

WILLINGTON CONNECTICUT



A Natural Resource Inventory and Open Space Conservation Plan 2007

Willington Conservation Commission

A Natural Resource Inventory and Open Space Conservation Plan

Town of Willington, Connecticut

Prepared by the Willington Conservation Commission

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Willington Conservation Commission

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- Brooklyn Conservation Commission – Open Space and Conservation Plan, 1993
- Willington Plan of Conservation and Development Committee and Clough, Harbour & Associates, LLP – Town of Willington Plan of Conservation & Development, 2006
- Woodstock Conservation Commission - Plan of Open Space and Conservation, 2001

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I. INTRODUCTION

RESPONSIBILITIES OF THE CONSERVATION COMMISSION

The Willington Conservation Commission was established by a town ordinance on October 28, 1967, pursuant to Section 7-131a of the General Statutes of the State of Connecticut. The commission was charged with performing all the duties imposed under this statute “concerning the development and conservation of natural resources within the Town of Willington.” Later legislation expanded the powers and duties of conservation commissions.

The Conservation Commission is required to keep an index of all open areas, publicly or privately owned, including open marshlands, swamps and other wetlands, for the purpose of obtaining information on the proper use of such areas, and must conduct research into the utilization and possible utilization of land areas of the town. The Commission may inventory natural resources, formulate watershed management and drought management plans, and recommend to other municipal agencies proposed land use changes and plans and programs for the development and use of open areas. In addition, it may be delegated the authority to supervise and manage town-owned open space or park property.

PURPOSE OF THE INVENTORY AND PLAN

Preparing a Natural Resources Inventory and developing an Open Space Conservation Plan are essential to enabling the Conservation Commission to fulfill its statutory responsibilities. In addition to the legal requirements, development of this inventory and plan is necessary for the creation of a vision of how Willington should grow and develop in the future, thus providing further support and direction to the Town’s Plan of Conservation and Development (POCD) [Willington, 2006]. The ultimate goal is for Willington to find the right balance among economic development, environmental protection and quality of life. In respect to this balance, the Conservation Commission considered that a sound land ethic “*reflects the existence of an ecological conscience, and this in turn reflects a conviction of individual responsibility for the health of the land. Health is the capacity of the land for self-renewal. Conservation is our effort to understand and preserve this capacity.*” [Leopold, 1949]. All of Willington’s citizens share in this responsibility to conserve the Town’s natural and cultural resources.

A primary function of the inventory is to identify the current quantity, quality and distribution of Willington’s natural and cultural resources. This information will be used for the following purposes:

- Create goals and recommendations to protect these resources;
- Identify open space priorities and develop a map of “Conservation Priority Areas”;
- Formulate a plan to protect existing open space and acquire additional open space;
- Provide regulatory commissions, selectmen, landowners, developers and townspeople with objective data necessary to make informed land use decisions;
- Share data with other local, regional and state organizations to coordinate efforts to conserve environmental and cultural resources on a larger scale; and
- Help foster in Willington’s townspeople an awareness of the Town’s natural and cultural resources and generate active support for conserving these assets on a personal as well as municipal level.

ECONOMIC AND ENVIRONMENTAL BENEFITS OF OPEN SPACE

Thoughtful conservation and open space planning can provide many economic benefits. Research and rationale cited below provide ample justification for planned open space and conservation in Willington:

- Studies have shown that residential development costs a town more money in terms of service expenditure (e.g., schools, fire/police protection, road maintenance and storm water management) than the property provides in tax revenue. In contrast, farm, forest and open space land usually provide a town more money in real estate taxes than they require in service costs. In 1995, the Cost of Community Services study published by the Southern New England Forest Consortium [SNEFC, 1995] evaluated 11 towns in southern New England and determined that for every dollar in real estate tax generated by residential development, it costs a town on average about \$1.14 to provide residential services. For every tax dollar raised from the commercial/industrial sector, towns spent an average of \$0.43 to support public services. While this may appear as a positive net gain, it does not take into consideration other costs associated with commercial/industrial development such as the potential for increased residential development, increased traffic and noise pollution, the loss of open space land to filter water and air, and the need to provide recreational opportunities. For every dollar of tax revenue generated by farm, forest and other open space land, on average only \$0.42 in expenditures is required. This leaves \$0.58 per dollar raised to offset other municipal expenses. These forest, farm and open space lands more than pay for themselves. They help cover the net loss the towns experience on their other land uses and also provide numerous intangible benefits.
- Communities with sound conservation and land use plans have been shown to improve their bond ratings. Rating agencies, such as Moody's, often respond positively to the existence and implementation of formal Conservation and Open Space plans as they tend to help moderate growth and the fiscal health of a community. Smart land use planning promotes cost-effective development, helps ensure a good quality of life for residents and reduces the risk of expensive environmental clean-ups that may result from poor land use decisions [Thomas, 1991].
- The North East State Foresters Association has also reported that residential property adjacent or close to committed open space increases in value. This is a benefit for both the individual landowner and the town in the form of increased tax revenues [NESFA, 2000].
- Open space, historic areas and scenic lands can boost local economies by attracting tourism and recreational dollars to a community. Outdoor recreation, in particular, represents one of the fastest growth areas in the U.S. economy. Public and private parks and open land support most of these outdoor recreational activities, including hiking, camping, biking, birding, boating, fishing, swimming, skiing, and snowmobiling [Lerner, 1999].
- A study commissioned in Massachusetts by The Trust for Public Land [TTPL, 1999] showed that towns with the most permanently protected land have the lowest tax rates, on average.

II. RESOURCE IDENTIFICATION AND MAPPING

OVERVIEW

The Willington Conservation Commission spent many months reviewing sources of conservation information to determine which natural resources and cultural features were important to catalog and protect. We investigated various methodologies used by other towns and decided to model our inventory and plan on the work done previously by the Conservation Commissions in Brooklyn and Woodstock, Connecticut. We sought advice and assistance from additional sources to determine what information to gather, how to interpret it and how to create basic and integrated maps. These sources, which are listed in the acknowledgement section, included many individuals and organizations with expertise in land use and conservation issues.

As part of the inventory, maps of resources and features in Willington were created and identified in two categories:

- Natural resources and features which are created by and/or are dependent on natural processes.
- Cultural resources and features which are the result of or affected by human impacts.

Each of these resource maps and its source information is listed in Table 1, “Maps in the Willington Resource Inventory.” A description of each map is also presented below. Many of the maps were created using geographic information system (GIS) data available from the Connecticut Department of Environmental Protection (DEP). Maps were developed using the best data available and known to us and represent the most current public and private information. As new information becomes available, they will be reviewed and updated. The Commission welcomes suggestions for changes, corrections or additions to the map set.

Table 1. Maps in the Willington Resource Inventory

Map Number	Map Name	Source
1	Streams, Water Bodies, Floodplains	DEP Hydrology; Flood Insurance Rate Maps prepared for Willington by FEMA
2	Regional Drainage Basins	DEP Drainage Basins
3	Drainage Sub-basins	DEP Drainage Basins
4	Wetland and Steep Slope Soils	DEP Soils Maps
5	Aquifers (Stratified Drift)	DEP Groundwater and Aquifer Maps
6	Quinebaug Highlands Landscape	The Nature Conservancy
7	Land Cover	DEP Landsat Imagery
8	Productive Forest Soils	DEP Forest Soils Maps
9	Endangered Species and Significant Natural Communities	DEP Natural Diversity Database (NDDDB)

Map Number	Map Name	Source
10	Productive Wildlife Habitats and Corridors	DEP Forest Soils, Wetland and Steep Slope Soils, Hydrology and NDDDB; Willington Committed Open Space Map
11	Land in Agricultural Use	Willington Town Assessor - Properties classified under Public Act 490 as in agricultural use
12	Productive Farmland Soils	DEP Agricultural Soils
13	Archaeologically Sensitive Areas	State Archaeologist's Office
14	Historic District and Properties	Willington Town Historian
15	Committed Open Space	Willington Conservation Commission
16	Conservation Priority Areas	Composite Map developed by Willington Conservation Commission

MAP DESCRIPTIONS

NOTE – Property line base map as of June 2006.

1. Streams, Water Bodies, Floodplains

This map shows the location of surface waters in town including rivers, streams, lakes, and ponds based on USGS topographic maps (1983) as depicted by DEP. It also identifies areas that are adjacent to rivers and streams which are prone to flooding due to elevation and proximity to a water body. Regulatory floodplain elevations at specific locations were determined by reference to the Flood Insurance Rate Maps for the Town of Willington prepared by the Federal Emergency Management Agency (FEMA) as of June 1982. These maps are available at the Town Office Building.

2. Regional Drainage Basins

This map divides the town into two regional drainage areas (watersheds). Ridge tops and other high elevation areas define drainage basins. Surface waters flow downhill until they encounter a watercourse that eventually drains to the lowest point in the basin.

3. Drainage Sub-basins

This map further divides the two regional drainage areas into four sub-basins and shows the streams and rivers that flow within each area.

4. Wetland and Steep Slope Soils

For regulatory purposes in Connecticut, wetlands and steep slopes are defined by soils. This map shows wetland and steep slope soils as defined by the United States Department of Agriculture's (USDA) Natural Resources Conservation Service(NRCS) and depicted on maps from the DEP.

5. Aquifers (Stratified Drift)

This map, developed by the DEP, depicts the areas of significant sand and gravel deposits (stratified drift) which may be suitable for public water supply wells due to their extremely high water yield. The Aquifer Protection Areas (APAs) are defined by the State as those active supply areas that currently serve more than one thousand people. Regulations provide protection for aquifers by limiting high-risk land uses in areas that feed water to public water supply wells.

6. Quinebaug Highlands Landscape

This map, created by The Nature Conservancy, identifies a 193,400 acre forest and freshwater landscape in northeastern Connecticut and south central Massachusetts which they call “The Quinebaug Highlands”. This area supports one of the 43 largest relatively unfragmented forests from southern Maine to northern Virginia as well as high-quality cold water streams, ponds, wetlands and aquifers of the Natchaug River system. About 75% of Willington’s land mass lies within this area.

7. Land Cover

This map shows the vegetative cover and physical features of the land most associated with forests, agricultural activities and various habitat areas. It was derived by the DEP using Landsat imagery information acquired between the years 1987 to 1999. One should note that this data can change if the vegetative cover changes, as can happen with such activities as development, heavy logging or loss of agricultural use and reversion to forest.

8. Productive Forest Soils

This map identifies soils that are particularly productive for growing trees and supporting other forest vegetation. Because of their ability to produce forest biomass in abundance, these soils have high potential value for forest products and wildlife habitat. This data was provided by the United States Department of Agriculture’s (USDA) Natural Resources Conservation Service (NRCS) and supplemented by updates developed by the DEP.

9. Endangered Species and Significant Natural Communities

This map, provided by the DEP’s Natural Diversity Data Base (NDDDB), generally indicates areas that may contain animal or plant species which are state or federally listed as endangered, threatened or species of concern as of December 2006. It may also indicate areas where significant natural plant communities may exist. In order to protect these species, neither the type of species nor exact locations are identified; instead highlighted “blobs” are used to give a general sense of location, but do not indicate that the species is found in the center of the area.

