snags) should occur along with a nest box program.

The production of this Endangered and Threatened Species Fact Sheet Series is made possible by donations to the Endangered Species-Wildlife Income Tax Checkoff Fund.
(rev. 4/15)

Connecticut Department of Energy & Environmental Protection

Eastern Hognose Snake

(Heterodon platirhinos)

IDENTIFICATION: A medium-size stoutly built snake with a distinctive upturned rostral scale, given the appearance of an upturned "nose." The dorsum is highly variable in pattern, some animals are uniformly brown or olive green, others have vivid banding of black alternating with brick red or yellow. The dorsal scales are keeled, the venter yellow with black pigment, the tail quite short. Adult total length 530-820 mm.

The hognose snake's center of distribution in Connecticut is the extensive glacial sand and gravel deposits that span the central portions of the eastern and western hills. It has been found up to 1,200 feet. In the Central Connecticut Lowland and coastal zone, there are far more historical records than recent sightings, indicating that this species has declined in this more intensely developed part of the state. Hognose snakes appear to occur at very low population levels when compared with other snakes. Declines of hognose snakes have been reported along the entire northern limit of their range, from New England westward to Michigan. The hognose is a "Special Concern" species in Connecticut, and under the Connecticut Code (Sec. 26-55-3-E) possession is limited to a single specimen.

Snakes | Amphibians and Reptiles in Connecticut

Eastern Box Turtle

Terrapene carolina carolina

State Species of Special Concern

Description
The eastern box turtle is probably the most familiar of the 8 species of turtles found in Connecticut's landscape. It is known for its high-domed carapace (top shell). The carapace has irregular yellow or orange blotches on a brown to black background that mimic sunlight dappling on the forest floor. The plastron (under shell) may be brown or black and may have an irregular pattern of cream or yellow. The length of the carapace usually ranges from 4.5 to 6.5 inches, but can measure up to 8 inches long. The shell is made up of a combination of scales and bones, and it includes the ribs and much of the backbone.

Each individual turtle has distinctive head markings. Males usually have red eyes and a concave plastron, while females have brown eyes and a flat plastron. Box turtles also have a horny beak, stout limbs, and feet that are webbed at the base. This turtle gets its name from its ability to completely withdraw into its shell, closing itself in with a hinged plastron. Box turtles are the only Connecticut turtle with this ability.

Range
Eastern box turtles are found throughout Connecticut, except at the highest elevations. They range from southeastern Maine to southeastern New York, west to central Illinois, and south to northern Florida.

Habitat and Diet
In Connecticut, this terrestrial turtle inhabits a variety of habitats, including woodlands, field edges, thickets, marshes, bogs, and stream banks. Typically, however, box turtles are found in well-drained forest bottomlands and open deciduous forests. They will use wetland areas at various times during the season. During the hottest part of a summer day, they will wander to find springs and seepages where they can burrow into the moist soil. Activity is restricted to mornings and evenings during summer, with little to no nighttime activity, except for egg-laying females. Box turtles have a limited home range where they spend their entire life, ranging from 0.5 to 10 acres (usually less than 2 acres).

Box turtles are omnivorous and will feed on a variety of food items, including earthworms, slugs,

snails, insects, frogs, toads, small snakes, carrion, leaves, grass, berries, fruits, and fungi.

Life History
From October to April, box turtles hibernate by burrowing into loose soil, decaying vegetation, and mud. They tend to hibernate in woodlands, on the edge of woodlands, and sometimes near closed canopy wetlands in the forest. Box turtles may return to the same place to hibernate year after year. As soon as they come out of hibernation, box turtles begin feeding and searching for mates.

The breeding season begins in April and may continue through fall. Box turtles usually do not breed until they are about 10 years old. This late maturity is a result of their long lifespan, which can range up to 50 to even over 100 years of age. The females do not have to mate every year to lay eggs as they can store sperm for up to 4 years. In mid-May to late June, the females will travel from a few feet to more than a mile within their home range to find a location to dig a nest and lay their eggs. The 3 to 8 eggs are covered with dirt and left to be warmed by the sun. During this vulnerable time, skunks, foxes, snakes, crows, and raccoons often raid nests. Sometimes, entire nests are destroyed. If the eggs survive, they will hatch in late summer to early fall (about 2 months after being laid). If they hatch in the fall, the young turtles may spend the winter in the nest and come out the following spring.

