



Open Space and Recreation Plan

2012 – 2017

Town of Groton
July 2012

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1. PLAN SUMMARY

The Town of Groton is transitioning from a rural farming community to a suburban bedroom community. Balancing growth demands with the preservation of the rural characteristics that Groton's residents value is a constant challenge. Maintaining scenic vistas, agricultural landscapes, and natural resources is important to the community, and Groton has an impressive legacy of protecting open space. The Town's open space inventory now includes 8,254 acres of open space, approximately 42 percent of the town's total land area. Additional parcels have some degree of protection through Chapter 61 designations or are owned by institutions and, while not legally protected, are unlikely to be developed.

Since the 2005 *Open Space and Recreation Plan*, Groton has added thirty-six parcels and approximately 1,700 acres to its open space inventory. This includes notable parcels such as The General Field/Surrenden Farm, the Rocky Hill Wildlife Sanctuary owned by the Massachusetts Audubon Society, the eastern shore line of Baddacook Pond, the Academy Hill Conservation Area, and Gamlin Crystal Spring. The protection of The General Field/Surrenden Farm property is particularly noteworthy. The property, which includes considerable frontage on the Nashua River; extensive agricultural fields, wetlands, and forested areas; and a collection of historic buildings, was slated for the development of 130 new homes. The Town, Groton School, The Trust for Public Land, the Groton Conservation Trust, and many private individuals contributed to the acquisition and protection of this invaluable resource.

Groton has also improved several recreation facilities since 2005 and accomplished many items from the 2005 Action Plan, including: hiring a Town Forester and planning for sustainable forestry management on conservation lands; forming an Agricultural Commission to encourage farming activities; acquiring land for a new municipal well; passing the Stormwater Management—Low Impact Development regulations; completing GIS mapping of trails; and maintaining an up-to-date inventory of conservation lands.

The 2012 *Open Space and Recreation Plan* builds on the work conducted as part of Groton's 2011 Master Plan, which outlines the community's long-term vision. The 2012 *Open Space and Recreation Plan* focuses on a shorter term vision for open space and recreation in Groton and responds to the current needs and desires of the town's residents as expressed through meetings, surveys, and public forums conducted as part of the master planning process and for this open space and recreation plan update. The goals, objectives, and action plan outlined in this plan complement the Master Plan and will serve as the framework for open space and recreation planning in Groton over the next five years. The community's dual desires to enhance recreational opportunities and maintain Groton's rural character by protecting its agricultural landscapes and natural resources form the foundation for this plan. The Five-Year Action Plan (Section 9) outlines specific actions the Town can take to accomplish these overarching goals.

Critical needs, recommendations, and action items included in this plan include the following:

- An increased focus on preserving Groton's agricultural heritage. Preserving agricultural landscapes is a cross-cutting theme in the 2011 Master Plan and is an area that the community felt deserved an increased focus in open space and recreation planning.
- Since the 2005 *Open Space and Recreation Plan*, Groton's municipal recreation department has been cut due to budgetary constraints. There is a desire among some community members to expand the recreational offerings in town (currently offered by private providers) to include a more diverse range of activities, including programs for adults, seniors, and disabled populations, as well as more affordable options. Also, there is concern that without a municipal recreation department, there is no public entity focused on long-term capital needs for recreation. While additional, targeted planning is required to determine the demand for new programs and whether a municipal recreation department should be reinstated, in the short term Groton needs to find a way to address the need for recreation facility capital planning.
- Despite Groton's impressive open space inventory and commitment to preservation, several important natural and agricultural resources remain unprotected. Future preservation efforts should focus on filling these gaps in protection. Also, additional research and analysis is required to help target future land acquisitions to the highest priority parcels in terms of biodiversity and ecosystem function.
- Groton needs to improve the management of its existing conservation lands. Ideally, each parcel should have a management plan tailored to its specific needs.
- Improving public outreach related to open space conservation, natural resource management, and available recreation resources is a cross-cutting need identified in this plan.

The following plan is presented in accordance with guidance from the Commonwealth of Massachusetts Division of Conservation Services.

2. INTRODUCTION

A. Statement of Purpose

The 2012 *Open Space and Recreation Plan* is the third update to the Town's *Open Space and Recreation Plan*, which was first completed in 1985, and updated in 1998 and again in 2005. Groton's legacy of open space planning is indicative of the Town's ongoing commitment to open space preservation, which is continually evolving and has resulted in a substantial inventory of conservation and recreation lands. Since 2005, Groton has made a concerted effort to accomplish items included in the 2005 Action Plan. Some notable accomplishments include: the creation of a Town Forester position, the implementation of sustainable forestry management practices on conservation land, the formation of an Agricultural Commission that encourages farming activities, the acquisition of land for a new municipal well, the passage of a Stormwater Management–Low Impact Development (LID) bylaw and regulations, the completion of GIS mapping of trails, and the maintenance of an up-to-date inventory of conservation lands. Additionally, the Town has made improvements to several recreation facilities and added thirty-six parcels and 1,701 acres to its open space inventory.

This updated plan includes current information on Groton's natural resources as well as its most recent conservation and recreation inventory. Based on this information, the 2012 plan modifies Groton's open space goals, objectives, and action plan to reflect the community's evolving needs while recognizing Groton's ongoing challenge to balance growth and development with resource protection. This plan is a complement to Groton's 2011 Master Plan and provides a framework for open space and recreation planning for the next five years, offering a guiding vision as well as specific action items.



B. Planning Process and Public Participation

This update of the *Open Space and Recreation Plan*, spearheaded by the Groton Conservation Commission, was tied to Groton's 2011 master planning process. The consulting firm Community Opportunities Group, Inc. was hired to develop both plans. The master planning process included a robust public participation element that included several town-wide meetings as well as topic-specific advisory groups. The work of two master plan advisory groups, the Natural Resources, Water, and Energy Advisory Group and the Open Space and Recreation Advisory Group informed this plan. Public participation specific to the *Open Space and Recreation Plan* update included a survey, distributed in February 2011 (the

survey and results are presented in Appendix A) and a public forum held in May 2012 that solicited feedback on needs, goals and objectives, and action items. To advertise the forum, a flyer was posted around town and distributed (via email) to members of the Board of Selectmen, Finance Committee, Community Preservation Committee, Planning Board, Greenway Committee, Trails Committee, Stewardship Committee, Zoning Board of Appeals, Park Commission, Housing Trust, Groton Conservation Trust, and Historic Districts Committee, as well as local realtors. Consultants also worked directly with the Groton Conservation Commission, representatives from the Groton Park Commission, and Town staff to gather the required information for this update. Barbara Ganem, Groton's Conservation Administrator, was instrumental in compiling the information that informed this plan.

As required, a draft of this plan was reviewed by the Groton Board of Selectmen, the Groton Planning Board, and the Montachusett Regional Planning Commission (see Section 10). Comments from these entities have been addressed and incorporated into this plan.

C. Enhanced Outreach and Public Participation

There are no identified environmental justice populations in Groton according to the most current MassGIS data.

3. COMMUNITY SETTING

A. Regional Context

1) Physical location and major watershed address

Groton is a rural-residential town in northwestern Middlesex County. Bordered by Pepperell and Dunstable to the north, Tyngsborough and Westford to the east, Littleton and Ayer to the south, and Shirley and Townsend to the west, Groton provides convenient access to the region's business, cultural, and recreational opportunities. It also provides convenient access to regional employment centers, for Groton lies thirteen miles east of Fitchburg, fifteen miles west of Lowell, and thirty-one miles northwest of Boston. Business growth along Route 495 has placed residential development pressures on Groton, though to a lesser extent than a decade ago. Today, Groton is primarily a bedroom community with very few businesses.

Groton covers 33.7 square miles of land and water in the northeast quadrant of the Central Uplands of Massachusetts, which extend from Chelmsford and Milford in the east to Northfield and Hampden in the west. The Central Uplands are characterized by drumlin hills and outwash plains. Extensive post-agricultural forests interspersed with wetlands typify the region and can be seen in the eastern portion of Groton.

Groton is nearly bisected by the Nashua and Merrimack watersheds. The drumlin hills that run north-south through town serve as the watershed divide. These watersheds contain the town's two major rivers, the Squannacook and Nashua, and various smaller water bodies.

Groton is a relatively affluent town. Most residents are well-educated and hold high-paying professional, managerial, or other office jobs and the median household income is very high. The unemployment rate in Groton typically falls below the average for the state as a whole and all of the surrounding communities. Despite Groton residents' relative financial well-being, there are, as in all communities, areas of need. Also, though the current economic downturn has affected the community less than other parts of the US, the same indicators of financial distress—such as unemployment, which most recently was twice the 2005 level, and foreclosure—are present in Groton. Groton's open space and recreation planning needs to consider this socio-economic diversity and its attendant needs.

2) Resources of regional significance

Nashua River. One of Groton's best-known shared resources is the Nashua River. This scenic and recreational resource spans thirty-six linear miles from the Wachusett Reservoir to its confluence with the Merrimack River, and it is used primarily for boating and fishing. The Town has worked with the Nashua River Watershed Association and other conservation groups, including the Groton Greenway Committee, to protect over 1,500 acres of land along the River corridor. From the Town Forest in the south to the State Forest in the north, public access is provided along most of the waterway's course throughout Groton.

Squannacook River. This waterway meanders over fourteen miles from its headwaters in the Town of Ashby to its confluence with the Nashua River. It is used primarily for boating and fishing. Under the Squannacook and Nissitissit Rivers Sanctuary Act (MGL c. 132A, § 17), the Squannacook River and associated named tributaries are recognized as Outstanding Resource Waters of the Commonwealth. The Act limits new point-source discharges. The Massachusetts Division of Fish and Wildlife as well as Groton and local conservation groups have protected almost 300 acres adjacent to the Squannacook, providing access to more than half the shoreline in Groton.

Lost Lake/Knops Pond. This area is one of the most popular regional recreational resources in Groton. Over 200 acres of water supports a number of aquatic activities, including swimming, fishing, and boating. The state owns a public boat launch off Pine Trail. Groton's Town Beach on the southern shore, Sargisson Beach, provides public access to beach and picnic facilities, as well as opportunities for fishing. A private camp and conference center, Grotonwood (owned and operated by The American Baptist Church of Massachusetts), dominates the western shore of the lake and offers its visitors many of the same recreational opportunities.