10. Productive Wildlife Habitats and Corridors

This composite map consists of multiple resource layers including: a) forest soil blocks of 200 acres or more; b) steep slopes and wetland soils, water bodies, and streams with a 300 foot buffer; c) natural diversity database areas; and d) committed open space areas. Large forested areas that contain primarily productive forest soils and a water source offer productive wildlife habitats. Natural diversity database areas are also considered important wildlife habitats since they may contain animals that are endangered, threatened or species of concern. Wetlands, watercourses and steep slopes are given a 300 foot buffer and mapped to help identify potential

wildlife corridors that connect productive wildlife habitats, natural diversity database areas and committed open space.

11. Land in Agricultural Use

A property line base map depicts town parcels that are at least partially in agricultural use as classified under Public Act (PA) 490 by the Tax Assessor in the Town of Willington as of October 1, 2005.

12. Productive Farmland Soils

This map depicts areas with Prime Farmland Soils and Farmland Soils of Statewide Importance as determined by a classification system developed by USDA and compiled by the DEP. These areas are suitable for farming operations and are favorable to produce sustained crop yields.

13. Archaeologically Sensitive Areas

This map depicts general areas of high sensitivity where the environment is known to contain or is conducive to containing historic and/or prehistoric sites. In order to protect these sites from disturbance, the exact locations are not identified; instead highlighted “blobs” are used to give a general sense of location, but do not indicate that the site is in the center of the area.

14. Historic District and Properties

This map uses a property line base map to show the Willington Common Historical District (National Register of Historic Places) as well as other properties including buildings still in existence shown on a map of Willington published in 1869 by Baker and Tilden and several later buildings of particular interest as identified by Town Historian Isabel Weigold in A Glimpse of Willington's Past. A listing of historic properties is included in Appendix B.

15. Committed Open Space

This map uses a property line base map to show land permanently protected from development as of June 30, 2006. This includes state forests and other land managed by the Connecticut Department of Environmental Protection, town owned open space and parkland, private land trust and conservation organization property, and private lands containing easements to the state, town, or land trust that prevent development. Easement area boundaries are not defined. The University of Connecticut's Moss Forest, de facto open space, is shown for informational purposes. A listing of committed open space is included in Appendix C.

16. Conservation Priority Areas

In order to set priorities for open space protection, the Conservation Commission used geographic informational system (GIS) mapping techniques to layer resource inventory maps over the town's digitized property line base map. With this strategy, we were able to identify the remaining large, undeveloped areas in town that contain multiple resources as well as their proximity to existing open space.

III. NATURAL AND CULTURAL RESOURCES INVENTORY

In order to categorize resources by function the inventory data are divided into five major areas: 1) wetland and water resources; 2) forest and wildlife resources; 3) agricultural resources; 4) historic, aesthetic and recreational resources; and 5) greenways. Background information describing the resources along with current conditions in Willington is presented. Associated maps are listed. Conservation goals and recommendations are stated for each resource area. Recommendations are based on current research and best management practices. Efforts were made to suggest protection strategies that are cost-effective, can be implemented without unrealistic expense, and that do not result in undue infringement on private property rights.

A. WETLAND AND WATER RESOURCES

ASSOCIATED MAPS

- **Streams, Water Bodies and Floodplains - Map # 1**
- **Regional Drainage Basins - Map # 2**
- **Drainage Sub-basins - Map # 3**
- **Wetland and Steep Slope Soils - Map # 4**
- **Aquifers (Stratified Drift) - Map # 5**

BACKGROUND AND INVENTORY

There are two general categories of water resources: surface and groundwater. Surface and groundwater quality are interrelated, and management and stewardship of both resources is necessary. Wetland and watercourse protection and land use oversight, particularly in public water supply watersheds and aquifer protection areas, are essential to ensure their quality and viability in future years.

Precipitation is the source of fresh water in Willington. Rainfall runs off the surface and goes to streams directly or indirectly after storage in lakes, reservoirs, wetlands, soils and aquifers. A small amount of the precipitation infiltrates the land surface and percolates down to recharge aquifers.

SURFACE WATERS

Willington's surface waters include numerous rivers, streams, ponds, lakes, marshes, swamps, bogs, vernal pools and wetlands. These water resources are important for drinking water, domestic use, fish and wildlife habitat as well as for recreation. Map # 1 depicts many of the streams and water bodies. Most are located on private land and may not be adequately protected.

A watershed or drainage basin contains a land area that transports water, sediment and dissolved materials through small streams to major streams and rivers or oceans. Willington lies in the greater Thames River watershed and includes two regional river basins, the Natchaug and Willimantic, both of which flow into the Shetucket River, which joins the Quinebaug River to form the Thames River. Regional drainage basins (Map # 2) are further divided into sub-basins (Map # 3).

Natchaug Regional Basin

The Fenton River and Squaw Hollow Brook, which flow through the east side of town, are tributaries of the Natchaug River. The Stiles, Curtis, Eldredge, Fishers, Tinkerville and Kidder Brooks in Willington feed into the Fenton River. The Natchaug Regional Basin contributes to Willimantic's drinking water supply. The Fenton River is designated by the Connecticut Department of Environmental Protection (DEP) as Class B surface water, based on current or potential uses, as well as known or presumed quality. A Class B surface water designation indicates suitability for recreational use, swimming, fish and wildlife habitat, agricultural and industrial supply, and other legitimate uses including navigation. The waters of the Fenton River can be used for drinking after treatment. The University of Connecticut pumps water for its main campus from a well field on the Fenton River in Mansfield just south of Willington. The water quality goal for this river is Class AA which includes the above Class B usages plus a proposed drinking water supply.

The Fenton is also a regionally important fishery and designated as a class 3 wild trout management stream for its entire length in Willington. To receive this designation the river must support wild brown and native brook trout. The river is also stocked with adult sized brown, brook and rainbow hatchery trout. Survey work by the DEP shows that fish species in the river include blacknose dace, white sucker, fallfish, tessellated darter and American eel.

Willimantic Regional Basin

The Willimantic River forms the western boundary of Willington. The Roaring, Ruby, Conant and South Willington Brooks in Willington feed into the Willimantic River. The DEP identified the Willimantic River as "one of the most diverse and utilized fishery resources in eastern Connecticut, containing approximately 18 species of freshwater fish" [CT-DEP, 2001]. Its year round water flow and relatively undeveloped banks are attractive for recreational fishing and boating. The Willimantic River is designated as Class B surface water with a water quality goal of Class A in Connecticut's Water Quality Standards. The Willimantic River is recovering well from past industrial pollution. The "List of Connecticut Water Bodies Not Meeting Water Quality Standards" recommends that the Willimantic River no longer be cited now that portions of the river in Stafford (1.5 mile section) have met goals for copper, lead and zinc concentration in output from the town's water treatment facility [CT-DEP, 2004].

Roaring Brook, which feeds into the Willimantic River, is designated as a Class 3 Wild Trout Management Area. Unfortunately one of its tributaries, Ruby Lake outlet stream is on the "Tier 4 water bodies" list for 2004. This list is developed by the DEP and targets water bodies that do not meet standards for water quality. The reason for this listing was a release of diesel fuel from the Travel Centers of America's storm water detention system into Ruby Lake and nearby wetland areas in 2003. Remedial measures recommended in 2003 to restore the aquatic community to its previous state have still not been fully implemented.

Wetlands

Wetlands are a key component of a healthy ecosystem. Wetlands are transitional lands where the water table is at or near the surface or where shallow water covers the land and one of the following characteristics holds: a) the land periodically supports aquatic life; b) undrained wetland soils are dominant; or c) at some time during the growing season the subsoil is saturated

with or covered with water. For regulatory purposes in Connecticut, wetlands are defined by soils and may consist of any of the soil types designated as poorly drained, very poorly drained, alluvial, and floodplain by the National Cooperative Soils Survey [Willington, 1999]. Based on soil mapping (Map # 4) approximately 14% of Willington is wetlands.

Wetlands perform valuable and irreplaceable functions.

- They provide unique habitat and are home to a wide variety of flora and fauna. The Town has some unique and valuable wetland areas that are listed as “Areas of Special Concern” by the DEP.
- Wetlands serve as natural reservoirs for excess water during periods of heavy rain and spring snowmelt, slowing the movement of water through the watershed. Filling in wetlands often results in increased flooding, both locally and far downstream.
- Wetland vegetation helps to filter sediment by slowing down the speed of water. Wetlands also help prevent erosion of shorelines and provide a buffer between wave or stream activity and adjacent lands.
- Wetlands have a natural filtration process that can reduce the levels of natural and human pollution. Microorganisms in the wetlands break down and use nutrients found in storm water runoff.
- Wetlands are a critical part of the life cycle of many species of fish and wildlife. Breeding, nesting and feeding grounds are provided and protective cover is available.
- Destruction of wetlands and improper wetland practices affect the ecology and the scenic and recreation value of the land.

Vernal Pools

Vernal pools are small, unique wetlands of standing fresh water which are usually temporary in nature. They are most obvious in the landscape during the spring or fall of the year when they fill with snowmelt or runoff. In the State of Connecticut, a wetland must have the following physical characteristics in order to meet the definition of a vernal pool: (1) it contains water for approximately two months during the growing season; (2) it occurs within a confined depression or basin that lacks a permanent outlet stream; (3) it lacks any fish population; and (4) it dries out most years, usually by late summer. As well as the physical features, one or more of the following obligate species should be present in a vernal pool: spotted salamanders, Jefferson salamanders, marbled salamanders, wood frogs, eastern spadefoot toads, and fairy shrimp [Paton, 2002]. Populations of some pool-dependent amphibians are on the decline. In Connecticut, Jefferson salamanders are listed as species of concern and eastern spadefoot toads are listed as endangered by the Connecticut DEP.

In 1995, Connecticut passed legislation (P.A. 95-313) that gives municipalities regulatory authority over land use affecting *vernal and other intermittent watercourses* through the Inland Wetlands and Watercourses Act (C.G.S., Sections 22a-36 through 22a-45). Currently in Willington, vernal pools and intermittent watercourses are treated with the same protections as permanent watercourses. Activities are generally regulated within 100 feet from the boundary of their spring high water mark.

Pool-breeding amphibians depend upon both aquatic and terrestrial habitats for survival. Most adult vernal pool amphibians spend less than one month in breeding pools; the remainder of their

annual cycle is spent in adjacent uplands and wetlands [Semlitsch 2000]. The surrounding forest provides critical terrestrial habitat for adult amphibians and newly emerged juveniles throughout the year. In their upland habitats, both young and adults need areas of uncompacted, deep organic litter, coarse woody debris and shade. These elements provide a compatible forest floor environment for amphibians as they move through the forest, feed, and hibernate [deMaynadier, 1995]. Suitable upland habitat that connects vernal pools is also important to allow small populations of these animals to mix and replenish breeding stock through dispersal of juveniles to new areas.

Studies have shown that amphibians spend most of the year in wooded uplands a considerable distance from the vernal pools where they were born and to which they are likely to return to breed. Review of the scientific literature notes that on average, spotted salamanders move 386 feet from a pool and Jefferson salamanders travel 477 feet. Wood frog juveniles, on average, disperse 1,550 feet from a breeding pool. In many instances, these amphibians travel even greater distances [Calhoun, 2002]. To protect pool-dependent amphibians and their critical terrestrial habitat, experts advise maintaining 400 – 750 feet beyond the pool edge as primarily forest with undisturbed ground cover [Calhoun, 2002; Calhoun, 2004; CT-DEP, 2007].