As soon as the young turtles hatch, they are on their own and receive no care from the adults. This is a dangerous time for young box turtles because they do not develop the hinge for closing into their shell until they are about 4 to 5 years old. Until then, they cannot entirely retreat into their shells. Raccoons, skunks, foxes, dogs, and some birds will prey on young turtles.

Conservation Concerns
The eastern box turtle was once common throughout the state, mostly in the central Connecticut lowlands. However, its distribution is now spotty, although where found, turtles may be locally abundant. Because of the population decline in Connecticut, the box turtle was added to the state's List of Endangered, Threatened, and Special Concern Species when it was revised in 1998. It is currently listed as a species of special concern. The box turtle also is protected from international trade by the 1994 CITES treaty. It is of conservation concern in all the states where it occurs at its northeastern range limit, which includes southern New England and southeastern New York.

Many states have laws that protect box turtles and prohibit their collection. In Connecticut, eastern box turtles cannot be collected from the wild (DEP regulations 26-66-14A). Another regulation (DEP regulations 26-55-3D) "grandfathers" those who have a box turtle collected before 1998. This regulation limits possession to a single turtle collected before 1998. These regulations provide some protection for the turtles, but not enough to combat some of the even bigger threats these animals face. The main threats in Connecticut (and other states) are loss and fragmentation of habitat due to deforestation and spreading suburban development; vehicle strikes on the busy roads that bisect the landscape; and indiscriminate (and now illegal) collection of individuals for pets.

Loss of habitat is probably the greatest threat to turtles. Some turtles may be killed directly by construction activities, but many more are lost when important habitat areas for shelter, feeding, hibernation, or nesting are destroyed. As remaining habitat is fragmented into smaller pieces, turtle populations can become small and isolated.

Adult box turtles are relatively free from predators due to their unique shells. The shell of a box turtle is extremely hard. However, the shell is not hard enough to survive being run over by a vehicle. Roads bisecting turtle habitat can seriously deplete the local population. Most vehicle fatalities are pregnant females searching for a nest site.

How You Can Help

- Leave turtles in the wild. They should never be kept as pets. Whether collected singly or for the pet trade, turtles that are removed from the wild are no longer able to be a reproducing member of a population. Every turtle removed reduces the ability of the population to maintain

itself.

- Never release a captive turtle into the wild. It probably would not survive, may not be native to the area, and could introduce diseases to wild populations.
- Do not disturb turtles nesting in yards or gardens.
- As you drive, watch out for turtles crossing the road. Turtles found crossing roads in June and July are often pregnant females and they should be helped on their way and not collected. Without creating a traffic hazard or compromising safety, drivers are encouraged to avoid running over turtles that are crossing roads. Also, still keeping safety precautions in mind, you may elect to pick up turtles from the road and move them onto the side they are headed. Never relocate a turtle to another area that is far from where you found it.
- Learn more about turtles and their conservation concerns. Spread the word to others on how they can help Connecticut's box turtle population.

The production of this Endangered and Threatened Species Fact Sheet Series is made possible by donations to the Endangered Species-Wildlife Income Tax Checkoff Fund.
(5/08)