Other Ponds. The 113-acre Massapoag Pond, located in Groton, Dunstable, and Tyngsborough, primarily supports passive recreation, including light boating and fishing. Long Pond is a 44-acre water body shared by Ayer and Groton. Because portions were slated for residential development, a 421-acre parcel was donated as a new sanctuary for Massachusetts Audubon with a Conservation Restriction held by the Groton Conservation Commission. Flat Pond has access and is very popular for fishing and boating.

Public water supply. The shallow depth and fine silts and sands of Groton's aquifers are not ideal for the development of wells for public water supplies. Landfills, potential pollution from industrial uses, and development in various towns could have a negative effect on regional water supply and quality, which means that neighboring communities should coordinate their land use policies. For example, the West Groton Water Supply District operates wells on the bank of the Squannacook River just north of West Groton Center and within the Groton Town Forest. Pollutants discharged upstream in neighboring towns could affect the quality of West Groton's drinking water. The water supply's proximity to Townsend Road is a concern, too. In addition, Pepperell's water supply is potentially at risk from land uses near Groton's Nashua Road area. The Town of Pepperell has one water supply well approximately 1,000 feet from the Groton border. The well supplies fifty percent of Pepperell's drinking water, with a second public well 2,000 feet from the town line and also within the same aquifer. Although the land in Groton is residentially developed and seems to pose no risk, excessive use of pesticides and other lawn chemicals and nitrate loading from septic systems could migrate to Pepperell's public water supply wells via groundwater. For this reason, residents should be made aware of their role in groundwater protection.

There are several treatment plants located upstream, including those approved for Groton School, Ayer, Devens, Clinton, Fitchburg, Leominster, and Shirley, which could potentially contaminate local waters. A failure of any kind, including exceeding capacity, could cause untreated sewage to flow downstream. This could allow for migration of the discharge into groundwater and potentially affect water supplies in neighboring towns.

Groton Pool and Golf Center. Formerly the Groton Country Club, the Groton Pool and Golf Center is one of the Town's best-known recreational resources and provides a scenic, open landscape in the Town Center. Located near the Town Center, this 113-acre site includes a nine-hole golf course, tennis courts, volleyball court, swimming pool, outdoor pavilion, and function hall. It serves as a site for various school and town programs and attracts golfers from the general area. The function hall is available for rent and serves a wider audience. This publicly-owned facility is open to the general public, with golf and swim membership fees slightly higher for non-residents than for residents.

Hazel Grove Park. Formerly known as the Groton Fairgrounds, the Park Commission has recently formed the Hazel Grove Planning Committee to undertake a study for the future betterment, improvement, and maintenance of this area. It has historically been used for regional equestrian activities, and is an important town resource.

Rocky Hill Wildlife Sanctuary. A beautiful, remote landscape recently donated to the Massachusetts Audubon Society (protected by a Conservation Restriction), this conservation land offers walking trails and protects the biodiversity of the area.

Public Land. Groton has an inventory of over 8,264 acres (about 42 percent of the town) of protected open space that support a variety of active and passive recreational uses. One of the best known sites is the J. Harry Rich State Forest (506 acres), the first state-owned tree farm. It provides habitat for many valuable plant and animal species and provides access to the Nashua River. The Town Forest (505 acres) is primarily cultivated for forest products, but it also hosts a number of recreational activities and provides access to the Nashua and Squannacook Rivers. Another large parcel is the Wharton Plantation (717 acres), owned by the New England Forestry Foundation and managed for timber, wildlife, and passive recreation while providing protection to the municipal water supply. The Shattuck property on Martins Pond Road, a parcel on the Throne, Surrenden Farm with its striking views west to Mt. Watatic, and the purchase of conservation restrictions to protect 250 acres of drumlins known as Gibbet and Angus Hills are all examples of recent land acquisitions by the Town. Groton's facilities are numerous and large, and they support a wide variety of activities. As a result, people from other communities often come to Groton to use the town's land resources.

Oxbow National Wildlife Refuge. The Oxbow National Wildlife Refuge, located in Harvard on the Nashua River, serves primarily as a wildlife habitat, and is a prime area for nature observation and other passive recreational activities. A 662-acre parcel was transferred to the U.S. Department of the Interior by Fort Devens in 1972. Over 1,000 acres were added to the original 662 acres with the conversion of Fort Devens to the Devens Enterprise Zone, providing a total of over 1,600 acres in the Oxbow National Wildlife Refuge.

Fort Devens. Fort Devens, located in Ayer, Shirley, and Harvard, offers 1,400 acres of open space and recreation land for public use. This land includes the following amenities:

- *Hiking.* Hiking trails cover 600 acres leading to Mirror Lake, a spruce bog, unusual topography, and a variety of wildlife.

- *Swimming.* The swimming season runs from Memorial Day through Labor Day. Paddleboats, canoes and kayaks are available for rental.
- *Fishing.* The Massachusetts Division of Fish and Wildlife stocks the lake in the early spring. Non-motorized boats, canoes and kayaks may be launched from the boat landing.
- *Picnic.* Picnicking is allowed at Mirror Lake and Robbins Pond.
- *Tennis.* There are four tennis courts, a basketball court and two handball courts.
- *Fields and facilities.* Forty-four acre Rogers Field is available for sporting events and camp programs. Willard Park has one multi-use field and three softball fields.
- *Golf.* Red Tail Golf Club offers an eighteen-hole par 72 championship golf course covering 7,000 acres. The 2012 in-season rates range from \$99 on weekends with a cart to \$34 for weekday evenings without a cart.
- *Devens Fitness and Wellness Center.* A wide variety of programs are offered including a fully equipped fitness center. Group exercise classes, organized basketball and racquetball leagues and wellness programs.

Squannacook River Wildlife Management Area (WMA). The WMA extends along the western shore of the Squannacook River in eastern Townsend and northern Shirley and along the eastern shore in southern Groton. It adjoins the Bertozzi Wildlife Management Area, which is owned by the Town. The WMA supports activities such as fishing, hiking, hunting, canoeing, swimming, camping, and jogging, in addition to providing significant wildlife habitat.

Nissitissit River Wildlife Management Area. Located in northern Pepperell and extending to the New Hampshire border, this WMA supports most of the activities and uses available in the Squannacook River WMA.

Townsend State Forest. Located in northern Townsend along the New Hampshire border, this preserve covers a large expanse of land. Vegetative and wildlife habitats are supported, along with passive recreational activities in this woodland sanctuary.

Willard Brook State Forest. Located in southwest Townsend and shared with the Town of Ashby, the area supports light recreational use in addition to a variety of habitats for many plant and animal species.

Former Ayer State Game Farm. Located in northwestern Ayer near the Nashua River, this area is connected by trails



to Groton's Town Forest but is technically not accessible to the public. Pheasants and other game birds were formerly raised by the state at this location.

Nashua River Rail Trail. A 5.6-mile portion of this regional trail runs through Groton, serving as a linkage for the Towns of Hollis, New Hampshire; Dunstable; Pepperell; Groton; and Ayer. It supports light recreation such as bicycling, hiking, horseback riding, jogging, and roller-skating. Completed in 2002, the rail trail is a very popular destination both for residents and non-residents. The Department of Conservation and Recreation owns and maintains the Rail Trail, which, in addition to its recreational uses, serves as a non-motorized transportation linkage to the MBTA Commuter Rail Station in downtown Ayer.

Beyond these well-known areas, the surrounding towns have a significant inventory of land available for public use that is not widely publicized. In particular, Harvard, Pepperell, Townsend, and Westford have sizable land holdings for passive or active recreation by residents of nearby communities.

3) Regional relationships

Development in the towns around Groton will affect shared resources such as water, open space, recreation, and scenic areas. Groton has done and continues to do an excellent job in protecting and linking natural resources, involving a number of public and private groups in acquiring important land for conservation purposes. Coordinating these efforts with neighboring towns could help to establish a multi-town open space network. Protected areas should be linked, where feasible, across town boundaries to form a regional greenway system that provides recreational access as well as preserves wildlife habitats and essential corridors.

The planning and development of the Nashua River Rail Trail brought Groton together with neighboring Ayer, Dunstable, and Pepperell. The Nashua River Rail Trail, which extends from Ayer to Nashua, NH and passes through Groton, required public input and permitting from all abutting towns in order for the project to become a reality. This regional resource links open space in all of the communities to the spine of a regional greenway system. It shows that inter-local cooperation can benefit everyone.

Beyond open space, Groton has historically cooperated with neighboring towns on water supply and other matters. Groton has an inter-connection with Westford in case of an emergency need for water. The Town has kept an open line of communication with Pepperell regarding plans for infrastructure improvements. Two of Pepperell's main public water wells are very close to the Groton border, with the main portion of the aquifer or Zone II in Groton. Discussing future improvements that could affect one another has been important for both towns in mitigating impacts. Groton has also benefited from a municipal agreement with the Town of Pepperell Department of Public Works Commission for the use of the Wastewater Treatment Plant in Pepperell on the east side of Nashua Road. Still, there are concerns that sending Groton sewer discharges to Pepperell could mean local waters are not being adequately recharged.

In a more formal and structured way, Groton and other area municipalities share information through regionally provided services. The Town belongs to the Nashoba Associated Boards of Health (NABH),

which provides shared public health services to fifteen area communities. Groton, Ayer, and Dunstable share a health agent who conducts inspections and investigations and makes recommendations to local Boards of Health. In this way, towns may be alerted and act on health issues in neighboring towns that may affect them.

Groton's involvement with other regional boards and committees is important for protecting open space and natural resources within and beyond its own boundaries. The Montachusett Regional Planning Commission (MRPC) and the Nashua River Watershed Association (NRWA) are both involved in planning and open space issues in the region. Groton works closely with the latter organization and its locally appointed Greenway Committee in acquiring and protecting land along the Nashua and Squannacook Rivers.