Floodplains

Floodplains are areas prone to flooding due to elevation and proximity to a watercourse. Town and State regulations restrict development within floodplains in order to protect people and property as well as to preserve the ability of the floodplain to contain floodwaters. Specific regulations for Willington are set forth in the Zoning Regulations and Town Ordinances. Locations of flood hazard zones in Willington can be determined by referencing Flood Insurance Rate maps prepared by the Federal Management Agency (FEMA) of the Federal Insurance Administration (Map # 1).

Addressing wetland protection is the charge of the Willington Inland Wetlands and Watercourses Commission (IWWC) established by an ordinance adopted April 7, 1986. The purpose of the regulations is to protect, preserve and maintain the use of the wetlands by “minimizing their disturbance and pollution, maintaining and improving water quality, preventing damage from erosion and siltation, preventing loss of fish and other organisms and the destruction of the natural habitats.”

GROUNDWATER

Groundwater is water beneath the earth’s surface. It can come to the surface naturally via seeps or springs or can be collected using wells. In Willington, ground water is a vital resource since it supplies drinking water for residents who rely on private and public wells for their water supply. Groundwater also provides base flow to streams during dry periods. Aquifers are the main source for Willington’s groundwater.

Aquifers / Groundwater recharge areas

An aquifer is an underground, water-bearing layer of earth, porous rock, sand, or gravel, through which water can seep or be held in natural storage. Aquifers generally hold sufficient water to be used as a water supply. Unlike a moving river, groundwater has no natural cleaning or diluting

mechanisms. Once it becomes contaminated, it can remain in that state for many years. Therefore the best prevention of groundwater contamination is aquifer protection.

There are two types of aquifers in Willington: bedrock and stratified drift. Bedrock aquifers store and transmit water through cracks and joints in solid rock. Bedrock aquifers underlie Willington and are the principal source of groundwater for residential wells. Stratified drift aquifers consist of sand and gravel that were deposited in layers by melt waters from retreating glacial ice. Stratified drift aquifers are the most productive sources of ground water in Connecticut. The largest stratified drift aquifer in Willington is located in South Willington along the Willimantic River. This aquifer provides drinking water to areas of Willington and Tolland and is capable of serving over one thousand people. Another stratified drift aquifer straddles the Mansfield and Willington border near the Fenton River. The University of Connecticut uses water from this aquifer, through well fields located in Mansfield.

In April 2004, the Willington Inland Wetlands and Watercourses Commission became responsible for local *aquifer protection areas (APA)*, a new designation for active public water supplies in stratified drift aquifers that serve more than one thousand people. Regulations provide protection for aquifers by limiting high-risk land uses in areas that feed water to public water supply wells [CT-DEP, 2004]. These APAs as well as other stratified drift areas are located on Map # 5.

WATER QUALITY

Surface waters in Willington are mainly high quality, meeting the fishing and swimming standards of the State of Connecticut [Trench, 1999]. The release of excessive amounts of nutrients into an aquatic ecosystem speeds up a natural process called eutrophication. Human activities are greatly accelerating this process by the release of nitrogen and phosphorus into lakes and streams. The three major sources of pollution are agricultural fertilizers (including lawn and garden products), domestic sewage and livestock wastes. Some of the adverse effects are destruction of lake aesthetics, foul tastes and odors in water quality, rooted weeds interfering with recreation, game fish being replaced by less desirable fish and the potential for lake extinction. Other sources of polluted run-off, also referred to as *non-point* sources, include storm water, septic tank failure, soil erosion, and salt and sand from roads [Ciras, 1998].

Riparian zones, the vegetated strips of land along stream and pond edges, are critically important in mitigating and controlling pollution from non-point sources. Vegetative cover helps to filter sediments and inorganic materials, slow surface-water movement, stabilize stream banks, provide wildlife cover, and provide nutrients for aquatic environments. Willington's current IWWC regulations provide opportunities for protecting adequate riparian zones. Activities are generally regulated within 100 feet from the boundary of wetlands or watercourses; 150 feet from the Fenton River, Willimantic River and their tributaries; and 250 feet from wetlands and watercourses with adjacent steep slopes of 15% or greater. Steep slopes based on soils can be found on Map # 4.

The available information on best management practices for the treatment of non-point source pollutants is ever increasing. Agencies such as the Environmental Protection Agency (EPA) and the Connecticut DEP offer storm water management guidelines. The University of Connecticut

has established the Non-Point Education for Municipal Officials (NEMO) program to provide technical information about best management practices and assistance to implement them. The Town of Willington's Planning and Zoning and Inland Wetlands and Watercourses Commissions have implemented some changes to their regulations to address non-point source pollutants. Additional changes to the Town's subdivision regulations and road construction standards can further reduce impervious surfaces and improve storm water management.

WETLAND AND WATER RESOURCES GOALS

Protect surface and ground water quality and quantity for drinking and other domestic uses, for fish and wildlife habitat, for swimming and other recreational use.

RECOMMENDATIONS

1. Update overlay protection zone mapping and regulations for aquifers and public and private water supplies in accordance with Health Department and Department of Environmental Protection regulations and guidelines.
2. Minimize impervious surfaces such as bituminous driveways and parking areas in future development and reconstruction through regulations and design guidelines.
3. Require developers to incorporate the most current Storm Water Management Guidelines in their designs.
4. Review, revise and monitor public works procedures and schedules for cleaning catch basins.
5. Establish enforcement regulations and procedures for conservation easements and buffer zones associated with regulated wetlands and watercourses.
6. Protect critical areas of public water supply watershed from improper land uses through the development and implementation of goals and policies in accordance with state guidelines.
7. Use natural resource maps in the decision making processes of Willington's Inland Wetlands and Watercourses and Planning and Zoning Commissions.
8. Protect vernal pools, pool-breeding amphibians and their associated upland habitats by expanding buffer zone requirements to more closely reflect current best management practices.
9. Inventory and map vernal pools in town.
10. Initiate a public education program related to the management of water resources and water quality issues including strategies to minimize surface water runoff and encouraging best management practices for application of fertilizers and pesticides.

B. FOREST AND WILDLIFE RESOURCES

ASSOCIATED MAPS

- **Quinebaug Highlands Landscape - Map # 6**
- **Land Cover - Map # 7**
- **Productive Forest Soils - Map # 8**
- **Endangered Species and Significant Natural Communities - Map # 9**
- **Productive Wildlife Habitat and Corridors - Map # 10**

BACKGROUND AND INVENTORY

Forests are the natural vegetative cover in Connecticut. While our farmland areas have declined during the past century, much of the land has returned to forest. During the 18th and 19th centuries when farming was widespread, Southern New England was 25% forested and 75% open/developed land. Now that ratio is almost exactly reversed, and Connecticut's forests are reaching maturity (80 years +).

Forests provide many critical benefits that we often take for granted. They remove carbon dioxide and other pollutants from the air and produce the oxygen we breathe. They reduce wind velocity, provide shade and reduce energy costs. The root structure of shrubs, trees and windrows plays a major role in preventing erosion and reducing sedimentary run-off into our watersheds. Forested areas cleanse and moderate the flow of our water supply. They provide food and cover habitat for most of Connecticut's native wildlife species. Trees in our forests also provide products for human consumption including edibles (e.g. nuts, maple syrup), lumber, firewood, and other raw materials for household and commercial use. Sustainable forest-based industry provides jobs and economic benefits. Our woodlands are places of aesthetic beauty that offer quiet respite and recreational opportunities for residents. They also have educational value and offer areas where we can study the complex ecological relationships of many living organisms.

Forest Fragmentation

The primary threat to our forests' continued ability to provide these benefits is fragmentation due to residential and commercial development. Research has shown that large, continuous tracts of forest which are biologically diverse, provide far greater ecological, recreational, and habitat benefits than many small tracts adding up to the same acreage. For example, when a 100-acre forest becomes fifty, two-acre home sites, its ability to slow down runoff and to absorb septic effluent and residential pollutants is limited. As a result, the forested area no longer has the same capacity to prevent erosion and cleanse water percolating through the soils as it had before the development occurred. Forest cover's contribution to air quality and temperature moderation is also greatly diminished as the number of trees is reduced. As forests decline in size, so do the public recreational opportunities such as camping, hiking, bird watching and hunting. When forests shrink, they become less economically viable in providing sustainable forest products, such as lumber, wood for fuel and maple syrup.

The larger the contiguous forested area, the greater the overall wildlife habitat value. Studies by the US Forest Service suggest that in contiguous forest areas approaching 500 acres, species diversity is measurably improved [DeGraaf, 1987]. In order to live and breed successfully,

several New England wildlife species need a large home range relative to their size. Home ranges for females are usually much less than for males and can also vary based on the quality of the habitat. For example, black bears require 4,250 to 11,000 acres [Powell, 1997]. Bobcats need 5,700 to 81,000 acres, moose need 1,250 to 10,750 acres, mink require 800 to 1,200 acres, and otter need 1 to 29 linear miles [DeGraaf, 1987]. Fisher inhabit a home range of 1,000 to 19,750 acres [Arthur, 1991; Powell, 1993]. Wild turkeys require home ranges of 1,000 acres or more. Others, like pileated woodpecker and some of our migratory songbirds, require 300 acres or more for breeding. Because of their large home range needs, these species are particularly susceptible to decline when forest fragmentation causes habitat loss or degradation.

Forest fragmentation can also diminish diversity by increasing “edge effect” and allowing blue jays, cowbirds and other predatory species that frequent the edges of forests to gradually reduce populations of interior forest bird species. Disturbed forests and forest edges are more likely to contain non-native invasive plants that successfully compete with and displace native plants [Hammerson, 2004].

Core habitats are unbroken areas of undisturbed natural habitat that can serve as home areas for source populations of native plants and animals. Examples of core habitats might be an established wildlife reserve or a large forested area with few or no roads. Core habitats for wildlife contain all the necessary elements of food, water, shelter and adequate space to support a viable population of a species.

The connections between core habitats, called *wildlife corridors*, are important travel lanes that facilitate movements (daily, seasonal) of animals within their normal home range to access food, cover and fulfill reproductive requirements [Barclay, 1988]. By connecting larger tracts to one another with vegetated corridors, wildlife can move freely from one core habitat or seasonal range to another. This habitat connectivity is important to survival, allows wildlife populations to intermingle and avoid the devastating effects of genetic inbreeding and provides buffers between human and wildlife activity. Corridors also provide important migratory pathways for a number of non-terrestrial species, such as Neotropical birds, butterflies and anadromous fish such as salmon and shad.

Corridors are considered transitional habitats; that is, they are available for animals to move through, but may not meet all of the habitat or food needs of the particular species. Corridors are, by definition, species-specific; what constitutes a corridor for one species may be core habitat for another [Hass, 2000].

Rivers, streams, wetland systems and ridgelines, often used by mammals as they travel, are considered to be linear corridors because animals tend to travel parallel to these land features. In contrast, amphibians which breed in vernal pools and live in upland forested habitats tend to use radial corridors, which are like the spokes of a wheel.