Connecticut Department of Energy & Environmental Protection

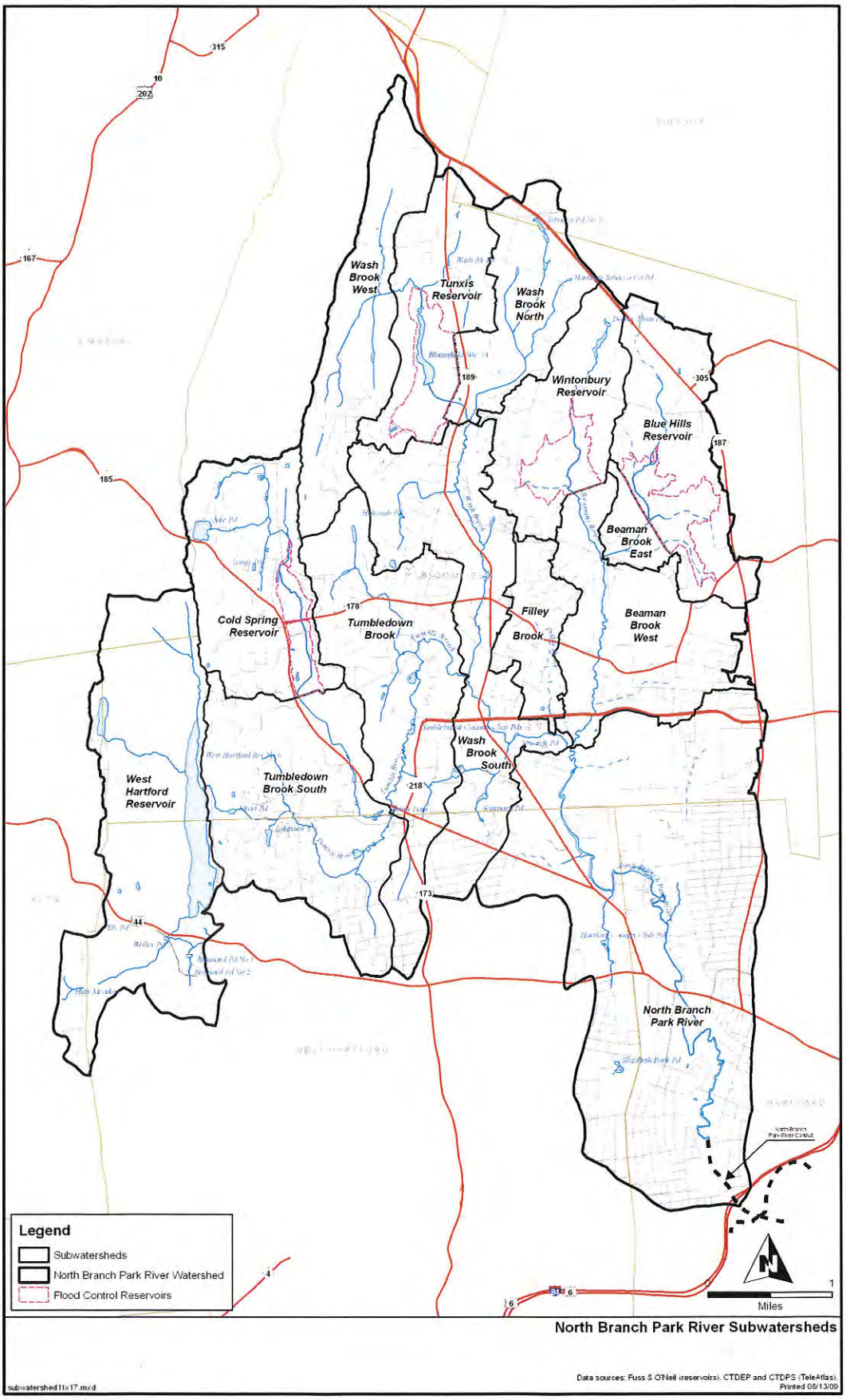
Eastern Ribbon Snake

(Thamnophis s. sauritus)

IDENTIFICATION: A medium-size, very thin, brown snake with keeled dorsal scales. Three distinct longitudinal yellow stripes from the head to the tail tip, the lateral stripes are confined to the third and fourth dorsal scale rows. The venter ranges from yellow to red brown, the tail is very long. The head is distinctly bicolored, the area below the eyes and under the chin bright white. Females are considerably larger than males, adult total length 510-810 mm.

Ribbon snakes are found statewide, but their distribution is very spotty. They are undergoing a long-term decline in the Connecticut. This may be correlated with a reduction of their preferred habitat, open-canopy wet sedge meadows in Connecticut over the last fifty to seventy-five years. This reduction is a result of both draining wet meadows and impounding marshy areas to make ponds and reservoirs. In many parts of the state red maple swamps have replaced open wet meadows, though the recolonization of Connecticut by beaver may help restore the cycle of wet meadow formation. The eastern ribbon snake is considered a "Special Concern" species in Connecticut, and under Connecticut Code (Sec. 26-55-3-F) possession is limited to a single specimen.