Areas of Critical Environmental Concern (ACEC). One of Groton's most significant regional relationships is its membership in two ACECs. The Petapawag ACEC includes 25,680 acres in Ayer, Dunstable, Groton, Pepperell, and Tyngsborough, and the Squannassit ACEC consists of 37,420 acres in Ashby, Ayer, Groton, Harvard, Lancaster, Lunenburg, Pepperell, Shirley, and Townsend.¹ These areas were officially designated on December 11, 2002 by former Secretary of Environmental Affairs Robert Durand. The process that led to ACEC nominations began in 1997 with cooperative efforts among local land trusts and the Nashua River Watershed Association. They recognized the existence of major, protected open spaces connected by the Squannacook River, e.g., Pearl Hill State Park, Willard Brook State Forest, Townsend State Forest, the Squannacook WMA, the Hunting Hill area of Shirley and Lunenburg, the Throne Hill areas of Groton and Pepperell, and Groton Town Forest. This pattern of large, protected open spaces connected by river corridors continues up the Nashua River, with Sabine Woods and the J. Harry Rich State Forest, and along the Nissitissit River into New Hampshire, where it connects with the Beaver Brook area and loops back to the Squannacook headwaters.

Awareness of these intact natural areas grew into the Squannassit and Petapawag ACEC nominations. The fundamental reason for the nominations was the need to protect both open spaces *and* the interconnections that are essential to maintaining the biological diversity of the entire region. The NRWA currently serves as facilitator for the Squannassit-Petapawag ACEC Stewardship Committee.

B. History of the Community

Located on the Nashua River in a place formerly called Petapawag ("swamps on a hill"), Groton was settled in 1655 as a plantation. Dean Winthrop, one of the first petitioners and son of Governor Winthrop, named the town after Groton Manor, the Winthrop Estate in England where he was born. As first laid out, the land grant was eighty miles square and included the present Towns of Groton, Ayer, nearly all of Pepperell and Shirley, large parts of Littleton and Dunstable, and small portions of Harvard, Westford and Nashua, New Hampshire. Groton Plantation covered over twice its present thirty-three square miles

¹ Massachusetts Department of Conservation and Recreation, ACEC Program, <http://www.mass.gov/dcr/stewardship/acec/index.htm>.

before portions were annexed to establish the Towns of Dunstable in 1673, Pepperell in 1742, Shirley in 1753, and Ayer in 1871.

The earliest seventeenth century settlers pushed northwest from Concord and moved into heavily forested Native American hunting grounds, which were well stocked with game and fish. As the land was cleared, settlers found most of it to be covered with enough loam to be suitable for agriculture. The converted the forests to farms, orchards, and pastures.

At the time of English migration, the Nashaway (Nashua) people populated the area. They were aligned geographically with the Nipmuc tribes of Central Massachusetts and linguistically and culturally with the Algonquian. The main tribal seat of the Nashaway, Washacum, was located in the Town of Sterling, and their territory included the area around Wachusett Mountain and along the Nashua River. The tribes of Massachusetts were divided into many local bands, with a few dozen to a few hundred people sharing a settled village for part of the year and a common hunting and gathering territory for the rest of the year. Even though the tribes possessed cultural and linguistic ties (speaking related Algonquian languages), they lacked political unity.

As a consequence of their mobile way of life, the Native Americans acquired few material possessions and shared what they had. They owned what they could readily carry through their annual cycle of shifting encampments. Their culture valued leisure and generosity more than the laborious accumulation of individual property. By contrast, the colonists lived and worked on fixed properties, with framed houses and barns set amid fenced fields that were grazed by privately owned animals. By 1675, the Native Americans began to feel threatened by the steady advance of the colonial frontier. The Nipmuc were squeezed by the settlement of eastern Massachusetts and those along the Connecticut River, but dared not move further west into Mohawk territory. In addition, the tribes suffered horrific population losses to continuous epidemics between 1614 and 1675, most likely due to the lack of immunity to diseases brought by the colonists.

Conflict arising from culture clash was inevitable. During King Philip's War in 1676, Groton was attacked three times and on March 13, the town was completely burned to the ground, except for four garrison houses. The inhabitants departed and stayed away for two years before they returned to rebuild their homes. King Philip (Metacom) was captured and executed on August 12, 1678. Most of the defeated Native Americans surrendered or were captured. The women and children were parceled out to colonial families as servants and the men were sold into the foreign slavery market. Shoshonin (Sagamore-Sam) chief of the Nashaway, Monoco, and five other Nashaway tribal leaders were taken to Boston and hanged. Those who had allied with the colonists persisted as small minorities dwelling on a few small reservations, or in "praying Indian towns." Some escaped to the North and took refuge among the Abenaki people in Maine and French Canada.

Hostilities did not end with King Philip's death. In a long series of wars, these refugees and their descendants guided French raids against the New England frontier settlements. Two of these wars between the French and the English had repercussions for Groton. In 1694, during King William's War, and again in 1707 during Queen Anne's War, Groton was attacked and a number of colonists killed or

captives taken. During the 1670s, the colonists returned to rebuild their burned homes while newcomers flocked to the lands left vacant by the death and exile of the defeated Native Americans. By remaking the land, colonists destroyed the resources the Native Americans depended upon to preserve their autonomy and way of life

During these and many other wars, including the Revolutionary War, Groton sent many men to fight. Colonel William Prescott, who was born in Groton, served as Commander of the American forces at the Battle of Bunker Hill in Boston. After the French and Indian wars, quite handsome eighteenth century colonial houses replaced the long huts and garrison houses of the early period. By 1776, Groton had over 600 inhabitants, a meeting house, a fine inn with a broad veranda in the center of town, a smithy, and a few stores.



During these years life centered around the church, which had the Puritan form of worship until 1826, when the First Parish Church became Unitarian and the cornerstone was laid for the Union Meeting House (Congregational). The First Baptist Church was built in 1842, and in 1905 the original Groton School Chapel was given to the Roman Catholics to use as their house of worship (Sacred Heart). In West Groton, the Christian Union Church (Congregational) was erected in 1885, and the St. James Church (Roman Catholic) was constructed in 1929. In addition, Groton Academy was incorporated in 1793 and renamed Lawrence Academy in 1845. It served as the local high school until 1871, when Butler High School was built. In 1884, the Reverend Endicott Peabody founded Groton School for Boys (Episcopal), patterned after the English Public Schools.

Groton grew slowly throughout the nineteenth century. Its chief economic activity, agriculture, was supplemented by four or five mills. Several apple orchards that remain today are evidence of this farming activity that also enhanced roadside views. Lawrence Academy on Main Street, and later Groton School on Farmer's Row, built several fine buildings to house students and faculty and developed athletic fields, both of which contributed to the aesthetic beauty of the town. To the southwest, the junction of two railroads stimulated commercial and industrial growth and activity. This border area broke away to become the Town of Ayer in 1870. Almost half the population of Groton was lost when Ayer incorporated.

The twentieth century has been marked by changes that have shaped Groton into the town it is today. Electricity and natural gas were introduced in 1909 and 1931, respectively. The arrival of the automobile and later, its choice as the preferred mode of transportation, triggered roadway improvements which helped to disperse businesses and residences. Long considered a slow-growing agricultural community, Groton saw growth and development increase dramatically toward the end of the twentieth century, largely because of employment growth and housing demand on the Route 495 corridor. A number of

large farms were divided and other open areas were converted to residential developments. Although Groton is not growing as rapidly as other nearby communities, growth in town is steadily accelerating.

Today, Groton is growing into a community of homes around a historic village core that still maintains its charm and beauty. There are a number of industries in Groton, including the Hollingsworth and Vose Paper Company, the Carver's Guild, INSCO, and the main office of Deluxe Corporation. Timely steps have been taken by public bodies and private organizations to meet the challenges of growth; but the pace of change requires continued attention and action in order to preserve Groton's character and quality of life.

C. Population Characteristics

1) Population growth

Groton experienced strong population growth in the past decade, but the decennial growth rate was less than half of what it had been in the 1990s.

Table 3.1: Population Growth, 1950-2010, Groton and Region						
Community	1950-1960	1960-1970	1970-1980	1980-1990	1990-2000	2000-2010
Ayer	160.1%	-50.5%	-5.4%	-1.7%	6.1%	1.9%
Dunstable	57.9%	56.8%	29.3%	33.8%	26.5%	12.4%
Groton	35.1%	30.9%	20.5%	22.1%	27.1%	11.5%
Littleton	117.5%	24.9%	9.3%	1.2%	16.1%	9.0%
Pepperell	25.3%	35.8%	36.9%	25.3%	10.3%	3.2%
Shirley	21.8%	-5.6%	4.4%	19.4%	4.2%	13.2%
Townsend	29.6%	17.3%	68.2%	18.0%	8.3%	-3.0%
Tyngsborough	60.4%	27.3%	35.2%	52.1%	28.2%	1.9%
Westford	46.9%	65.6%	29.6%	22.0%	26.6%	5.8%
Source: MA State Data Center and US Bureau of the Census, Census 2010.						

2) Population and housing density

Groton's overall population density has increased, but the town remains one of the more sparsely populated communities in the area. It has a lower population density per square mile than most of its neighbors, many of which are also lightly populated suburbs. Groton's housing density is also low: an average of 0.19 units per acre, the third lowest in region.

Table 3.2: Population and Housing Density: Groton and Region				
Area Name	2010 Density (Persons per sq. mi.)	Acres	Units	Units/Acre
Ayer	823.7	5,770.9	3,462	0.60
Dunstable	192.1	10,590.5	1,098	0.10
Groton	324.9	20,973.4	3,989	0.19
Littleton	537.0	10,635.8	3,477	0.33
Pepperell	509.6	14,440.3	4,348	0.30
Shirley	455.7	10,127.7	2,427	0.24

Table 3.2: Population and Housing Density: Groton and Region

Townsend	271.5	21,038.1	3,385	0.16
Tyngsborough	669.9	10,787.7	4,206	0.39
Westford	717.1	19,590.5	7,876	0.40

Source: MA State Data Center; US Bureau of the Census, Census 2010, and 2010 Census Redistricting Data (Public Law 94-171) Summary File.

3) Population age

In Groton, the largest age cohort currently is school-age children (ages 5-19 years). Though larger in absolute numbers than it was in 2000, this age group is roughly the same proportion of the general population as a decade ago. Although this age group will decline as the “Echo Boom” generation (children of the Baby Boom generation) gets older, in-migration will probably keep its numbers relatively high because Groton is such an attractive place for families.