Because wildlife need predictable water sources, corridors along waterways and wetlands are essential. These are often referred to as *riparian corridors*. Maintaining adequate vegetation along these riparian areas has a significant benefit since it provides cover and food for wildlife and preserves water quality and wetland resources. Many sources recommend that a minimum

of 100 feet of vegetation be left undisturbed between development and wetlands/watercourses to filter/trap sediments and excess nutrients. This width may be adequate to protect water quality, but it does not accommodate the needs wildlife have for secure travel corridors.

The widths of corridors needed by wildlife will vary depending upon the species, habitat type and structure, nature of surrounding habitat (including topography), human use patterns, and perhaps other factors. To minimize impacts associated with development, the Connecticut DEP Wildlife Division advises maintaining wide corridors of natural vegetation (minimum of 300 feet) between islands of habitat, particularly those that link wetlands to undeveloped uplands [CT-DEP, 2002]. Consideration should also be made for the habitat needs of plant species and the relationship between the animals which depend on them [Adams, 1989]. For example, research has determined that certain tree species which are shade tolerant, such as sugar maple and beech, cannot successfully reproduce in wooded corridors narrower than two to three hundred feet respectively [Ranney, 1981]. Wildlife species, which use these tree species for food and cover, may therefore also benefit from travel corridors at least this wide.

Habitat diversity is also important. Because plant and animal species differ in their environmental requirements, it follows that a wider array of environmental conditions should support a greater diversity of plants and animals. Conservation of tracts of forest that have the greatest variation in slope steepness, slope direction and soil moisture is an effective approach to protecting biodiversity [Hammerson, 2004].

It should also be noted that some species require a non-forest environment or early succession condition for survival. Grasslands and shrubby old fields provide these unique habitats for many plants and animals. Unfortunately many of these areas, which are often tied to agriculture, are being lost in Connecticut to reforestation and residential development. The Connecticut Grassland Habitat Conservation Initiative is the first major statewide action to be addressed under Connecticut's Comprehensive Wildlife Conservation Strategy. Under the Grassland Initiative, the Connecticut DEP is teaming up with a wide variety of conservation and agricultural groups in an effort to inventory existing grassland habitat and the array of wildlife species dependent on it.

Large Forest Blocks

The Nature Conservancy has recently undertaken a comprehensive survey of ecosystems in the Eastern United States [Barbour, 2000]. They have identified a 193,400 acre forest and freshwater landscape in northeastern Connecticut and south central Massachusetts which they call "The Quinebaug Highlands". This area supports one of the 43 largest relatively unfragmented forests from southern Maine to northern Virginia as well as high-quality cold water streams, ponds, wetlands and aquifers of the Natchaug River system. The Quinebaug Highlands landscape provides habitat for a number of species including bear, bobcat, wild trout and a variety of migratory birds. Because of the forested and rural character of this landscape in the midst of the sprawling Boston-to-Washington corridor, the area is often referred to as "The Last Green Valley." About 75% of Willington's land mass lies within this area (Map # 6).

There are still extensive forested areas in the town of Willington (Land Cover, Map # 7). Many of these areas are made up of parcels held by private landowners and are not permanently protected.

The largest tracts of protected forest include the Nipmuck State Forest (995 acres), Fenton-Ruby Park and Wildlife Preserve/Drobney Sanctuary (302 acres), and Nye-Holman State Forest (130 acres). The University of Connecticut's Moss Forest Tract (323 acres) in the southeastern part of Town has a large, intact forest, but it is not yet permanently conserved. In 2005, with funding help from the State's Open Space Grant program, the Town of Willington and Connecticut Forest and Park Association (CFPA) acquired and conserved a total of 108 forested acres that abut the Moss Tract. Several local conservation organizations are working with the University to secure a conservation easement on this Tract.

Individuals and families privately own most of Willington's woodlands. Growing numbers of these holdings are owned as relatively small, individual parcels of land. As long-term development pressures increase and larger forested tracts of land are subdivided into housing lots, the forest will continue to fragment into smaller and smaller individual parcels interspersed with housing and roads. This fragmentation can be reduced by educating landowners and developers about the commercial and ecological value of these forestlands and adopting a town wide open space and conservation plan to protect and connect the most important forested areas.

Productive Forest Soils

USDA Natural Resource Conservation Service (NRCS) soils maps were used to identify soils fertile enough to grow high quality timber and other forest products at a reasonably rapid rate for harvest and also for wildlife value (Map # 8). There are sixteen soil types in Northeast Connecticut that support the forested areas identified on the map. Other forest productivity factors to consider include slope. For example, slopes under 15 % allow for harvest without significant potential soil loss due to erosion.

Forest-based Industry

There are no significant forest-based industries in Willington at present. Some private landowners cut firewood, sell Christmas trees and occasionally contract with logging companies to allow timber harvesting on their property. More research is required to further determine the current extent of and potential for forest-based industry in Town.

Wildlife Diversity

Willington's forests and associated riparian areas support a large variety of animal and bird species. Large mammals such as coyotes, deer, fisher, bobcat, otter and fox reside year round in our forests. Bear and moose have been reported in Willington, but it is not clear if these animals are actual residents or just migrants. Turkey, grouse, woodcock, five hawk species, three owl species, four woodpecker species and over sixty other bird species use our woodlands during migration, summer breeding and/or year round residence [Craig, 2003]. Many species of amphibians and reptiles, including the Wood turtle, a Connecticut species of concern, make their homes in our forests.

Endangered Species and Significant Natural Communities

In 1989, the Connecticut Legislature passed Public Act 89-224 “An Act Establishing a Program for the Protection of Endangered and Threatened Species.” The overall goal of this legislation is to conserve, protect, restore and enhance any endangered or threatened species and their essential habitat. As part of this law, the Department of Environmental Protection (DEP) must identify and publish lists of State and Federally Endangered, Threatened and Special Concern Species within the following categories: mammals, birds, reptiles, amphibians, fish, invertebrates and plants. This list is reviewed and updated at least every five years.

Since 1996, the DEP’s Natural Diversity Database (NDDDB) has been mapping generalized known locations of these listed species as well as significant natural communities (Map # 9). These maps are sent to each town and are available to the public and local land use officials for use in filing DEP permit applications and for other conservation planning needs. These areas of concern are considered significant to maintaining Connecticut’s biotic diversity. They include native plants or wildlife species that are at low population levels and in such demand by man that their unregulated taking would be detrimental to the conservation of their population. These areas should receive special consideration before any proposed development is approved.

Productive Wildlife Habitats and Corridors (Map # 10)

Productive wildlife habitats provide abundant water, food, and cover at all seasons of the year. Ideally they should be large enough to accommodate species that cannot tolerate forest edge effects and/or human presence. The larger the area, the greater the overall habitat value. Because of their ability to produce food and cover plants in abundance, wildlife biologists agree that areas which contain productive forest soils are important wildlife habitat sites. For our planning and mapping purposes, productive wildlife habitats have all of the following characteristics:

- 1) an undeveloped area at least 200 acres in size;
- 2) primarily productive forest soils; and
- 3) some type of water source, such as a water body, watercourse or wetland soils.

Potential wildlife habitat corridors were identified which could serve to connect productive wildlife habitats in Willington (Map # 10). Corridors prevent productive habitat areas from becoming isolated “islands.” They allow terrestrial wildlife populations to migrate from one habitat area to another and support the resting, escape and foraging needs of animals during migration. Because wetlands, watercourses, and ridges have great habitat value, are often used as travel lanes and are largely protected from development, potential habitat corridors were mapped to overlap stream belts, wetland soils and steep slope soils where possible. Potential habitat corridors were designed to be at least 300 feet in width to support the greatest diversity of plant and animal species and reduce edge effect.

Areas generally identified from the Natural Diversity Database which may contain listed species and/or significant natural communities were also identified on this map since they support unique and declining species. Corridors leading to and from these areas have the potential to support dispersal of these endangered species into other areas.

Other habitats such as large, undeveloped areas of grasslands or shrubby fields, considered to be important to some wildlife species, were not mapped at this time. Opportunities to identify, protect, restore and maintain these declining types of habitat should be sought and supported when possible.

FOREST AND WILDLIFE RESOURCES GOALS

Conserve productive forests in ways that enhance Willington's aesthetic rural character, protect our water and air quality, maintain the health and diversity of our wildlife populations, provide for recreational and educational opportunities, and support sustainable forest-based industries which contribute to economic growth. Preserve other important wildlife habitats which support endangered and/or declining species and natural communities.

RECOMMENDATIONS

1. Preserve productive wildlife habitat through open space acquisition and easement protection, giving priority to large forested blocks with productive forest soils, undeveloped land that is adjacent to existing committed open space and areas that may contain endangered species.
2. Protect and enhance productive wildlife habitat connectivity by identifying and conserving potential wildlife corridors and encouraging development designs which preserve corridors.
3. Encourage the use of conservation-oriented development through zoning and subdivision regulations which minimize fragmentation of existing forested areas, conserve productive wildlife habitat and corridors, and preserve trees and vegetation which contribute to water protection and aesthetic character.
4. Support regulation changes which discourage the planting or sale of non-native invasive plant species and encourage the planting of native vegetation that supports local wildlife species.
5. Review public works procedures for removal, storage, and reuse of soils and catch-basin sediment that could harbor fragments of invasive plants.
6. Foster forest management and habitat protection through voluntary participation in best management practices and educational programs, including encouraging landowners, loggers, and private forest managers to establish guidelines for long term forest management and harvesting that meet conservation goals.
7. Work cooperatively with other towns and organizations to conserve forest and wildlife resources; jointly identify, assemble and manage large tracts of forested land and open space within the Tolland and Windham County regions.
8. Encourage the preservation of grasslands and shrubby field habitats in town. (e.g., offer additional tax incentive on these areas if maintained in these states; allow for agricultural lease of town owned grasslands).

9. Establish land management plans for municipal properties and encourage grassland and/or forest management plans on private lands with conservation easement areas greater than ten acres in size.
10. Educate residents about landscaping that enhances wildlife habitat on their own property.
11. Continue to support Public Act 490 which allows for use value rather than market value assessment of forest land.

C. AGRICULTURAL RESOURCES

ASSOCIATED MAPS

- **Land in Agricultural Use - Map # 11**
- **Productive Farmland Soils - Map # 12**

BACKGROUND AND INVENTORY

During the past 100 years, farmland in Connecticut has been reduced from 80% to 12% of the state's total land area. The Connecticut General Assembly has stated that "...conservation of certain arable agricultural land and adjacent pastures, woods, natural drainage areas and open space areas is vital for the well-being of the people of Connecticut" [CGA, 2005].

Currently, Willington's agricultural community consists of 47 "farm units" comprising 1060 acres (Land in Agricultural Use - Map # 11). This is approximately 4.8% of Willington's 34.8 square miles. The acreage classified among the Public Act 490 [PA 490, 2005] farmland classifications (tillable, pasture, woods or swamp) varies from 1 acre to 121 acres within these farm units with the average unit being 22 acres and the median being 13 acres. The median tillable and pasture acreages are 5 acres and 7 acres respectively. As these statistics denote, farming in Willington is carried out on a fairly small scale. Very few of these farm units provide full-time incomes.

The acreage of the larger farm units is devoted to pasturage for dairy and beef cattle and to raising feedstock for the same. The majority of the farm units contain nursery stock, orchards, Christmas trees, equine facilities and other small activities.