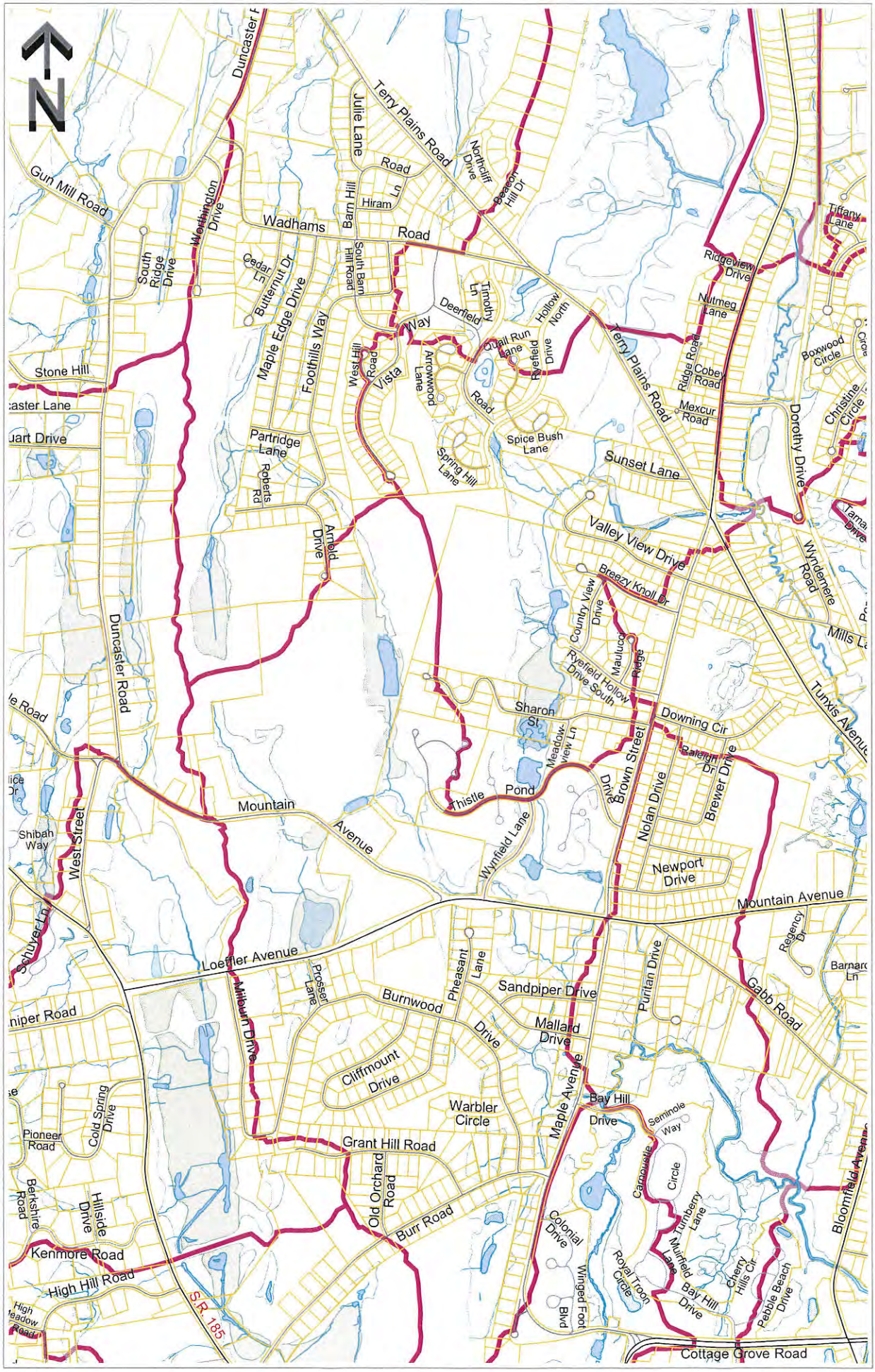
Snakes | Amphibians and Reptiles in Connecticut



North Branch Park River Subwatersheds

Data sources: Fuss & O'Neil (reservoirs), CTDEP and CTDPS (TeleAtlas).
Printed 08/13/09