The other significant age cohort in terms of open space and recreation planning is the sixty-five and older population whose numbers will rise as the Baby Boom became seniors and move into their retirement years. These trends indicate a continued need for recreational programming for children, and even more so, for older adults and seniors.

Table 3.3: Population Age in Groton 2000-2010

Age Cohort	2000		2010		Percent change 2000-2010
	No.	%	No.	%	
Under 5 years	837	8.8%	517	4.9%	-38.2%
5 to 19 years	2,436	25.5%	2,750	25.8%	12.9%
20 to 24 years	244	2.6%	384	3.6%	57.4%
25 to 34 years	968	10.1%	672	6.3%	-30.6%
35 to 44 years	2,155	22.6%	1,485	14.0%	-31.1%
45 to 54 years	1,505	15.8%	2,363	22.2%	57.0%
55 to 64 years	734	7.7%	1,438	13.5%	95.9%
65 to 74 years	362	3.8%	584	5.5%	61.3%
75 years and over	306	3.2%	453	4.3%	48.0%
Total	9,547	100.0%	10,646	100.0%	11.5%

Source: Census 2000 and 2010.

4) Socio-economic characteristics

Groton is home to a well-educated and generally affluent population who tend to hold professional, white-collar jobs. The town has a high labor force participation rate; a large majority of its over-sixteen civilian population works or is looking for work. In addition, sixty-five percent of Groton’s population holds advanced degrees, a proportion higher than any other surrounding town. These factors translate into a relatively large segment of the population working in high-paying jobs. Over sixty-three percent of the town’s labor force hold management and/or professional positions, which undergird the town’s extremely high median household income of \$118,041.

Table 3.4: Labor Force Characteristics, Groton and Region

Community	Labor Force	Labor Force Participation Rate	Population 25 Yrs. and Over	College, Graduate, Prof. degrees (Percent)	Median Household Income
Ayer	4,326	69.3%	5,383	30.4%	\$55,529
Dunstable	1,823	75.8%	2,126	42.3%	\$109,333
Groton	5,526	74.5%	6,595	65.3%	\$118,041
Littleton	4,313	65.2%	6,001	46.5%	\$98,555
Pepperell	6,782	78.3%	7,308	38.9%	\$88,185
Shirley	3,308	51.4%	5,822	26.0%	\$72,530
Townsend	5,377	74.2%	6,130	29.2%	\$75,174
Tyngsborough	6,718	74.9%	7,546	40.3%	\$98,413
Westford	11,530	71.6%	14,076	61.1%	\$119,051
Source: ACS 2005-2009, and Community Opportunities Group, Inc.					

Table 3.5: Labor Force by Occupation

	Number	Percent
Management, professional, and related occupations	3,342	63.6%
Service occupations	445	8.5%
Sales and office occupations	1,048	20.0%
Farming, fishing, and forestry occupations	0	0.0%
Construction, extraction, maintenance, and repair occupations	259	4.9%
Production, transportation, and material moving occupations	158	3.0%
Total	5,252	100.0%
Source: American Community Survey, 2005-2009		

Despite Groton's affluence, there are pockets of need. The median income for seniors over sixty-five is less than half of the town's median income. Also, nineteen percent of the town's families have annual incomes below \$75,000, and Groton has an isolated number of households receiving some form of public assistance. Although Groton has relatively low unemployment (6.2 percent in Groton versus 8.2 percent statewide in March 2011), the local rate is nearly double what it was in 2005 and three times that of 2000.² These indicators suggest many Groton residents struggle financially. The town needs to be careful not to overlook the needs of its less-affluent members when designating open space and recreation priorities.

² Massachusetts Department of Revenue (DOR), Division of Local Services, "Labor Force and Unemployment Rates, 1990 to Present" and "Labor Force and Unemployment Rates, 2010 to Present," Municipal Data Bank (data file), <http://www.dls.state.ma.us/mdm.htm>.

Table 3.6: Groton Industries, 2009

	Number of Establishments	Average Monthly Employment (No.)	Average Monthly Employment (%)
Industry			
Construction	43	141	4.3%
Manufacturing	7	415	12.7%
Durable Goods Manufacturing	3	45	
Non-Durable Goods Manufacturing	4	370	
Wholesale Trade	12	25	
Retail Trade	21	279	0.8%
Transportation and Warehousing	10	59	8.5%
Information	8	30	1.8%
Finance and Insurance	6	62	0.9%
Real Estate and Rental and Leasing	7	18	1.9%
Professional and Technical Services	38	95	0.6%
Administrative and Waste Services	17	64	2.9%
Educational Services	7	660	2.0%
Health Care and Social Assistance	26	461	20.2%
Arts, Entertainment, and Recreation	5	28	14.1%
Accommodation and Food Services	18	324	0.9%
Other Services, Ex. Public Admin	24	43	9.9%
Total	263	3,266	1.3%
Source: Massachusetts Department of Labor and Workforce Development, Economic Data Programs, Labor Force and Unemployment and Employment and Wages (ES-202), and Community Opportunities Group, Inc.			

5) Employment

Groton is primarily a residential community, and there are only small pockets of commercial and industrial development. However, the town does support a modest employment base. According to the state Department of Labor and Workforce Development (EOLWD), Groton had 263 employer establishments and about 3,200 jobs.³ These jobs are concentrated in three industries: educational services, health care and social assistance, and manufacturing. Like many suburbs, Groton has more residents in the labor force than the number of jobs in its employment base, so the town exports workers to surrounding communities. In 2009, the most recent year for which full-year employment statistics are currently available, Groton's ratio of local employment to residents in the labor force was 0.59.⁴

³ Since the EOLWD figures only reflect certain types of businesses and jobs, these figures underestimate the total number of total Groton businesses and jobs. For example, the Groton Board of Trade (the town's local business organization) lists 640 businesses in its local business database.

⁴ Massachusetts Department of Labor and Workforce Development, Economic Data Programs, Labor Force and Unemployment and Employment and Wages (ES-202), and Community Opportunities Group, Inc.

There are some prospects for new commercial development in Groton. In particular, the Town Center Overlay District area in Groton Center may be able to support additional commercial and mixed-use development. However, overall the town does not have much commercial and industrially zoned land, and therefore significant business expansion is unlikely. Going forward, it is likely that the primary competing land use with open space will continue to be residential development.

D. Growth and Development Patterns

1) Patterns and trends

Groton began as an agricultural community with three distinct villages—Groton Center, West Groton, and Lost Lake. Each village grew from a different set of forces. Groton Center grew up around the churches and schools located near the center of town, West Groton developed out of industry that sprung up along the Squannacook River, and Lost Lake evolved as an enclave of summer cottages on the shores of some of the town's most beautiful water bodies. Today, what were previously farms and orchards have been increasingly developed into low-density residential areas. Though the villages remain intact and have strong identities, much/most of the residential life in Groton takes place outside these historic areas in newer subdivision or house lots on established roadways.

RESIDENTIAL GROWTH TRENDS

Groton has grown rapidly in the past three decades, transitioning from its rural, agricultural roots to an emerging suburb. Boston-area housing costs and the movement of employment centers to the outer suburbs have made Groton and its neighboring communities extremely attractive places to live. Though the westward migration of housing growth continues, recently the pace has declined somewhat. Between 2000 and 2010, household growth slowed to almost half of what it was in the 1990s, and housing unit growth also decreased, though not as dramatically. Moreover, residential building permit data suggest that much of the growth that occurred in the 2000s happened in the first part of the decade, before the housing bubble burst and the onset of the economic recession.

Table 3.7: Household and Housing Unit Growth, 1990-2010

Households						Housing Units				
Pct. Change						Pct. Change				
	1900	2000	2010	1990-2000	2000-2010	1990	2000	2010	1990-2000	2000-2010
Groton	2,577	3,268	3,753	26.8%	14.8%	2,774	3,393	3,989	22.3%	17.6%
Ayer	2,681	2,983	3,118	11.3%	4.5%	2,891	3,154	3,462	9.1%	9.8%
Dunstable	692	936	1,063	35.3%	13.6%	737	944	1,098	28.1%	16.3%
Littleton	2,562	2,960	3,297	15.5%	11.4%	2,691	3,055	3,477	13.5%	13.8%
Pepperell	3,385	3,845	4,197	13.6%	9.2%	3,505	3,917	4,348	11.8%	11.0%
Shirley	2,089	2,061	2,264	-1.3%	9.8%	2,183	2,158	2,427	-1.2%	12.5%
Townsend	2,761	3,092	3,240	12.0%	4.8%	2,894	3,182	3,385	9.95%	6.4%
Tyngsborough	2,823	3,741	3,850	32.5%	2.9%	3,033	3,806	4,109	25.5%	8.0%
Westford	5,316	6,836	7,498	28.6%	9.7%	5,530	6,941	7,876	25.5%	13.5%
Source: U.S. Census.										

Table 3.8: Groton Residential Building Permits, 2001-2009

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Single Family	33	58	30	19	19	14	19	12	21
Two Family	2	6	2	4	4	6	0	0	4
Multi-Family	10	25	25	10	53	0	0	0	0
Demolitions	9	9	13	13	14	12	6	2	4
Total	45	89	57	33	76	20	19	12	25
Source: U-Mass Donohue Institute, State Data Center; Town of Groton									

COMMERCIAL AND INDUSTRIAL GROWTH

Groton's commercial and industrial presence has always been small, and this remains true today. For the past half-decade, most new commercial and industrial development occurred along the Route 119 corridor. There are also some older manufacturing/industrial uses at the edges of town. Since 1999, there have been five new commercial properties developed in town, including 100 Boston Road, the Groton Exchange convenience store and gas station on Main Street (redevelopment of a former gas station), Mill Run Plaza, Gibbet Hill Grill, and parcel assembly for the Boston Road Marketplace development at the intersection of Boston and Sandy Pond Roads.⁵ Despite this activity, Groton has weak prospects for increased commercial and industrial growth due to factors such as regional competition and a lack of

⁵ Town of Groton, Assessor's Database, 2009; Town of Groton, GIS Database, Parcel Map, and Groton Planning Department.

zoned land for business purposes. Looking to the future, the primary driver of growth in Groton will continue to be residential development.