Farmland Soils

The Natural Resource Conservation Service (NRCS) of the United States Department of Agriculture (USDA) describes 'prime farmland' as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed crops, and is also available for these uses. The land could be cropland, pastureland, rangeland, forest land, or other land, but not built-up land or water. It has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields for crops when treated and managed, including water management, according to acceptable farming methods. 'Additional farmland soils of statewide importance', according to the NRCS, include those that are nearly prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods [NRCS, 2004]. As the Willington Plan of

Conservation and Development notes, the identification of these farmland soils is an important first step in preserving them [Willington, 2006]. The Productive Farmland Soils Map # 12 identifies these soils and demonstrates their limited and scattered occurrence in Willington.

The economic advantages, small as they may be, of preserving Willington's agricultural resources need to be fully appreciated before these lands are threatened and perhaps lost. Numerous studies have shown that farming and agriculture provide more tax dollars to a town than they require in service expenditures and that their preservation provides added income. A study published by the American Farmland Trust concludes that farmland only costs a community, on average, \$0.31 in services for every \$1.00 it generates in revenue. Conversely, an economic disadvantage can be shown if this land or the non-agricultural land in these farm units were to be developed [AFT, 2002]. Two studies, by the Southern New England Forest Consortium [SNEFC, 1995] and the American Farmland Trust [AFT, 1992] show that for every \$1.00 in tax money that a residence brings into a Connecticut town, the average cost in services is \$1.14.

Preserving farmland allows agricultural products to be produced locally, thereby reducing the need for costly transportation and energy use. It can also help preserve local farm jobs and provide tax revenues from the sale of agricultural goods.

Perhaps more important than the economics of their crops, products and employment, given their limited scale, is the contribution that farms make to the aesthetic beauty and rural character of Willington. Willington's rural character is often cited as one of its most important assets and the "man-made" open spaces of its farmland are certainly an important component. Farmlands, with their grasslands, hedgerows and shrubby old fields, also provide excellent wildlife habitat for many species and in some cases recreational opportunities such as hunting, walking and bird watching.

The Connecticut Office of Policy and Management's Conservation and Development Policies Plan for Connecticut, [CT-OPM, 2005] lists as a priority statewide goal "...to maintain and support the viability of the agricultural sector to increase a long-term, in-state food producing capacity: 1) through conservation and preservation of prime agricultural lands, and 2) through the creation of incentives that will continue to support agricultural business." Further, the Windham Region Land Use Plan of 2001 prepared by the Windham Region Council of Governments [WINCOG, 2002] recommends that active agriculture should be strongly encouraged for the strength and diversity that it adds to the regional economy, to help make the region more self-sufficient in its food supply, and to preserve the rural landscape currently committed to agriculture.

AGRICULTURAL RESOURCES GOALS

Preserve important farmland for commercial and aesthetic reasons, promote sound environmental farming practices, and encourage the use of farmlands both as commercially viable agricultural operations and family-use-only farms.

RECOMMENDATIONS

1. Continue to support Public Act 490 which allows for use value rather than market value assessment of farmlands.
2. Provide information and support for the utilization of the State Department of Agriculture's Purchase of Development Rights program that allows farm parcels to remain in private ownership as working farms.
3. Provide an open space fund to either purchase development rights to farm parcels or to purchase them outright.
4. Promote regional opportunities to market organically-grown farm products.
5. Provide information and opportunities to the agricultural community about programs that provide aid and support for farming activities.
6. Promote the growth of currently successful or potentially viable farming activities such as tree farming, nurseries, orchards or hydroponics.
7. Consider the benefits of conservation buffers between new development on land adjacent to existing farmland in order to mitigate the movement of agriculturally related substances and materials into the surrounding environment.
8. Provide for community garden or haying opportunities on suitable town-owned open space.

D. HISTORIC, AESTHETIC, AND RECREATIONAL RESOURCES

ASSOCIATED MAPS

- **Archaeologically Sensitive Areas - Map # 13**
- **Historic District and Properties - Map # 14**

BACKGROUND AND INVENTORY

Willington's link with its past can be observed through its archaeological sites, historic buildings, miles of stonewalls, gravel roads, scenic vistas and open spaces. These resources provide residents with a sense of identity and stability. Maintaining and preserving Willington's architectural heritage and scenic beauty are key to preserving the town's rural New England character. Providing recreational opportunities for the public to enjoy Willington's history, wildlife and natural beauty is also important.

HISTORIC RESOURCES

The history of Willington is well documented in Modernization in a New England Town: A History of Willington, Connecticut by Ronald F. Demers [Demers, 1983]. Prior to the arrival of white settlers, Willington was a hunting and fishing area for the Nipmucks, the main local tribe

of native people. While there is no evidence of any permanent settlements in town, archaeological artifacts of their seasonal encampments remain (Map # 13).

The 16,000 acre tract of land that would become the town of Willington was sold by the General Assembly of the Connecticut Colony in May of 1720 to a group of investors led by Major Roger Wolcott of Windsor and apparently named “Wellington” after the birthplace of Wolcott’s grandfather in England. In a series of organizational meetings in June 1727, the land was divided among the proprietors, roads and a town common were established, and land reserved “for the first minister that shall settle in Willington”. The original proprietors never resided in Willington.

Willington Common

The Common designated by the proprietors in one of their first actions was located near the geographical center of the town where Routes 74 and 320 now intersect. The first meeting house was erected in the 1730’s just to the north and served both as a church and a place to conduct town business. The present town green, nearly unchanged since 1800, consists of the portions of land given to the town for common use in 1757 and 1762 lying north of the highway from Tolland to Ashford. The area south of the highway was not developed until 1797 when the town gave Miner Grant permission to build a store. The Willington Common Historical District (Map # 14) was established in 1981 and includes residences and associated outbuildings, as well as a former tavern, store, two churches, and a small meeting hall [Willington, 1981]. These include fine examples of Colonial, Federal, Greek Revival, and Gothic Revival styles. The former Congregational Church still serves as a town meeting site. The district, together with five additional nearby properties, is listed on the State and National Registers of Historic Places [NRHP, 1990].

Through the 18th and into the 19th century a number of village centers developed in Willington with concentrations of historically significant properties that remain today, although none have historic district designations.

East Willington

East Willington or Willington Hollow is situated on Route 74 between Daleville Road and Moose Meadow Road. Once called ‘the city’, this was one of the most industrialized sections of town in the 19th century, whose needs were served by a general store established in 1825. John Heath owned a shop in which horn combs were manufactured near his grist and sawmill on the Fenton River. Across the river was the farm of Hosea Vinton, a blacksmith who made many of the farming implements used in the area. The most important industry was the tannery and shoe factory run by the Preston family, which primarily produced shoes for southern slaves until the Civil War. In the early 20th century C. S. Amidon founded a machine shop famous for its portable sawmills and also ran a lumber business. Other establishments in this part of town included mills, wagon shops, a tin shop, a paint shop, and a plow handle maker.

Daleville

This village was originally called the Topliff district after the first settler, Clement Topliff, whose son, Cyrus, built a saw, grist, and cider mill and a brandy still on what is now Daleville School Road. In 1825 a fulling and carding mill was established at the same site. In 1840

Thomas Dale founded the Willington Silk Mill nearby and from then on the area was called Daleville. Local women earned money by raising and selling silk worms until a blight affecting the mulberry trees on which the worms fed brought the silk industry to a halt. In 1870 James Regan converted the mill to the manufacture of woolens, a business which continued until 1900 under several different owners. From 1907 to 1942 buttons were produced at the mill. It was last used as a chicken coop and later was destroyed by fire. Portions of the mill race and foundation remain.

Glass Factory

The Willington Glass Company organized in 1815 was a major industry in West Willington prior to the Civil War. The factory produced whiskey bottles and flasks, ink wells, medicine bottles, pickle jars and other products. The company also ran a general store. Also in this area was a saw, shingle and grist mill operated by Captain Robert Sharp, who built coffins during slow times. In 1903 William Masinda opened a button shop here, the first in town. Another button shop, established by William Parizek in the 1930's near the site of the glass factory, can still be seen on Trask Road.

Moose Meadow

The Moose Meadow or Rider District was one of the most industrialized sections of town in the mid-nineteenth century. One of the state's first woolen mills, destroyed by fire in 1847, was replaced by a silk mill. Other businesses included a saw mill, spool thread factory, flour mill, and the production of palm leaf hats.

South Willington

South Willington was the major industrial sector of Willington for over one hundred years from the mid-nineteenth century. Woolens were made here as early as 1830, and several other textile ventures followed with Origen and Gardiner Hall among the owners. In the early 1860's Gardiner Hall, Jr. was able to establish a successful spool cotton thread factory which became Willington's largest industry. From its beginnings with six employees, the company grew to employ more than 150 workers and produce 36 million spools of thread a year by the time of Hall's death in 1915. To accommodate the employees, a boarding house was constructed, followed in 1876 and 1886 by tenement houses, each housing four families. Also built was a general store with a post office. A Baptist church in memory of Clara Hall Elliott was erected in 1911, and in 1924 a new modern school was constructed in memory of Holman Hall. The business remained in the Hall family until its closure in 1954. South Willington retains its appearance of a small company village with the mill buildings as the centerpiece, set below the mill pond.

Other portions of town were primarily agricultural with many scattered farms which today add to the rural appeal of the town's landscape. Remaining stonewalls serve as visual reminders of these areas that were once host to fields, pastures and livestock.

Historic Features

The historic district and other historic properties in Willington are shown on Map # 14. It indicates properties including buildings still in existence identified on a map of Willington published by Baker and Tilden in 1869, as inventoried by Town Historian Isabel Weigold in her

book, A Glimpse of Willington's Past [Weigold, 1991]. A description of these sites, along with location and date of construction can be found in Appendix B. Almost all of these properties contain buildings over one hundred years old, and forty-seven have structures over two hundred years old. In addition, several later houses of particular architectural interest are included. Although not represented on this map, any other structure more than seventy-five years old is considered of potential historical interest and worthy of preservation. This map allows the sites of these historic architectural and cultural resources to be easily identified by town land use commissions as they address development proposals and try to conserve historical resources and their landscapes for future citizens of Willington.

Threats to the town's historic resources seem to be mainly encroachment by residential subdivisions of property adjacent to historically or architecturally significant buildings or sites, rather than commercial development, inappropriate renovation or demolition. Protecting the rural historical content, the natural surroundings of these cultural resource sites, depends largely upon the willingness and capability of the land use commissions to be creative in their regulations and decisions. Also of great importance are individual sensitivity and architectural stewardship by private owners who are vitally important to maintaining our town's character.

AESTHETIC AND RECREATIONAL RESOURCES

Willington is fortunate to have many areas of scenic beauty, from the pastoral viewshed along the Fenton River on Moose Meadow Road to the rocky cliffs facing the Willimantic River along Route 32 south of Stafford. Willington's rolling hills and ridgelines are visible from within and outside of its borders. Forests, small tracts of farmland, stone walls and gravel roads are additional reminders of its rural character. While difficult to define and subject to individual interpretation, the aesthetics of the town's natural features are valued by its residents and worthy of preservation.

For the purposes of this report, recreational resources include only open space with passive recreational improvements such as hiking trails, fishing, swimming or picnic areas. This plan does not address active recreational facilities such as ball fields.