subwatershed11x17.mxd


N
Gun Mill Road
Duncaster Drive
Julie Lane
Terry Plains Road
Northcliff Drive
Beacon Hill Dr
Tiffany Lane
Worthington Drive
Wadhams Road
Barn Hill Road
Hiram Ln
South Ridge Drive
Cedar Ln
Butternut Dr
South Barn Hill Road
Maple Edge Drive
Foothills Way
Deerfield Way
Timothy Ln
Hollow North
Ridgeview Drive
Nutmeg Lane
Stone Hill
West Hill Road
Vista
Arrowwood Lane
Quail Run Lane
Ryefield Drive
Ridge Road
Cobey Road
Boxwood Circle
Mexcur Road
Dorothy Drive
Partridge Lane
Roberts Rd
Spice Bush Lane
Spring Hill Lane
Sunset Lane
Valley View Drive
Arnold Drive
Breezy Knoll Dr
Wyndemere Road
Country View Drive
Ryefield Hollow Drive South
Maulucci Ridge
Tunxis Avenue
Duncaster Road
Sharon St
Downing Cir
Meadow-view Ln
Brown Street
Raleigh Dr
Brewer Drive
Nolan Drive
Thistle Pond
Mountain Avenue
West Street
Shibah Way
Wynfield Lane
Newport Drive
Schuyler Ln
Loeffler Avenue
Regency Dr
Prosser Lane
Pheasant Lane
Sandpiper Drive
Puritan Drive
Gabb Road
Burnwood Drive
Mallard Drive
Milburn Drive
Cliffmount Drive
Cold Spring Drive
Pioneer Road
Warbler Circle
Maple Avenue
Bay Hill Drive
Seminole Way
Grant Hill Road
Old Orchard Road
Berkshire Road
Hillside Drive
Burr Road
Colonial Drive
Kenmore Road
High Hill Road
S.R. 185
Winged Foot Blvd
Royal Troon Circle
Bay Hill Drive
Cherry Hills Cir
Pebble Beach Drive
Bloomfield Avenue
Cottage Grove Road

TECH BRIEFS
CTI Technology Transfer Center
UNIVERSITY OF CONNECTICUT SCHOOL OF ENGINEERING
TECH BRIEF 2014-5

Sharing the Road for Motorists, Pedestrians and Cyclists

When we look at roadway safety much of the concern is for vehicle safety. However in many cases a vehicle must share the road with pedestrians and cyclists due to the absence of the necessary infrastructure for them. Many local roads do not have adequate width for separate travel areas for all users which is a safety concern. The FHWA has identified both pedestrians and cyclists as vulnerable road users, and Connecticut has introduced the "Share the Road" campaign. Guidance is given for how each user can help in sharing the road.

The Share the Road program strives to improve the knowledge of all roadway users – motorists, bicyclists, equestrians, motorcyclists, pedestrians – to promote safe travel and minimize the likelihood of crashes. Whether you are driving your car, truck, SUV, riding your bike, or merely walking, your safety depends on sharing the road safely with other vehicles and users.

"Three Feet" Passing Rule – IT'S THE LAW!

Connecticut General Statute Section 14-232, effective October 1, 2008, requires Connecticut motorists to allow at least three feet of separation when overtaking and passing cyclists. Failure to do so could cause motorists to receive a fine under the motor vehicle code "failure to grant the right of way to a bicycle" (14-242). Because of the large disparities in size, weight and speed between bicycles and motor vehicles, cyclists are at a tremendous disadvantage in the result of a collision with a car or truck. This new law strives to increase motorist awareness of bicycles, and to make conditions safer by preventing collisions. However, there is no MUTCD approved sign that can be used to communicate the new law. According to FHWA, roadside signing should not be used to convey laws as public awareness campaigns are more appropriate and effective for promoting such laws.

Tips for Motorists:

Drive Cautiously

- Reduce speed when encountering cyclists
- Don't tailgate, especially in bad weather
- Recognize hazards cyclists may face and give them space
- Look out for cyclists coming the wrong way

Yield to Cyclists
- Bicycles are considered vehicles
- Cyclists should be given the appropriate right of way
- Allow extra time for cyclists to traverse intersections

Be Considerate
- Scan for cyclists in traffic and at intersections
- Do not blast your horn in close proximity to cyclists
- Look for cyclists when opening doors

Pass with Care
- When passing, leave three feet between you and a cyclist
- Wait for safe road and traffic conditions before you pass
- Check over your shoulder before moving back

Note: It is illegal to pass a cyclist to turn right immediately after

Watch for Children
- Children on bicycles are often unpredictable
- Expect the unexpected and slow down
- Don't expect children to know traffic laws
- Because of their size children can be harder to see

Note: Children may be on the sidewalk or in the road. The legality of sidewalk riding is determined by municipalities but most towns permit children to ride on the sidewalk

Tips for Pedestrians:

Pedestrians need to be careful of all vehicles and never take chances!