Infrastructure

In all places, infrastructure has a tremendous influence on growth and development patterns and potential. Roadways, water service and private wells, and public sewerage and private septic systems (sometimes referred to as “grey infrastructure”), are key factors in determining the location and intensity of development. It is important to understand the development impact that current infrastructure patterns and future plans and decisions may have on Groton’s “green infrastructure” or open space system.

TRANSPORTATION

As in many communities, transportation infrastructure has been a key predictor of Groton’s development pattern. Initially, development followed the courses of the Squannacook and Nashua Rivers which functioned as the town’s first transportation routes. Later, the arrival of rail lines that ran to Fitchburg, Worcester and Nashua, New Hampshire spurred additional business activity and development in Groton. One of the most prominent development areas was Groton Junction which eventually broke off from Groton and incorporated as the Town of Ayer in 1871. The Peterborough and Shirley branch of the Fitchburg line, located along the Squannacook River in West Groton, encouraged industrial development in that part of town.

After the heyday of the railroad, roads, highways, and bridges became the prime transportation infrastructure and remain so to this day. Though a local and state roadway system developed during the first half of the twentieth century, it was the construction of the interstate highway system (authorized in 1956 and built out over the next decade) that changed the face of so many communities in the US, including Groton. The presence of an efficient, fast, and free highway network - in particular Route 495, which grazes the southeastern corner of Groton - made the town much more accessible, and triggered a wave of primarily residential development that remained strong for over four decades and only now shows signs of cooling down. It was not only the presence of Route 495 but also the relocation of employment centers to suburban locations along the highway that fueled the movement of people to the outer suburbs.

Though most of Groton’s transportation infrastructure is auto-oriented, the town has some important bicycle and trail routes, including:

The Nashua River Rail Trail (NRRT), which extends approximately eleven miles between Ayer and Nashua, New Hampshire, running north-south through Groton. Dedicated in October 2002, it has an equestrian path that extends from Station Avenue in Groton to the north. It also connects to Ayer’s MBTA Commuter Rail Station, about a three- to four-mile or fifteen- to twenty-minute bike ride. User counts taken in 2007 and 2008 at Station Avenue indicate that more than one thousand people take advantage of the NRRT on a typical summer Saturday. To date, the NRRT has had a positive impact on neighborhood businesses and attracted more people to Groton Center. The Town needs to be careful to balance increased demands for parking with other open space and land use priorities in the area.

The Squannacook River Rail Trail (SRRT) is still in the planning/design phase. A 501(c)3 nonprofit, Squannacook Greenways, has been formed to develop the SRRT in conjunction with the Massachusetts Department of Conservation and Recreation which will enter into a lease agreement with the MBTA to create a trail along the abandoned Greenville branch of the Boston & Maine railroad. The trail will connect the northwest corner of Groton to Townsend, serving a combination of recreational and transportation needs. Approximately 0.9 miles of the SRRT is located in Groton and 2.8 miles is located in Townsend to the northwest of Groton. The proposed multi-use path parallels Route 119 from Elm Street eastward from Townsend, connecting to Groton along the Squannacook River and Bertozzi and Squannacook River Wildlife Management Areas.

Other trails in Groton's extensive trails network are primarily for recreation uses but could become a viable transportation mode/source if connected to form trails system with destinations throughout town. Currently, there are town trails on conservation lands owned by the Conservation Commission and Groton Conservation Trust, the Town Forest, and privately owned parcels. Some additional trails on private land are protected through easements. The Groton Trails Committee is responsible for managing trails and has carried out many projects to clear, establish, mark, and map trails in the town.

PUBLIC OR PRIVATE WATER SUPPLY SYSTEMS

The provision of public water has been a moderate influence on growth and development in Groton. The town has two water supply entities: the Groton Water Department and the West Groton Water Supply District. The Groton Water Department (GWD) is a Town department that is overseen by the Groton Water Commission, a three-member elected board.⁶ As of 2011, the GWD serviced 1,829 water connections—about forty-six percent of all Groton housing units—through a total of fifty-one miles of water distribution mains located primarily in the eastern and central parts of town, including Lost Lake and Groton Center.⁷ The water system has four of the Town's six groundwater wells: Baddacook Well, Whitney Wells 1 and 2, and the Shattuck Well, which serves as a back-up well and is currently not in use. In 2009, these wells supplied just over 134 million gallons of water, which is below the GWD's permitted withdrawal amount of 199 million of gallons per year.⁸

The West Groton Water Supply District serves the area along Townsend Road, West Main Street, Kemp Street, Hill Road, and other smaller streets in that vicinity. It provides water to 521 service connections—about thirteen percent of the town's housing units—through approximately nineteen miles of water distribution mains. The system has two water supply sources: the Townsend Road Wellfield and the Town Forest Well. The WGWS's pumping rate in 2009 was just over 57 million gallons of water, which was also below the permitted withdrawal amount of 98.55 million gallons of water per year.⁹

⁶ Town of Groton, Directory, Groton Water Commission, <http://www.townofgroton.org/main?cmd=get-townbody&id=20>.

⁷ Town of Groton, *Groton Annual Town Report, 2009*, 2009.

⁸ Source: Massachusetts Department of Environmental Protection, "WMA Permit #9P-2-13-115.01 – Groton Water Department," July 19, 2009

⁹ Source: Massachusetts Department of Environmental Protection, "Water Withdrawal Permit No. 9P2-2-11-115.01 - West Groton Water Supply District," May 16, 2009.

Both water supply systems have instituted effective water conservation measures. These include an increasing block rate structure, mandatory water restrictions, and public education.

Although not a Town of Groton facility, there is a third well serving the Groton Dunstable Regional High School in the northern section of town. This well taps the Reedy Meadow Aquifer. The Town of Groton is currently investigating the possibility of another municipal well in the Unkety Brook area. Aquifers are discussed in detail in Section 4, Environmental Inventory and Analysis.

It should be noted that pollution from two local businesses necessitated the Town to supply water to the affected areas. Tetrachloroethylene (TCE) contamination from Groton Machine and Screw was a major factor in the decision to run water lines to the Gilson Road area. More serious chemical releases from Conductorlab were the main reason that water service was extended to the Mill Street and Gratuity Road area. Licensed Site Professionals (LSPs) provide quarterly monitoring reports to the Department of Environmental Protection (DEP) and the Groton Conductorlab Oversight Committee. The DEP designated the site as a Public Involvement Plan Site, and the Board of Selectmen appointed the Committee in 1986. The Committee meets with representatives of Honeywell International, the current owner of the facility, and the LSP to review on site remediation at least twice a year.

SEWERAGE AND PRIVATE SEPTIC SYSTEMS

Until fairly recently, Groton relied exclusively on private septic systems for all wastewater needs. Then, in the late 1980's the Town tied in to the Pepperell Wastewater Treatment Plant to relieve sewage disposal problems in the Town Center. This tie-in sewer was extended twice in the 1990's. Today, the Groton Sewer District is a small municipal sewer system servicing 584 buildings in Groton Center. Under a 1987 agreement, Groton purchases capacity at the Pepperell Wastewater Treatment Plant for disposal of sewage produced in the Groton Sewer District. In addition, Groton contracts with Pepperell to provide operations and maintenance support for the system's two pump stations, force main, manholes, laterals, and interceptors.¹⁰

While this small sewer district meets the needs of the Town Center, other areas of Groton have growing sewerage needs that cannot be met by private septic systems alone. Two areas that most urgently need new sewerage solutions are Lost Lake and West Groton.

In 2002, Groton completed a twenty-year wastewater management plan that identifies Lost Lake/Knops Pond as a priority area for intervention due to the prevalence of small lots with individual septic systems. A second phase of this plan, focusing on solutions to wastewater issues in the Lost Lake Area, was completed in the Spring of 2012. In 2005, the Board of Selectmen and Sewer Commissioners issued a report that recommends a comprehensive watershed management program for this area. To guide the program, Groton established the Lost Lake Sewer Committee in 2008 and commissioned a feasibility study shortly thereafter. The study revealed high nutrient concentrations, including phosphorus and fecal coliform, in the Lost Lake/Knops Pond watershed. The 2010 Fall Town Meeting approved funds to apply for two grants that could pay for the project: a grant from the Massachusetts Water Pollution Abatement

¹⁰ Town of Groton, *Annual Town Report 2009*, 33.

Trust (a component of the State Revolving Loan Fund), and a U.S. Department of Agriculture (USDA) Rural Development Grant. Although Groton's initial request for the USDA grant was denied, the Town has now qualified for USDA funding. The project is currently in the process of filing an Environmental Notification Form for the sewer collection system as well as an Interbasin Transfer for treatment of the wastewater in Ayer. A dam mitigation plan is also being developed in order to maintain down stream flows during the summer months for fish habitat. It is expected that the Phase 2 and Phase 3 reports will be filed by the end of June 2012 by the Town's consultant. Engineering and construction funding will be requested at the Fall 2012 Town Meeting, and ground breaking is expected to take place in the Spring or Fall of 2013.

At the same time that Groton established the Lost Lake Sewer Committee, it also created the West Groton Sewer Committee. Previous studies show that West Groton should also be considered for municipal sewer service. While the area's septic systems do not pose the same critical environmental concern as those located in Lost Lakes, lack of public sewer greatly reduces West Groton's economic potential. The West Groton Sewer Committee was disbanded in June 2011 due to lack of political support. Groton has decided to pursue funding only for the Lost Lake area, where the public sewer needs are more compelling.

Wastewater treatment decisions play a significant role in determining development potential. As Groton introduces municipal sewer service into new areas of town, it must ensure that appropriate regulations are in place to guide development so future land use does not conflict with open space and recreation goals.

3) Long-term development patterns

Current land use continues to "spread out" into the countryside from the development centers of Groton Center, West Groton, and Lost Lake. This is a result of the increase in residential subdivision construction that the town has experienced since the 1980's. As more new homes are built, Groton will start to take on a more typical suburban character. The town may become unaffordable for those who grew up here with the construction of more expensive housing stock to maximize profits on lots. The reality of an upper-class suburban bedroom community awaits this growing agricultural village if growth is not managed properly.