Much of Willington's committed open space can be used by the public for passive recreation. Almost 1,000 acres in northeastern Willington are part of the Nipmuck State Forest and abut extensive state forest lands in Stafford. Several parcels of Nye-Holman State Forest lands lie in Willington, as well as some other state-protected parcels along the Willimantic River across from the Kollar Wildlife Management Area in Tolland. These state lands offer opportunities for hiking, fishing, trapping and hunting in season.

The town's Fenton-Ruby Park and Wildlife Preserve covers 302 acres and offers four miles of hiking trails through varied terrain as well as opportunities for picnicking and fishing. Approximately three miles of the blue-blazed Nipmuck Trail pass through land in southeastern Willington and offer access to the Fenton River. Spur trails off the Nipmuck Trail have been completed on the Town's 28 acre Daniel W. Talmadge Conservation Tract and the Connecticut Forest and Park Association's abutting 96 acre parcel, both located along Mason Road. Other areas for hiking and fishing include a small parcel the Town acquired from the State along Roaring Brook that is adjacent to the new Recreation Area on River Road.

The Willimantic River which borders Willington is a resource for non-motorized boating and fishing. Currently in Willington, there are no public access areas to launch a watercraft on the Willimantic River. Although the State and Town do own some parcels along the river, they are not readily accessible because they are landlocked by other private lands and the railroad tracks. These same conditions also significantly limit fishing access by foot, although some foot access points do occur behind Hall School and the westbound Route I-84 rest stop. Additional access points to the Willimantic River are located in other towns including Stafford, Tolland, Mansfield, and Coventry.

There are two private campgrounds currently in Willington that are used for passive recreation. Moosemeadow Camping Resort, located off Moose Meadow Road, contains camp sites, trails and a fishing pond on approximately 47 acres. Wilderness Lake Campground off Village Hill Road is set on over 100 acres of land and contains a freshwater lake for swimming, paddling, and fishing.

The few remaining gravel roads in town should also be considered as aesthetic and recreational resources. They are typically narrower and less trafficked. They are more permeable than paved roads and reduce run-off if maintained properly. They have an appealing rural quality and offer pleasant and generally safer areas for residents to walk, run, bike and ride horses.

HISTORIC, AESTHETIC AND RECREATIONAL RESOURCES GOALS

Preserve the rural historical character of Willington, within its growing economic pattern, without imposing unreasonable burdens on property owners or residents; protect areas of scenic beauty; and provide recreational opportunities which enable town residents to enjoy the town's natural resources.

RECOMMENDATIONS

1. Protect Willington's significant historical properties from destruction or architectural degradation by considering a demolition delay that provides a waiting period before granting a demolition permit for historic buildings, structures or parts thereof, that are 75 years old or more. See enabling legislation CGS 29-406(b), as amended.
2. Consider the establishment of a Village District (or Districts) to appropriately sited areas of Willington, e.g. the South Willington Village area. See enabling legislation CGS 8-2j (PA 98-116 and PA 00-145), as amended. See section 5.2 of the Willington Plan of Conservation and Development [Willington, 2006].
3. Encourage the establishment of additional historic districts as a means to conserve the integrity of the village centers in town.
4. Encourage historic preservation through tax and zoning incentives for historic properties, especially outbuildings and barns.
5. Buffer the Willington Common Historical District to include more of the open space surrounding the area as protection from future development.

6. Consider an ordinance and/or land use regulations, and/or incentives, to prevent removal of old stone walls along roadways.
7. Consider an ordinance and public works department protocols for preserving and maintaining the remaining gravel roads in town.
8. Consider providing density bonus incentives and/or relief from bulk requirements (e.g. minimum frontage or setback distances) to encourage sub-dividers of land adjacent to historic structures to site and construct buildings to be architecturally compatible with existing historic buildings.
9. Consider establishing a scenic road ordinance according to CGS Section 7-149a, the “Scenic Roads Act.”
10. Work with the Willington Historic District Commission and the Willington Historical Society to promote public awareness of the historic nature of Willington’s villages and the importance of historic properties and sites.
11. Use land protection tools such as conservation easements and sale of development rights to protect archaeological, historical, and architectural resources.
12. Seek funding for development of viewshed maps of the town.
13. Continue cooperative ventures with other groups for development of passive recreational opportunities on existing open space lands.
14. Expand water based recreation sites within the current resource protection requirements in order to preserve and enhance appreciation of our water resources.

E. GREENWAYS

BACKGROUND AND INVENTORY

Greenways are linear open spaces that can help conserve native landscapes and ecosystems by protecting, maintaining, and restoring natural connecting corridors. They can provide opportunities for recreation, exercise, and alternative transportation. In addition, these areas can separate and buffer incompatible adjacent land uses and promote economically efficient and productive uses for lands which may be marginal for development. Greenways can also contribute to local tourism and to the preservation of scenic, cultural, and historic assets in the state [CT-DEP, 2006].

Portions of three greenways designated by the State of Connecticut Greenways Council can be found in Willington. The first includes several miles of the Nipmuck Trail, which is part of the Blue Blazed Trail System Greenway. This trail is located in southeast Willington and part of it runs along the Fenton River. The blue blazed trails are maintained by the Connecticut Forest and Parks Association.

The Willimantic River Greenway was designated in 2003 and encompasses areas along the river and its tributaries in Willington, Columbia, Coventry, Ellington, Lebanon, Mansfield, Stafford, Tolland, and Windham. Along with the other eight towns, Willington has committed to including the greenway in its Plan of Conservation and Development and pursuing projects to enhance natural resources and recreation along the river. The Conservation Commission hopes to establish a canoe and kayak landing on Town owned land along the Willimantic River, adjacent to the Peck's Mill site.

The Fenton River Greenway was designated in 2006 and includes areas in Willington, Ashford and Mansfield. Its goal is natural resource protection on both sides of the Fenton River, most of its tributaries, their headwater streams, and water bodies. The participating communities have agreed to work to preserve the high-quality waters of the system as well as the terrestrial and aquatic habitat within the watershed through community education and promotion of natural, historic and recreational resources of the river corridor [CT-DEP, 2006].

GREENWAYS GOALS

Develop greenways to protect, maintain, and restore natural connecting corridors which provide opportunities for wildlife habitat, recreation, exercise, and alternative transportation.

RECOMMENDATIONS

1. Conserve land along and adjacent to greenways as open space when possible.
2. Enhance recreational opportunities along current greenways.
3. Continue to look for opportunities to develop additional greenways in Willington.
4. Work regionally with other organizations and towns to connect and expand greenways.

IV. OPEN SPACE CONSERVATION PLAN

ASSOCIATED MAPS

- **Committed Open Space - Map # 15**
- **Conservation Priority Areas - Map # 16**

BACKGROUND AND INVENTORY

COMMITTED OPEN SPACE

For the purpose of this report the Conservation Commission has adopted a definition of protected or *committed open space*, which is described as:

“land or water that is permanently preserved in either a near-natural or agricultural state that is absent commercial or residential development and where any development would be limited to agricultural structures or passive recreational improvements, such as hiking trails, swimming or picnic areas.”

Committed Open Space in Willington consists of state forests, town-owned open space, private land trust and park association property, as well as privately-owned land with conservation easements. An inventory of these parcels as of June 30, 2006 is shown on Map # 15 and listed in Appendix C.

State forest land provides the most open space in Willington. In northeastern Willington, 995 acres are part of the Nipmuck State Forest which extends into Stafford. Six separate parcels in the western portion of Town account for approximately 130 acres of the Nye-Holman State Forest. There are several other state-protected parcels along the Willimantic River across from the Kollar Wildlife Management Area in Tolland that make up about 14 acres in total.

The Town owns approximately 421 acres of committed open space. The largest holding is the Fenton-Ruby Park and Wildlife Preserve including the Drobney Sanctuary in the eastern portion of Willington, located at the intersection of Moose Meadow and Burma Roads. The park contains about 302 acres of forests, grassy fields, marshes, ponds, portions of the Fenton River and four miles of hiking trails.

In 2005, with matching funds from the State, the Town purchased the 28 acre Daniel W. Talmadge Conservation Tract along Mason Road in the southeast portion of Willington. Both the Talmadge Tract and the Connecticut Forest and Park Association's abutting 80 acre parcel are contiguous with the 320 acres of the University of Connecticut's Moss Forest which lie within Willington's borders. The Moss Forest is de facto open space, but not permanently preserved.

The Town also owns approximately five acres of forested land on River Road which is adjacent to the Town's new Recreation Park. It contains a small section of Roaring Brook, a favorite spot for anglers. Remaining town-owned parcels were acquired as open space from subdivisions. They are generally small areas, scattered throughout the town and in total account for approximately 75 acres.

Joshua's Trust, a local non-profit land trust organization, owns two parcels totaling 57 open space acres in Town. The Trust also holds a conservation easement on another 120 acres. None of this land is currently open for public use. In addition there are a number of other parcels subject to conservation easements, many for the protection of wetlands, and a recreational easement on the Willimantic River. These protected areas total approximately 230 acres. The Committed Open Space Map # 15 identifies the parcels subject to easements, but does not define the boundaries of the easement areas.

As of June 2006, there were approximately 2,070 acres of committed open space in Willington. This includes permanently preserved land owned by the State, Town, Joshua's Trust and other conservation organizations, as well as land protected by easements to the State of Connecticut, Town of Willington, or Joshua's Trust. Although shown on the Committed Open Space Map for informational purposes, the University of Connecticut's Moss Forest is not included in this total, since it is not permanently protected.

These 2,070 committed open space acres account for 9% of the town's total land area (22,500 acres). Most of this land consists of mature forests and contributes to drinking water protection, wildlife habitat and passive recreation. There is very little committed open space in town that currently contributes to agricultural or historical resource preservation.

Willington's Plan of Conservation and Development [Willington, 2006] states that between 15% and 24% of the town's total land area, or 3,375 to 5,400 acres, should be committed open space. Given that currently protected land includes many small, scattered parcels, it would be desirable to acquire additional acreage adjacent to land already protected or of sufficient size to provide wildlife habitat and natural resource protection values.

The environmental well-being and character of Willington is and will be greatly affected by the ecological and aesthetic attitudes of all landowners, large and small. A third of Willington's land area, exclusive of roads, consists of approximately 2,100 parcels less than 15 acres, most of which are less than ten acres. These may offer specific habitat protection or be vital links connecting larger conserved areas.

OPEN SPACE CONSERVATION GOALS

Conserve and connect open space areas, giving priority to areas that hold the greatest number of natural and cultural resources.

METHODOLOGY

In order to set priorities for open space protection, the Conservation Commission used geographic informational system (GIS) mapping techniques to layer resource inventory maps over the town's digitized property line base map. With this strategy, we were able to identify the remaining large, undeveloped areas in town that contain multiple resources as well as to consider their proximity to existing open space.

To begin this process, undeveloped parcels in town (25 acres or larger) were assigned a resource score based on totaling the points given for each of the following criteria below:

- Parcel between 25 – 50 acres in size (0.5 points)
- Parcel larger than 50 acres (1 point)
- Contains 10 acres or more of prime agricultural soils (1 point)
- Contains 25 acres or more of productive forest soils (1 point)
- Contains any wetland soils (1 point)
- Contains or is adjacent to a watercourse or water body (1 point)
- Overlies an aquifer protection area (1 point)
- Identified as an historic property (1 point)
- Adjacent to an area with endangered species from NDDB (1 point)
- Adjacent to existing open space (1 point)
- Adjacent to large (100+ acres) existing open space (additional 0.5 points)

Total scores ranged from 0.5 to 7.5 points for individual parcels. A total score of 5 points or more was considered to indicate the parcel had a high resource value. Using this cutoff score, the Commission then identified generalized clusters of these parcels with high resource value and mapped them as conservation priority areas. The Conservation Priority Areas Map # 16 depicts these areas which contain the highest resource value in town.