Walk on Sidewalks
- Walk on sidewalks and in crosswalks whenever possible. By law, pedestrians may not walk along or upon a roadway where a sidewalk is provided
- If sidewalks are not available, walk as far to the side of the road as you safely can **facing traffic** - this allows you to see cars coming at you rather than having them approach you from behind.
- Obey traffic lights and walk signals.
- Remember that trucks and buses make wide turns and occasionally run up onto the corner of the sidewalk, so it is important for you to be alert and be prepared to move back if necessary.

Make Yourself Visible
- Dress to be seen.
- Wear bright or reflective clothing, especially when walking at night.
- Carry a flashlight if you have one.
- As a pedestrian, you are not always visible to drivers; especially for large truck and bus drivers.

Stopping Distances
- Use caution when crossing intersections and streets.
- You may think vehicles will stop for you, but they may not see you or even be able to stop.
- Remember, some vehicles, such as trucks, need much more space to stop than passenger vehicles.

Know Your No-Zones
- Be careful of the blind spots, or No-Zones, around cars, trucks, and buses when walking near or around them, and never walk behind a car or a truck that is backing up.
- Always assume the driver does not know that you are there and that it is up to you to stay safe.

Tips for Cyclists:

The same laws that apply to motorists apply to cyclists!

On the Road
- Obey all traffic control devices
- Use hand signals to indicate stops and turns to other users

Always Wear a Properly Fitting Helmet
- 74% of bicycle fatalities involve a head injury
- Wear your helmet snug and level, no more than two fingers above your brow
- Before you get on your bike, put on your helmet, no matter how short the trip

Make Sure That Your Bicycle Is Safe
- Make sure that tires are properly inflated and that brakes and other running gear, like derailleurs, are working properly

- Loose seats and handlebars are very dangerous - check them before you begin your ride, and adjust if needed

Ride with Traffic

- Always ride on the right side, with the flow of traffic
- Use the furthest right lane that heads to your destination and stay as far to the right as practical within that lane
- Slower moving cyclists and motorists stay to the right
- Don't ride more than 2 abreast and don't impede flow of vehicular traffic (Connecticut General Statute 14-286 b&c requires that cyclists must form a single file line to allow vehicular traffic to pass when approached by a vehicle.)

Be Visible

- Wear brightly colored clothing that provides contrast
- Use a white light in front to see and be seen at night
- Use a red light on the back of your bike or helmet in low light conditions
- Use reflective tape or clothing
- Announce yourself by making eye contact with motorists!

Signal to Pedestrians

- Pedestrians have the right of way. At a reasonable distance, give them an audible signal before overtaking them (i.e. passing on your left!)

Ride Predictably

- Ride in a straight line
- Don't swerve in the road or between parked cars
- Check for traffic before entering street or intersection
- Anticipate hazards and adjust your position accordingly

NOTE: Check local town ordinances to find appropriate places to ride your bicycle.

Report an Issue

The League of American Bicyclists reports that approximately 50 percent of all bicycle crashes are falls. Falls are caused by such factors as potholes, storm grates, loose gravel or dirt, and near misses with other bikes, cars, and pedestrians. Currently, crash reports are only submitted to CTDOT by police for crashes involving a motor vehicle. Thus, most falls go unreported and undocumented and many of the factors that cause falls go unfixed.

The Connecticut Department of Transportation would like to begin cataloging/documenting some of the hazards to bicyclists that cause falls on the road. Using data collected and through other sources, CTDOT plans to address the most pressing areas of need, with the ultimate goal being to increase bicycle safety by reducing all bicycle crashes on roads (bicycle – motor vehicle crashes, bicycle - bicycle crashes, bicycle - pedestrian crashes, and bicycle-only crashes).

ONLINE RESOURCES

See the Connecticut Statewide Bicycle and Pedestrian Transportation Plan:
http://www.ct.gov/dot/cwp/view.asp?a=3531&q=259656

Bicycle Safety and Training Websites:
- League of American Cyclists Safety Courses

www.bikeleague.org/programs/education/
- Bike and Pedestrian Education

http://www.bikewalkct.org/bike-education.html
- NHTSA Bike and Pedestrian Safety

http://www.nhtsa.gov/Driving+Safety/SRTS/srts-kit
- "How to Survive Road Hazards" (pdf 26.3 kb)

www.ct.gov/dot/lib/dot/documents/dsafety/roadhazards.pdf

Connecticut Bicycle Organizations
- Connecticut Bicycle and Pedestrian Advisory Board

www.ctbikepedboard.org
Email Non-Motorized Coordinator Katherine Rattan : katherine.rattan@ct.gov
- Bike Walk Connecticut

http://www.bikewalkct.org/
- Safe Routes to School

www.walkitbikeitct.org
Email Safe Routes to School Coordinator Carla Iezzi: carla.iezzi@po.state.ct.us