ZONING

As development continues, it will profoundly impact the availability of open space and the condition of the environment. As stated before, this will be very noticeable in a place that still has many of the characteristics of an agrarian rural community. There are sensitive zoning controls in place to help maintain Groton's natural environment by carefully guiding development. The following land use controls in town help accomplish this. (See Zoning Map.)

In Groton as in most modern municipalities, zoning regulations have the largest role in shaping growth. At the parcel level, a zoning bylaw or ordinance tells a prospective developer how much they can build on their land and in what form, and what they can do on it. When applied across an entire city or town, the zoning determines future land use and development patterns.

Groton's Zoning Bylaw (ZBL) provides the following base zoning districts (see also, Zoning Map):

The **Residential-Agricultural (R-A)** district is a very-low-density residential use district for single-family and two-family homes, both allowed by right, together with agricultural and forestry uses, which are permitted throughout the town. This is by far the largest district in Groton, accounting for over eighty-five percent of all zoned land.

Under conventional dimensional requirements, the R-A district is destructive to open space because it creates very large lots. The minimum lot size is eighty thousand square feet (two-acre zoning, in builder's acres), and the minimum frontage is 225 feet. These provide for an extremely low-density development. When applied over much of the town (as the current zoning map requires), this type of development pattern carves up open space and interferes with ecological functions, such as riparian and wildlife corridors.

In Groton, however, there are a few special development options to use R-A land more efficiently and preserve more open space. They are:

- **Flexible Development** applies to parcels or contiguous parcels in the R-A district—there is no minimum land area requirement to qualify for approval. The bylaw provides for divergence from R-A dimensional rules and standard subdivision requirements in the following two ways:
 - Allowing alternative site planning and design through a five-step variation on the four-step process typically found in Open Space-Residential Development (OSRD) bylaws. Groton's process requires an inventory of existing site features; consideration of larger site context; designation of contiguous open space for preservation; designation of development areas; and delineation of lot lines. At least thirty-five percent of the site must be set aside for open space (not including wetlands) that serves conservation, historic preservation, outdoor education, recreation, and similarly beneficial and low-impact public purposes.
 - Encouraging applicants to modify the lot size and shape and other dimensional requirements to attain the objectives of the bylaw.

A Flexible Development may include single-family, two-family, and multi-family dwellings with up to five units, but it does not allow an increase in the number of units that could have been built under conventional zoning. Applicants must submit a yield plan to prove what a conventional plan could support.

- **Major Residential Development (MRD)** applies to three types of development: the creation of six or more residential lots, the creation of more than two lots with driveway access onto a street existing at the time the lots were created, and more than one lot with construction less than two hundred feet from an existing street. Under any of these circumstances, applicants must apply to the Planning Board for a special permit and submit both conventional and alternative development plans. Depending on the number of lots involved, the alternative plan must include

either a shared driveway or hammerhead lot, a Residential Compound subdivision plan, or a Flexible Development plan. After reviewing the application, the Planning Board has authority to decide which plan best promotes a range of broad objectives, including preservation of recreational facilities and natural resources.¹¹

The **Residence Business (R-B)** district is a very small, low-density residential district that contains six properties with a combined total of about five acres of land (less than one percent of all zoned land), all located along Main Street and School Street in Groton Center. The R-B district has very similar use regulations to the R-A district, but it also provides for additional business uses. The district's minimum lot area (40,000 square feet) and frontage regulations (175 feet) apply to residential but not business uses, which makes sense because most of the nonresidential properties do not meet current requirements.

The **Business (B-1)** district provides for a range of business uses. It is located in pockets mainly along Route 119, including Groton Center, the B-1 district accounts for only one percent of Groton's zoned land. It has the same dimensional requirements as the R-B district, but neither the lot area nor frontage requirement applies to business uses. The main difference between the two zones is that the R-B district is primarily intended for residential development and the B-1 district, primarily for commercial development.

The **Manufacturing (M-1)** district provides for industrial manufacturing uses. Like the R-B and B-1 districts, the M-1 district is small—only 147 acres and also less than one percent of the town's zoned land. The dimensional standards for this district are the same as those for the R-B and B-1 districts.

The **Conservancy (C)** district exists to protect critical natural resources such as groundwater, floodplains, wetlands, wildlife, and open space. Like many Massachusetts towns, Groton established the C district before the legislature passed the Wetlands Protection Act, G.L. c. 131, § 40. Because the provisions of the Wetlands Act are similar to those of the C district, this zone is essentially obsolete.

The **Official Open Space District (O)** applies to open space dedicated or used for public or semipublic purposes. Some of the land in this district is also protected by deed or conservation restrictions. Previously the O district included both open space and municipal facilities, but in 2001, Town Meeting created the Public Use (P) district and rezoned all of the municipal facilities, thus making activity in the O district more consistent with its stated purposes.

The **Public Use (P)** district provides for a variety of public facilities. As noted above, this district includes land formally located in the O district. Municipal buildings and facilities, public utilities, cemeteries, and outdoor storage of fuel products are allowed by right, while community clubs, hospitals, subsidized elderly housing, windmills, meteorological towers, large-scale wind energy conversion devices, and parking facilities may be allowed by special permit.

¹¹ Note: Groton's MRD bylaw is identical to a Westwood bylaw that was invalidated by the Appeals Court in *Wall Street Development Corporation vs. Planning Board of Westwood*.

The **Open Space-Agricultural (OS-A)** district was created in 2003, but it never served its intended purpose and the Town never placed any land in it as a result of objections from the Department of Revenue and Board of Assessors. Like the C district, it is obsolete. The Town may want to consider deleting it from the ZBL.

In addition to base zoning districts, Groton has the following overlay districts:

Floodplain Overlay District (FOD). The boundaries of the Floodplain Overlay District are based on Groton's Flood Insurance Rate Maps (FIRM) and the Flood Boundary and Floodway Maps, which the federal government recently updated and revised. The district prohibits new construction within the one hundred-year floodplain.

Water Resource Protection Overlay District (WRPOD).¹² Groton's Water Resource Protection Overlay District consists of three sub-districts (WPD I, WPD II, and WPD III). WPD I applies to land surrounding a well or wellfield, defined as the protective radius ("Zone I") required by the Massachusetts Department of Environmental Protection (DEP) as a condition of permitting a public drinking water supply. The boundaries of WPD II correspond to two areas regulated by DEP: a well or wellfield's "Zone II," or the areas from which an operating well draws water under stress pumping conditions, and the Interim Wellhead Protection Area for wells that do not have a designated Zone II. The third sub-district, WPD III, includes the watershed of each DEP Zone II. Each of these districts has special regulations designed to protect public water supplies.

Recreational Overlay District (ROD). This small overlay district applies only to the Town-owned Groton Pool and Golf Center (formerly the Groton Country Club) on Lover's Lane. Town Meeting established the district in order to create regulations that would allow the land to be used as a multi-purpose recreation area with related facilities such as a restaurant or store.¹³

Town Center Overlay District. This district began as the Station Avenue Overlay District in 2007 and was based on planning for the reuse of the Station Avenue area in Groton Center. At the 2011 Town Meeting, the district was extended to a site at 134 Main Street, and the name changed to the Town Center Overlay District (TCOD). The district provides for civic, residential, and commercial uses (or a mix thereof) by special permit in addition to uses permitted in the underlying R-A, R-B, B-1, and P districts. Uses specific to the TCOD include:

- Small-scale retail store or service establishments.
- Business or professional offices.
- Restaurant or other place for serving food, but not including drive-through service windows.

¹² The Zoning Bylaw occasionally refers to the WRPOD as the Primary and Secondary Water Resource Protection Districts. The version discussed in this chapter reflects amendments through April 28, 2008.

¹³ Michelle Collette (Town Planner, Town of Groton, MA), interview by Community Opportunities Group, Inc., November 24, 2010.

- Mixed-use development consisting of two or more of the above-listed uses.
- Mixed-use/residential development consisting of one or more of the above-listed uses together with duplex dwellings and/or multifamily dwellings.

BUILD OUT

Groton has a large amount of protected open space, but the town also has a large amount of undeveloped, unprotected land—particularly undeveloped residential land—that falls under R-A zoning. Given market trends and current zoning, without some type of protection this land will most likely be developed in accordance with the zoning for low-density residential use.

Table 3.9 provides an estimate of the number of single-family house lots that could be built on Groton's vacant residential land and also residential land—land in existing single-family parcels with acreage in excess of what is required for a conforming lot. The total estimated residential development potential is 1,956 homes, and the total estimated commercial development potential is 125,688 square feet. Some residential land could be developed as more compact Flexible Development or MRD projects, both of which require open space set-asides. Still, even this type of development would likely fragment existing open space and prevent the realization of an open space system that supports ecological process and enhances recreational opportunities.

Key, unprotected open space areas include the following.

- The central reach of the Nashua River from the Town Forest north to the J. Harry Rich State Forest.
- Portions of the Squannacook River from the Town Forest north through West Groton.
- Most of the James Brook, from the Ayer border north through Groton Center.
- Martin's Pond Brook from Martin's Pond to Lost Lake.
- Whitney Pond and Cow Pond Brook.
- Nod Brook and Unkety/Hawtree Brook.
- Reedy Meadow Brook.

Without intervention to protect key open space parcels and further develop the town's open space system, development under the Town's current zoning would compromise ecologically significant open space parcels.

Table 3.9: Estimated Residential and Commercial Development Potential: Groton

Land Area (Sq. Ft.)				
Use Class	Gross Area	Area with Limited or No Constraints	Net Developable Area	Development Potential (Lots or Sq. Ft.)
Residential Development				
Existing Lots > 5 acres	132,879,780	95,673,442	84,192,629	1,052
Vacant Land Parcels				
Developable > 2 acres	50,860,656	40,330,897	36,297,807	454
Partially Developable > 2 acres	11,347,380	5,673,690	5,106,321	64
Accessory > 5 acres	1,772,892	709,157	638,241	8
Chapter 61 > 2 acres	17,502,408	13,126,806	11,814,125	148
Chapter 61A > 2 acres	26,872,164	18,810,515	16,929,463	212
Chapter 61B > 2 acres	2,234,628	1,675,971	1,508,374	19
Total Residential Lots				1,956
Commercial				
Developable >2 acres	997,524	498,762	448,658	125,688
Source: Groton Assessor's Parcel Database, Applied Geographics, Inc., Assessor's GIS Parcel Map, MassGIS, and Community Opportunities Group, Inc.				
Notes:				
(1) "Gross Area" is the sum of the area in all parcels in each class of land, expressed in sq. ft.				
(2) "Area with Limited or No Constraints" includes land without steep slopes and that is relatively free of wetlands. It represents anywhere from 40 to 80 percent of "Gross Area," depending on the class of land and the location of the parcels included in each class.				
(3) Net Area is land assumed to be available for new house lots or construction of commercial space, net of land allocated to roads and odd lot configurations.				