RECOMMENDATIONS

1. Preserve a total of 15% of land in town as committed open space within the next 10 years and a total of 24% within the next 25 years to meet POCD goals. This would mean protecting an additional 1,300 acres by 2017 and then another 2,025 acres by 2032.
2. Focus on protecting land areas with the highest resource value as identified on the Conservation Priority Areas Map # 16.
3. Within the first ten years, target areas that contain:
 - a) land in agricultural use or which contains prime farmland soils because it is particularly at risk for development, contributes to Willington's rural character, and is limited in quantity in town;
 - b) land within the Natchaug Regional Basin and/or overlying and adjacent to stratified drift aquifers because of its importance for protecting public drinking water supplies; and
 - c) land that is adjacent to or which provides corridors between large areas of committed open space or greenways because of its importance for wildlife habitat, public recreation, and preserving rural character.
4. Work with local land trusts and conservation organizations to educate landowners about land conservation options.
5. Increase the amount of open space and/or recreation area that may be required within a subdivision from the current 15% to 20% of the property under consideration.
6. Require developers to submit an alternative Conservation Subdivision plan (sometimes referred to as an Open Space Subdivision plan) for parcels of 20 acres or more.
7. Establish effective processes to adequately record, flag and enforce conservation easements.
8. Work with other organizations to encourage the University of Connecticut to place permanent or long-term protection on the Moss Forest acreage in Willington.
9. Actively pursue monies for open space preservation through Town funding, as well as state, federal and private programs.
10. Use multiple strategies to preserve land and resources, including conservation easements, purchase of development rights, and direct acquisition.
11. Encourage informed and active stewardship of natural and cultural resources by all Willington landowners, remembering that "individual responsibility for the health of the land" [Leopold, 1949] is as important in one's backyard as it is in a forest.

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APPENDIX A - WILLINGTON RESOURCE INVENTORY MAPS

If these 16 resource maps are not attached to this copy of the document, they can be found in the copies of this report on file at the Willington Public Library, Town Clerk's Office, and Building and Land Use Office, or on the Town of Willington's website, Conservation Commission page, at the following internet address:

http://willingtonct.virtualtownhall.net/Public_Documents/WillingtonCT_ConsCom/conservation

APPENDIX B - HISTORIC PROPERTIES

Properties shown on the map of Historic Properties are listed here. With the exception of five parcels included on the National Register of Historic Places, all represent properties with historic structures still standing included in Town Historian Isabel Weigold's *A Glimpse of Willington's Past*. Description, date of construction and page reference all are from that publication. Most of the sites were shown on a map of Willington printed in 1869 by Baker and Tilden. (* Willington Common Historical District)

<u>Description</u>	<u>Location</u>	<u>Year</u>	<u>Page</u>	<u>Map/Lot</u>	<u>Unique ID</u>
National Register of Historic Places					
*Baptist Meeting House	236 Tolland Turnpike	1829	2	23/053-00	00065800
*John Watson	4 Jared Sparks Road	1727-28	3	23/026-00	00031900
*Old Tavern	1 Common Road	1790's	5	23/016-00	00224300
*John Rice	244 Tolland Turnpike	1771	7	23/050-00	00018200
*Hiram Rider	238 Tolland Turnpike	1819-25	8	23/052-00	00140500
*Congregational Church	11 Common Road	1876	9	23/022-00	00244300
*Silas Glazier	232 Tolland Turnpike	1816	10	23/058-00	00051800
*Deacon Turner	243 Tolland Turnpike	1849	11	23/029-0A	00066500
*Baptist Parsonage	7 Common Road	1836	13	23/020-00	00226000
*Jonathan Weston	5 Common Road	1835	14	23/017-00	00159400
*Miner Grant Store	242 Tolland Turnpike	1797	15	23/051-00	00044700
Bancroft Place	247 Tolland Turnpike	1841	16	23/030-00	00188300
*Daniel Glazier	227 Tolland Turnpike	1808	17	23/015-00	00039800
Glazier Barn	Tolland Turnpike	1808	18	23/059-00	00039900
Old School House	251 Tolland Turnpike	1790	19	23/031-00	00197400
Amasa Dunton	253 Tolland Turnpike	1760	21	22/002-00	00020500
*Old Town Hall	9 Common Road			23/021-00	00244200
*Town Common	Common Road			23/023-00	00244400
	245 Tolland Turnpike			23/029-00	00152500
	248 Tolland Turnpike			23/032-00	00167500
	248 Tolland Turnpike			23/033-00	00167600
Other Historic Properties					
Edmund Freeman	32 Willington Hill Road	1730's	23	23/055-00	00122600
Royal Eldredge	56 Old Farms Road	1830-50	25	22/055-00	00054700
Austin Pearl	71 Old Farms Road	1823	26	17/018-00	00062600
Jonathan Walker	39 Old Farms Road	1834	27	22/043-00	00085100
Ebenezer Crocker	83 Old Farms Road	1750-80	28	17/020-0A	00251200
Fenton Farm	4 Luchon Road	1750-80	29	13/020-00	00073900
Simon Carpenter	37 Eldredge Road	1820-30	30	13/044-00	00204400
Lucius Preston	17 Old Farms Road	1840's	31	23/035-0C	00212700
Ezekiel Sibley	100 Common Road	1795	32	27/007-01	00251500
Seth Vinton	86 Willington Hill Road	1832	33	18/059-00	00095600
Ralph Holt	29 Mirtl Road	1790	34	18/045-00	00027600
Elijah Eldredge	69 Clint Eldredge Road	1834	35	17/047-00	00062200
Rufus Fenton	206 Willington Hill Road	1817	36	08/021-00	00190400
Horace Holt	103 Willington Hill Road	1814-15	37	18/053-01	00219000
Timothy Holt	186 Tolland Turnpike	1790's	37	23/065-00	00010200
Nathan Jennings	17 Cosgrove Road	1808	37	28/037-00	00098600
Ebenezer Bicknell	61 Cowles Road	1777	40	16/026-00	00048000
Samuel Thompson	1 Boston Turnpike	1775	41	01/009-00	00208300
Cyrus Topliff	102 Mason Road	1740's	43	11/031-00	00148000
Matthew Watson	63 Boston Turnpike	1750	44	06/006-00	00171900

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Description	Location	Year	Page	Map/Lot	Unique ID
John Ballard	29 Mason Road	1748-50	45	16/060-00	00018400
Joseph Hull	104 Daleville School Road	1827-30	46	11/003-00	00028200
Ariel Eldredge	113 Daleville Road	1830's	47	17/028-00	00010700
Marilla Smith	132 Daleville Road	1830-50	48	12/004-00	00166100
Lucius Fisk	136 Daleville Road	1852	49	12/005-00	00205300
James Hoyle	142 Daleville Road	1883	50	12/007-00	00072100
Origin Weston	375 Tolland Turnpike	1840	52	22/020-00	00045800
Orrin Holt	380 Tolland Turnpike	1841	53	22/023-00	00105900
John Scripture	385 Tolland Turnpike	1820	54	21/001-00	00098400
Austin Niles	372 Tolland Turnpike	1844	55	22/024-00	00001000
Orrin Holt	379 Tolland Turnpike	1825	56	22/021-00	00012400
Joseph Crocker, Jr.	133 Old Farms Road	1780-00	57	17/023-00	00072700
Leonard Holt	31 Daleville Road	1830's	58	22/025-00	00096300
Darius Preston	8 Daleville Road	1790	59	22/030-00	00138000
Ruth Morse	79 Seckar Road	1847	60	26/013-00	00153600
Joseph Sparks	75 Krivanec Road	1840's	61	22/014-00	00082100
Ebenezer Heath	391 Tolland Turnpike	1760	62	21/002-00	00050300
Silas Partridge	2 Parker Road	1830	64	21/040-00	00205500
Lucien Holt	373 Tolland Turnpike	1810-30	64	22/019-00	00151400
John Wright	54 Moose Meadow Road	1784	64	26/006-00	00105100
O.Holt/John Heath Store	381 Tolland Turnpike	1825	65	22/022-00	00012600
Azariah Singer	366 Moose Meadow Road	1730-60	68	40/011-07	00118700
Joseph Rider	221 Moose Meadow Road	1770's	69	36/005-00	00038700
Amasa Batty	381 Moose Meadow Road	1801	70	45/020-00	00118800
David Glazier	250 Moose Meadow Road	1780-00	71	36/009-00	00093900
Thomas Rider	259 Moose Meadow Road	1850	72	36/001-00	00058100
Joseph Rider	237 Moose Meadow Road	1783	73	36/003-00	00080500
Gardiner Lewis	167 Turnpike Road	1814	75	45/016-01	00021400
Joshua Agard	312 Moose Meadow Road	1770	76	40/003-00	00024600
Asyyrrel Amidon	175 Turnpike Road	1797-00	77	44/002-00	00078500
Stephen Lamb	50 Lustig Road	1828-32	78	36/013-00	00106900
Asher Flint	276 Turnpike Road	1775-80	80	40/019-00	00179800
Philip Potter	131 Balazs Road	1790's	81	49/001-00	00169200
David Lillibridge	70 Polster Road	1730	84	51/020-00	00152300
Benjamin Chapman	140 Ruby Road	1790's	85	33/018-00	00057000
Hampton Lillibridge	136 Turnpike Road	1828	87	45/022-00	00093500
Timothy Pool	32 Hancock Road	1809	89	38/016-00	00145300
Ira Fisk	126 Lohse Road	1830's	89	51/016-00	00057200
Sylvester Balch	93 Cemetery Road	1830's	89	52/008-00	00135300
Lester Anderson	89 Turnpike Road	1850's	90	45/009-00	00111000
Eleazer Scripture	535 River Road	1770	92	39/005-00	00009200
Samuel Johnson	229 Village Hill Road	1770-10	93	47/009-00	00191900
Daniel Maine	293 Village Hill Road	1840's	94	52/004-0F	00002700
Nathan Richardson	5 Cemetery Road	1830's	95	52/005-04	00255300
Nathan Royce	57 Cemetery Road	1820's	95	52/006-00	00164700
Reuben Main	262 Village Hill Road	1780-00	95	52/038-00	00214300
John Chapman	65 Blair Road	1750-74	95	53/004-00	00119800
Philip Potter, Sr.	55 Kucko Road	1740-60	96	42/042-00	00164300
Shubael Stanton	49 Schofield Road	1790's	96	43/018-00	00055300
William Jennings, Jr.	167 Village Hill Road	1840-43	96	47/037-00	00041100
William Jennings	43 Blair Road	1802	96	53/002-00	00075100