Cycling Clubs
- AMC - Appalachian Mountain Club

www.ct-amc.org
- USA Cycling

http://www.usacycling.org/clubs/

More Useful Links
- National Center for Biking and Walking

www.bikewalk.org
- Share the Road CT

www.sharetheroadct.org
- Complete Streets Central

www.ct.gov/dot/completestreets
- Bicycle and Pedestrian Dashboard

www.ct.gov/dot/bikeped
- Street Smarts

www.cityofnewhaven.com/streetsmarts

For additional safety information please contact our Safety Circuit Rider:
Anthony Lorenzetti, P.E.
Phone: 860-486-5847
Email: Lorenzetti@engr.uconn.edu

For other Tech and Safety Briefs or more information about the Technology Transfer Center please visit us at: www.T2Center.uconn.edu

Revised 02-23-2015

About the Team

The Connecticut Environmental Review Team (ERT) is a group of professionals in environmental fields drawn together from a variety of federal, state, regional agencies and private consultants. Specialists on the Team include geologists, biologists, foresters, soil specialists, engineers and planners. The ERT operates with state funding under the supervision of the Connecticut Resource Conservation and Development (RC&D) Area — a 169 town region.

The services of the Team are available as a public service at no cost to Connecticut towns.

Purpose of the Team
The Environmental Review Team is available to help towns and land trusts in the review of sites proposed for acquisition, conservation, preservation, agriculture and other land use activities. To date, the ERT has been involved in reviewing a wide range of projects including subdivisions, landfills, commercial and industrial developments, sand and gravel excavations, active adult, recreation/open space projects, watershed studies and resource inventories.

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

Requesting a Review
Environmental reviews may be requested by the chief elected official of a municipality and/or the chairman of town commissions such as planning and zoning, conservation, inland wetlands, parks and recreation or economic development and land trusts. Requests should be directed to ERT Coordinator. A request form should be completely filled out and should include the required materials. When this request is reviewed by the and approved by the ERT Subcommittee, the Team will undertake the review on a priority basis.

For additional information and request forms regarding the Environmental Review Team please contact the ERT Coordinator: 860-345-3977, Eastern Connecticut RC&D Area, P.O. Box 70, Haddam, Connecticut 06438, e-mail: connecticutert@aol.com.

About the Connecticut RC&D Area

Resource Conservation and Development (RC&D) is a program of the United States Department of Agriculture (USDA). The Secretary of Agriculture gave the Natural Resources Conservation Service (NRCS) [formerly the Soil Conservation Service] responsibility for administering the program. RC&D is unique because it is led by local volunteer councils that help people care for and protect their natural resources in a way that improves the local economy, environment, and living standards. RC&D is a way for people to work together to plan and carry out activities that will make their area a better place in which to live.

Interest in creating the Eastern Connecticut RC&D Area first started in 1965. An application for assistance was prepared and submitted in June 1967 to the Secretary of Agriculture for planning authorization. This authorization was received in August 1968. In 1983, an application by the Eastern Connecticut RC&D's Executive Council was approved by USDA and NRCS to enlarge the area to an 86 town region. The western region RC&D known as King's Mark was authorized in the 1970's and covered 83 towns. The two areas officially merged in October 2014 to form the Connecticut RC&D Area, Inc. which covers the entire state.

The focus of the Connecticut RC&D Program is to help people care for and protect their natural resources, improve local economies, and sustain a high quality of life. The program derives its success from its ability to connect individuals, communities, government entities, and grassroots organizations. These connections and partnerships enable the development of shared visions and resource networks that work toward a healthy future for Connecticut. Current members on the RC&D Council represent the Working Lands Alliance, The Last Green Valley, CT Forest and Park Association, CT Farmland Trust, Town of Canterbury, RiverCOG, COGCNV, NorthCentral Conservation District, Eastern Conservation District, CT River and Estuary Conservation District and others.

For more information please visit their website at: www.easternrcd-ct.org.