4. ENVIRONMENTAL INVENTORY AND ANALYSIS

A. Geology, Soils, and Topography

1) Geology

The underlying structure of the earth's crust in Groton is the result of historical geologic events, which can be traced back nearly 600 million years. During the Paleozoic Era (beginning 600 million years ago and ending 230 million years ago) igneous and metamorphic rocks intruded from below the earth's surface, forming the basic lay of the area. The landscape was further transformed by glacial erosion and deposition during the Pleistocene age (beginning 1.8 to 1.6 million years ago and lasting until approximately 10,000 to 12,000 years before the present). This era is also known as the Ice Ages because many periods of glaciation occurred during this period. Continental glaciers covered the region, sometimes reaching heights of one mile. As the earth warmed these ice sheets melted and retreated, but with cooling temperatures, the ice sheets advanced as far south as Long Island, New York. During this time, the sharply accented hills and valleys of the pre-glacial landscape were modified by glacial abrasion and outwash deposits caused by the huge ice formations. These glaciers deposited alluvium and glacial till, leaving clays, sands, silts, and gravel over the bedrock as they receded northward. These processes determine the soil types found in Groton today.

Evidence of early geologic activity still exists in Groton and is found in the major landforms that make up the local terrain. The most unique feature is the rare occurrence of a large number or swarm of drumlins, smoothly shaped, elongated hills that run through the central portion of town. The drumlins generally show a south-southeast alignment. Ground moraines, low-lying, smooth undulating plains are best exemplified by The Throne and through the central region of Groton, from the Farmers Row area to north of the Town Center. Glacial outwash, such as kames (hummocky mounds of sands and gravels) are best found in the valleys of Knops, Whitney and Baddacook Ponds, while kame terraces (flat topped deposits) are best seen near the eastern swamps. The Nashua riverbed is the primary site where glacial lake bottom and edge deposits can be found, along with floodplain deposits. Remnants from the former Glacial Lake Nashua are visible in Groton in the glacial stream deposits that form the Reedy Meadow esker and in the pebble to boulder sized gravel found east of Chicopee Row.

2) Soils

The dominant soil group in the northwest corner of Groton (west of the Nashua River) is Charlton-Hollis-Rock Outcrop complex, with slopes ranging from three to twenty-five percent. Charlton-Hollis-Rock Outcrop complex consists of well drained Charlton soils, somewhat excessively drained Hollis soils and rock outcrops that occur in such intricate patterns on the landscape that it is not practical to separate them at the scale of mapping. Generally these areas consist of about fifty percent Charlton soils, fifteen percent Hollis soils, ten percent rock outcrop and twenty-five percent other soils. Major development limitations are related to rockiness and slope, and depth to bedrock in the Hollis soil. Depth to the high water table is greater than 6 ft., and depth to bedrock is greater than 60 in. This soil series is in the "B" hydrologic group. Group B soils have a moderate infiltration rate. Charlton-Hollis-Rock Outcrop, at all slopes

exceeding 3 percent have moderate to severe limitations for septic system construction, and moderate to severe limitations for building site development.

In the very extreme northwest corner is a relatively large area of Carver loamy coarse sand which is particularly suitable for development of residential or light commercial uses, provided municipal sewer is available. The Carver series consists of nearly level to steep, deep, excessively drained soils on glacial outwash plains, terraces, and deltas. Carver soils have very friable or loose loamy coarse sand surface soil and subsoil over loose coarse and very coarse sand substratum, with very rapid permeability throughout. Major development limitations are related to droughtiness. Depth to high water is greater than 6 feet and depth to bedrock is greater than 60 inches. This soil series is in the "A" hydrologic group. Group A soils have a high infiltration rate. Carver soils have severe limitations for septic system construction due to poor filtration, but have only slight limitations for building site development.

The soils within the eastern third of town are primarily Quonset loamy sand with slopes ranging from 3-35 percent. Quonset series consists of nearly level to very steep, deep, excessively drained soils on glacial outwash plains, terraces, eskers, and kames. Quonset soils have a sandy loam or loamy sand surface soil and subsoil with moderately rapid or rapid permeability, over stratified very channery, shaley or slaty sands at 15-30 inches with very rapid permeability. Major limitations are related to slope and droughtiness. The depth to high water is greater than 6 feet and depth to bedrock is greater than 60 inches. This soil series is also in the "A" hydrologic group. These soils have a high infiltration rate, and are rated important for capability to sustain farming practices.

Quonset soils, however, have severe limitations for construction of septic systems, as little filtration can be provided. Quonset soils with a 0-3 percent slope have only slight limitations for building site development, but soils of this series with slopes greater than 3 percent have moderate to severe limitations for site development.

Based on the soils, a substantial portion of the eastern side of Groton would be suitable for residential and light commercial uses, provided on-site septic would not be required.

The northern central portion of town consists of relatively small units of a variety of soils series, including Hinckley loamy sand, Quonset loamy sand, and Bernardston silty loam. For this area, an assessment of development potential would need to occur on a parcel-by-parcel basis.

See Map 4: Soils and Geologic Features.

3) Topography

Groton has a varied terrain. The wet areas and outwash deposits in the east are separated from the flatter areas and floodplain deposits of the west by a distinct range of barrier hills rising through the center of town. This apparent "L-pattern" chain of hills cradles the forests, wetlands and waters of the eastern region, and consists of: Fletcher Hill (350 feet), Rocky Hill (422 feet), Snake Hill (452 feet), Smoke Hill (370 feet), the Indian Hills (highest point, 492 feet), Prospect Hill (490 feet), Brown Loaf (463 feet), Gibbet Hill (510 feet), The Chestnut Hills (highest point, 516 feet), and Baralock Hill (434 feet). The only other

prominent elevations in town are Shepley Hill (364 feet) and Clay Pit Hill (360 feet). Comparably, the general average elevation in the Town Center is 300 feet and the Town Common sits at is 330 feet.

The areas of and around this hilly topography constitute a large portion of land that is considered unsuitable for development due to moderate (15-25 percent) and steep (>25 percent) slopes. There are numerous wetlands interspersed in the eastern region of town, including the Carmichael Swamp, that limit development east of the drumlin hills. Reedy Meadow in north central Groton, parts of Groton Center, and areas along the Nashua and Squannacook Rivers, make up most of the remaining undeveloped land that is too low and wet to be built upon.

The most level open land with development potential is located west of Route 111, although to date, the eastern region has seen most of the residential construction due to its more favorable soil conditions. For the most part, this area's topography is moderate, except near the relatively flat Nashua River bed, where areas may be flood prone and wet, which may prohibit building.

B. Landscape Character

The beauty of Groton can be succinctly captured in the views from some of its most prominent points: a historic downtown with winding roads radiating out to rural expanses of pastoral farmlands and lush forests. In this way, Groton has maintained the character and feel of the quintessential New England village. The fact that a great deal of the town remains in its natural state, undeveloped due to laudable local conservation efforts, natural constraints limiting land use, and landowners choosing to keep lands in



agricultural uses contributes to the town's idyllic New England landscape.

Also contributing to the community's character are the many large expanses of protected open space and woodlands owned by public and private entities. The New England Forestry Foundation manages over 1,111 acres of forested land, including the 717-acre Wharton Plantation that is managed for forest and agricultural products, as well as for wildlife and recreation. The Groton Conservation Trust owns or manages over 1,400 acres of land for recreation and conservation. Other major conservation and recreation lands include the 506-acre J. Harry Rich State Forest, managed by the Massachusetts Division of Forests and Parks, and the Massachusetts Audubon Society's 437-acre Rocky Hill Wildlife Sanctuary, an addition to Groton's inventory since the 2005 *Open Space and Recreation Plan*. The Town of Groton

oversees more than 3,200 acres of land for the purposes of recreation, conservation, and protection of its public water supply, including the 505-acre Town Forest.

Farmlands help to maintain the small town, rural character in Groton, especially in the Farmers Row Historic District. This area has many picturesque farm houses and barns, with scenic views to the west of the Wachusett Hills, along with rolling farmland and orchards. The Historic District Commission reviews new development and renovation proposals to preserve the area's historical integrity.

Groton's most unique natural feature is the drumlin hills that run through its central region and separate the town into two distinct topographical areas: a hilly eastern region and a flatter western region. The large grouping of these particular landforms is a relatively rare occurrence and is referred to as a swarm. Elevations of these hills range from a low of 350 feet (Fletcher Hill) to a high of 516 feet (Chestnut Hills) and allow many vantage points from which to view a mosaic of farm lands and woods.

Other noteworthy features are the waters, such as the Nashua and Squannacook Rivers, which punctuate Groton's landscape, providing both aesthetic enjoyment and recreational opportunities. Both rivers are substantial waterways that cut swaths through the town. Additionally, James Brook is a noteworthy feature, flowing along scenic Old Ayer Road. According to *A Plantation Called Petapawag* by Virginia May and published by the Groton Historical Society:

"Originally the source of James Brook was Martins Pond, and both the brook and the pond were much larger than they are today. The brook flowed out of Martins Pond through Hog Swamp into Half Moon Meadow and continued on the same course as now. At some time the waters of Martins Pond were diverted from James Brook and directed into Brown Loaf Brook, later called Martins Pond Brook, which flows east into Cow Pond Meadows, now flooded and part of Knops Pond, and finally they reach the Merrimack River. Apparently a channel was dug for the new outlet of Martins Pond, then widened and deepened, so that the water in Martins Pond became lower and lesser than formerly."

In the same book it is noted that a storm in 1751 created an island in the Nashua River, causing the current oxbow in the Nashua River now known as the Dead River. The area of the Nashua River between the Route 119 bridge and the East Pepperell Dam is known as the Moat or Pepperell Pond. The series of islands and lagoons within the ponded section of the River provide an interesting attraction for both canoeists and fishermen to explore.