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Description	Location	Year	Page	Map/Lot	Unique ID
Elijah Nye	36 Turnpike Road	1825	98	30/031-0B	00251100
Joseph Merrick	18 Sharps Mill Road	1790	99	24/015-00	00194800
Stephen Merrick	2 Adamec Road	1730-50	101	24/014-00	00114100
Abel Johnson	216 Luchon Road	1790	102	24/027-00	00138200
William Still	15 Trask Road	1830	104	29/014-00	00168600
Alba Burnham	451 River Road	1817	105	34/006-00	00144500
Elisha Bingham	135 Tolland Turnpike	1833	106	29/027-00	00066000
Glass Factory School	18 Glass Factory School Road	1858	107	29/037-00	00005800
Amasa Reed	108 Tolland Turnpike	1805	108	29/031-00	00214000
Samuel Merrick	66 Fisher Hill Road	1805	109	19/024-00	00071000
Glass Factory Store	124 Tolland Turnpike	1844	110	24/019-00	00148500
Spafford Brigham	114 Tolland Turnpike	1836	111	29/030-00	00206600
Amos James	6 Tolland Turnpike	1813-25	112	30/010-00	00039400
Nichols Store	12 Tolland Turnpike	1874	113	30/012-00	00211100
Railroad Depot	14 Tolland Turnpike	1894	114	30/013-00	00054400
Lemuel Childs	165 Tolland Turnpike	1835-40	115	23/002-00	00178400
Harvey Merrick	141 Tolland Turnpike	1836	115	29/024-00	00189500
Daniel Shaffer	139 Tolland Turnpike	1830's	115	29/025-00	00105600
William Fuller	1 Kollar Road	1830's	116	23/071-00	00154000
James Holt, Jr.	212 Luchon Road	1830-44	116	24/028-00	00208700
Abiatha Shaw	6 Kollar Road	1817	117	24/021-00	00168500
John Phelps	11 Tolland Turnpike	1836-47	117	30/006-00	00054000
Gardiner Hall, Jr. Co.	156 River Road	1860	120	15/027-0A	00026700
Willard Merrick	104 Fisher Hill Road	1810	122	15/025-00	00020600
Thomas Peck	23 Battye Road	1730's	123	09/007-00	00217600
James Peck	128 Pinney Hill Road	1830's	124	14/008-00	00184500
Thomas Peck	48 River Road	1790's	125	10/021-00	00014200
Ephraim Chamberlain	61 River Road	1830's	126	10/006-00	00254800
James Peck	85 River Road	1830-40	127	10/005-00	00144800
Jonathan Thompson	76 Latham Road	1814-20	128	09/021-00	00212200
Otis Dimock	157 River Road	1840	129	15/010-00	00066900
William Henry Hall	140 River Road	1895-96	130	15/028-00	00131700
Gardiner Hall, Jr.	145 River Road	1848	131	15/014-00	00085000
John Merrick	136 River Road	1852	132	15/029-00	00027700
Jeduthan Dimock	19 River Road	1830	134	05/003-0A	00033800
Abel Johnson, Jr.	44 Fisher Hill Road	1790's	134	19/021-03	00154100
Nathan Danes	25 River Road	1841	135	10/010-00	00108400

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APPENDIX C - COMMITTED OPEN SPACE

Committed open space is land that is presently open and committed to remain as such. This includes properties owned by state, municipal, and non-profit organizations which are restricted from development. In addition a number of privately-owned properties include areas subject to conservation easements to the state, municipality, or land trust. The Committed Open Space map identifies such parcels, but does not show the boundaries of the easement areas. Acreage figures for these parcels are for easement areas only and have been estimated as needed. Open space land is not necessarily open to the public and private property rights should be respected.

	Location	Map/Lot	Unique ID	Acres	
STATE OF CONNECTICUT - DEP					
Nipmuck State Forest	Balazs Road	54/001-00	00043200	80.90	
		54/001-0C	00043300	595.00	
	Polster Road	46/018-00	00042910	0.30	
		51/019-0B	00043110	129.30	
		51/020-0A	00043120	189.89	
Nye-Holman State Forest	River Road	34/00-001	00042200	56.00	
	I-84	35/001-00	00042310	11.50	
	Ruby Road	38/022-00	00042400	53.00	
	Tolland Turnpike	30/008-00	00144200	7.56	
	Village Hill Road	39/013-00	00042600	5.00	
		39/013-0A	00042700	19.80	
Kollar Management Area	River Road – I-84	34/002-00	00042300	0.71	
Other DEP	River Road	43/001-00	00043800	10.00	
		48/007-00	00043100	3.00	
Total State DEP				1,161.96	
STATE OF CONNECTICUT – UNIVERSITY OF CONNECTICUT					
Moss Forest	Daleville Road	07/003-00	00041500	151.00	
	Eldredge Road	07/008-00	00041600	138.30	
		02/014-00	00041650	34.10	
Total University of Connecticut				323.40	
TOWN OF WILLINGTON					
Town Green	Common Road	23/023-00	00244400	1.70	
Fenton-Ruby Park	Burma Road	31/008-00	00185900	94.44	
		31/010-00	00186100	128.50	
		36/008-00	00058000	79.55	
Talmadge Tract	Mason Road	06/002-00	00208310	28.00	
Recreation Area	River Road	39/006-00	00042500	8.11	
		39/006-0B	00042510	4.99	
Subdivision Open Space					
Fenton Bluffs	Balazs Road	49/006-00	00245600	1.00	
		49/006-0A	00245400	1.40	
		49/006-0B	00245500	0.70	
		49/006-0C	00245700	4.06	
Twin Hills	Daleville School Road	11/010-00	00243700	11.59	
Laurel Estates	Laurel Drive	53/017-00	00245300	3.08	
Willington Heights	Lohse & Spak Roads	46/001-00	00114300	3.90	
		46/001-02	00114320	6.40	
Birch Wood	Luchon Road	13/005-00	00243800	3.26	
Brimwood East	Meadow Lane	16/035-00	00244000	6.31	
Pinecrest	Pinecrest Road	42/035-00	00245000	10.40	

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	Location	Map/Lot	Unique ID	Acres	
<u>TOWN OF WILLINGTON - Subdivision Open Space (Cont.)</u>					
Highland Acres	River Road	10/002-0A	00243400	2.30	
		10/003-00	00243500	2.00	
		10/012-00	00243600	0.28	
Deer Run Estates	Ruby Road	37/011-00	00244800	18.70	
Total Town of Willington				420.67	
<u>JOSHUA'S TRUST</u>					
Tinkerville Brook	Balazs Road	44/020-0A	00104500	2.00	
Chenes Roches	Blair Road	53/004-0A	00119810	55.00	
Total Joshua's Trust				57.00	
<u>CONNECTICUT FOREST AND PARK ASSOCIATION</u>					
	Mason Road	06/001-00	00158300	46.00	
		11/030-00	00158400	34.17	
Total Connecticut Forest and Park Association				80.17	
<u>PRIVATELY OWNED WITH CONSERVATION EASEMENT</u>					
<u>Easement to State DEP</u>					
Pifer, Alexandra & Michael	Polster Road	51/019-00	00152200	1.86	
		51/020-00	00152300	8.76	
Sub-total State				10.62	
<u>Easements to Town</u>					
Fenton Bluffs	Balazs Rd. & Fenton Bluffs Dr.	49/002-08	00129800	1.00	est.
		49/002-09	00196300	1.15	est.
		49/002-19	00208600	1.00	est.
		49/002-20	00133600	1.83	est.
		49/002-14	00052100	10.00	est.
Miller Farms	Boston Turnpike	06/012-00	00137300		
		06/012-0K	00137260	16.54	
		06/012-0R	00137380	1.24	
Clover Springs Farm	Clover Springs Dr. & Battye Rd.	09/007-05	00218150	3.86	est.
		09/007-14	00261400	0.37	est.
		09/007-21	00262100	1.26	est.
		09/007-00	00217600	5.56	est.
Highland Commons	Common & Jared Sparks Rds.	28/049-05	00203000	0.31	est.
		28/049-06	00023200	4.40	est.
		28/049-08	00204100	0.64	est.
		28/049-12	00204000	2.65	est.
Latham Landing	Latham Road	09/033-01	00157400	2.20	est.
		09/033-03	00157800	0.86	est.
Nogas Estates	Latham Road	09/032-00	00157700	14.05	
		09/032-0B	00157720	3.57	
Oakridge Estates Association, Inc.	Lindsey Lane	18/068-OS	00160000	5.33	
Willington Heights	Lohse & Spak Roads	46/001-10	00143010	2.50	
		46/001-11	00143110	0.23	
Findlay, Michael	Luchon Road	18/034-00	00183800	2.48	
Neel, Donald & Laura	Lustig Road	36/014-0A	00082300	0.30	est.
Bussiere, Edward & Sandra	Mason Road	11/002-0C	00028340	0.52	
Mooney, Glenn	Mason Road	06/014-00	00221400	4.96	est.
Harrison, Margaret	Mihaliak Road	46/021-00	00063700	2.22	est.
Litwinczyk, Mary	Mihaliak Road #2	45/001-0D	00128800	0.11	est.

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Easements to Town (Cont.)	<u>Location</u>	<u>Map/Lot</u>	<u>Unique ID</u>	<u>Acres</u>	
Kohn, Steven & Gwendolyn	Mirtl Road	18/052-01	00040500	3.93	
		18/052-02	00040600	1.58	
		18/052-03	00040700		
Fenton Valley	Nipmuck Road	02/013-0B	00022700	0.07	est.
		02/018-01	00097200	0.52	est.
		02/018-02	00098300	0.20	est.
		02/018-03	00211400	0.24	est.
		02/018-04	00190600	3.47	est.
		07/018-05	00220500	0.38	est.
		07/018-06	00183300	0.40	est.
		07/018-07	00066200	0.52	est.
Dunston Acres	Old Farms Road & Hockla Road	17/033-0A	00059600	0.67	
		17/033-A2	00059620	3.02	
Town of Willington (Senior Center)	Old Farms Road	17/001-00	00049500	32.10	est.
Village Springs Corporation	Pinney Hill Rd. & Village St.	14/003-00	00032100	4.54	
		14/007-00	00032600	2.20	
Passardi, Jeffrey	Potter School Road	49/001-0A	00169400	0.46	est.
Richardson, Ronald	River Road	20/001-03	00183020	3.22	est.
Rivers, John & Olin, Sara	River Road	47/002-0B	00181810	0.72	
Royce Properties	Ruby Road	42/045-00	00074800		
			00074801		
			00074802		
			00074803	1.26	est.
Services Development Corp.	Ruby Road	42/048-01	00194100	58.57	
Dulac, Elizabeth	Tinkerville Road	36/008-0A	00058010	1.04	est.
Raiola, Francis & Christine	Tinkerville Road	36/008-0B	00058020	3.47	est.
RMJ Associates, LLC	Village Hill Road	39/012-00	00215400	1.50	est.
Strickland , Douglas & Sherry	Village Hill Road	47/014-00	00052400	5.09	
Irma Vonasek	Willington Hill Road	18/063-01	00218810		
		18/063-02	00218820	2.58	
Sub-total Town				222.89	
<u>Easement to Joshua's Trust</u>					
Rosalie Heck	Common Road	27/003-00	00090400	8.15	
		27/004-00	00090500	3.61	
		27/007-00	00089900	1.50	
		27/007-0A	00090000	31.82	
		27/009-00	00090100	29.80	
	Jared Sparks Road	27/011-00	00090200	44.64	
Sub-total Trust				119.52	
Total Easements				353.03	
TOTAL ACREAGE				2,396.23	