See Map 5: Unique Features.

C. Water Resources

1) Watersheds

Groton is in the Nashua and Merrimack watersheds. The Merrimack watershed includes Lost Lake/Knops Pond, Baddacook Pond, Whitney or Cow Pond, Martins Pond Brook, and Cow Pond Brook in eastern Groton. It is also home to the Groton Water Department's (GWD) four public wells. The

Nashua Watershed encompasses both the Nashua and Squannacook Rivers as well as the Reedy Meadow area and Unkety, Nod, and James Brooks.

One of the most successful and well-known watershed-based protection efforts is led by the Nashua River Watershed Association (NRWA), established in 1969 by long-time Groton resident Marion Stoddart. With a focus on curbing pollution and sustaining the natural resources of the watershed along the riverway, the NRWA has been instrumental in restoring the Nashua River and protecting more than 8,000 acres of land within the watershed and eighty-five miles of greenway along the river.¹⁴ The NRWA also monitors water quality in the Nashua River at thirty-six points, including two in Groton.

2) Surface water

Groton has 1,328 acres of open water, which include a large lake, many smaller ponds, two rivers, and a number of smaller ponds and brooks. Many of the more substantial water bodies and waterways are valued for their aesthetic and recreational value, and support a number of activities such as swimming, boating, and fishing. These and other lesser waters also are home to a variety of wildlife habitats, including fish, amphibian species, birds and small mammals. (See Map 6: Water Resources)

LAKES AND PONDS

Groton has or shares several Great Ponds, totaling 417 acres of surface water.¹⁵ The largest of these is Lost Lake (the town's only lake), whose 205 acres include adjoining Knops Pond. Two more of the Great Ponds are located near the Lake: Whitney or Cow Pond (37 acres) and Duck Pond (21 acres).¹⁶ The other Great Ponds located entirely within Groton: Baddacook Pond (80 acres) and Martins Pond (22 acres) are located east of Town Center. Groton shares 42 acres of pond area with neighboring communities, including Massapoag Pond (111 acres total shared with Dunstable and Tyngsborough) and Long Pond (46 acres total shared with Ayer). There are also an additional 37 acres of natural and artificial ponds located throughout town that are much smaller, ranging in size from less than one acre to approximately 10 acres.

According to the Commonwealth's 2010 Proposed Integrated List of Waters, there are several bodies of water in Groton that merit concern. Lost Lake/Knops Pond is listed as a Category 4 water body due to impairment not caused by a pollutant but by metals and exotic species. Groton has two Category 5 water bodies, which merit the most concern.¹⁷ They are:

¹⁴ Nashua River Watershed Association, "The Past and the Future," www.nashuariverwatershed.org/index.html.

¹⁵ Great Ponds are defined as standing bodies of water having an acreage in excess of ten (10) acres in their natural state.

¹⁶ Duck Pond is not listed by the Commonwealth as a Great Pond.

¹⁷ The federal Clean Water Act (CWA) requires states to evaluate the quality of all surface water bodies for their ability to support a range of uses, including aquatic life support, fish and shellfish consumption, and drinking water supply. These are reported in an annual Integrated List of Waters. The state assigns a category to each water body according to its water quality. Category 5 water bodies are those that are "impaired or threatened for one or more uses" and are part of another CWA-required list known as the 303(d) list, which is reported to the federal government. These water bodies require a Total Maximum Daily Load (TMDL) be assigned to the offending pollutant, which functions as a "budget" for how much of that pollutant may be discharged into the water body. Category 5 waters are closely monitored to ensure TMDLs are not exceeded. Massachusetts Executive Office of Energy and Environmental Affairs, Department of Environmental Protection, Division of Watershed Management – Watershed Planning

- Martins Pond Brook for siltation, organic enrichment, and turbidity; and
- Massapoag Pond for metals, organic enrichment, noxious aquatic plants, and exotic species. Groton shares Massapoag Pond with Dunstable and Tyngsborough.

For recreational purposes, public access is provided via protected open space to all Great Ponds located entirely in Groton except Martins Pond. There is limited or no public access to Long and Massapoag Ponds, the water bodies that the town shares with other communities. Other smaller water bodies, such as Cady, Flat, and Wattles Ponds are accessible via protected public lands.

RIVERS AND BROOKS

The principal watercourse in Groton is the Nashua River, formed by two branches: the North Nashua River originating in West Fitchburg and a southern branch flowing out of the Wachusett Reservoir. The Nashua River flows 36 miles from the south northward to the Merrimack River in Nashua, New Hampshire, and separates the town's central and western regions. During its winding course through Groton, the width of the Nashua varies greatly from 100 feet near the Ayer border to nearly 2,000 feet by Hickory Point, just south of the Pepperell town line.

In the state's 2010 Proposed Integrated List of Waters, prepared by the Massachusetts Department of Environmental Protection (DEP), the segment of the Nashua River running through Groton has been designated a Category 5 or "impaired" waterway due to the presence of pathogens and phosphorus.¹⁸ One effect of these pollutants, high algae growth, can be seen at Pepperell Pond during the summer. Such conditions have encouraged the growth of invasive water chestnuts, which have a significant impact on recreational use of the Nashua River near Groton.¹⁹

According to the NRWA, urban and agricultural runoff are the main source of pollution in the Nashua River in the Groton Area. Non-local sources of contamination include point-source pollution from upstream wastewater treatment facilities, leaks from aging sewer pipes in the Fitchburg Area, and more

Program, *Massachusetts Year 2010 Integrated List of Waters: Proposed Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act*, April 2010.

¹⁸ The federal Clean Water Act (CWA) requires states to evaluate the quality of all surface water bodies for their ability to support a range of uses, including aquatic life support, fish and shellfish consumption, and drinking water supply. These are reported in an annual Integrated List of Waters. The state assigns a category to each water body according to its water quality. Category 5 water bodies are those that are "impaired or threatened for one or more uses" and are part of another CWA-required list known as the 303(d) list, which is reported to the federal government. These water bodies require a Total Maximum Daily Load (TMDL) be assigned to the offending pollutant, which functions as a "budget" for how much of that pollutant may be discharged into the water body. Category 5 waters are closely monitored to ensure TMDLs are not exceeded. Massachusetts Executive Office of Energy and Environmental Affairs, Department of Environmental Protection, Division of Watershed Management – Watershed Planning Program, *Massachusetts Year 2010 Integrated List of Waters: Proposed Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act*, April 2010. Kathryn Nelson (Water Monitoring Coordinator, Nashua River Watershed Association), email message to Community Opportunities Group, Inc., June 1, 2010.

¹⁹ Kathryn Nelson (Water Monitoring Coordinator, Nashua River Watershed Association), email message to Community Opportunities Group, Inc., June 1, 2010.

intense non-point source urban runoff. The NRWA recommends stringent yet realistic upgrades to wastewater systems in Fitchburg to address these non-local pollutant sources.²⁰

Another substantial waterway is the Squannacook River which flows from its headwaters in Ashby southeast to the Ayer State Game Farm where it joins the Nashua River. During its 14-mile course, it forms the western border of Groton with Shirley and varies in width from only a few feet where it starts to nearly 200 feet adjacent to the West Groton Well Field. Like the Nashua River, the segment of the Squannacook that runs through Groton below the Hollingsworth & Vose dam is classified as Category 5 waterway. The Squannacook's issues include a low pH (indicating acidic water) and E. coli, among other concerns.²¹

The upper part of the Squannacook River, from its source to Hollingsworth and Vose in Groton, is protected as part of the Squannacook and Nissitissit Rivers Sanctuary Act (MGL, Ch. 132A:17). This prohibits the discharge of any sewerage and limits the discharge of any storm water runoff into the rivers and their tributaries (including Flat Pond and Flat Bond Brook in Groton). The State Attorney General has authority to take necessary actions to enforce the provisions of this Act. The Squannacook River and Flat Pond have also been designated as Outstanding Resource Waters by the Commonwealth of Massachusetts, requiring higher standards for stormwater runoff and water quality.

Beyond these two rivers, there are more than ten formally named brooks that wind their way through Groton and help feed other bodies of water. These smaller brooks include: the Baddacook, Cow Pond, Flat Pond, Gay, James, Martins Pond, Nod, Reedy Meadow, Tuity, Unkety, and Wrangling Brooks. Only Flat Pond Brook feeds the Squannacook River, while the James, Wrangling, Tuity, Nod, and Reedy Meadow Brooks supply the Nashua River. Other brooks feed each other or water bodies located nearby.

These water courses have been designated as low flow waters by the state Division of Water Pollution Control, which means that they are unable to accept and process pollutant discharges. Most of these brooks are insubstantial resources for major recreational activities; however they tend to be used for more passive recreation such as fishing and nature or wildlife observation. More importantly, the town's small brooks and streams serve as plant, fish, and wildlife habitats.

Most major waterways in Groton are accessible to the public for recreation purposes via protected open space owned by the State, Town, or private conservation groups. The Nashua River shore is open to public access from the Petapawag Boat Launch on Nod Road, the Town Forest, and from the Farmers and Mechanics Conservation Area. The Squannacook River is accessible in both northwest and southwest Groton from State wildlife conservation and management areas.

3) Aquifer recharge areas

Aquifers are primary sources for groundwater and are typically located near surface water bodies. In Groton, there are three major aquifer systems: a glacial-lake aquifer along the Squannacook River; a

²⁰ Kathryn Nelson (Nashua River Watershed Association), June 1, 2010.

²¹ Massachusetts Department of Environmental Protection, *Massachusetts Year 2010 Integrated List of Waters*, 2010.

glacial-lake aquifer from Reedy Meadow to the Nashua River in Pepperell; and a glacial-stream aquifer beginning at Springy and Knops Ponds and extending along Cow Pond Brook to Massapoag Pond in Dunstable.

A Zone I area surrounds each of Groton's six public wells.²² The Groton Water Department's four wells are situated in three Zone II areas. This area is largely coterminous with the natural aquifers that supply the wells, and is defined as the recharge area required to replenish the well on the most strenuous days of pumping. The West Groton Water Supply District Wells are located in two Zone II areas in the western part of the town.

These wells and their supporting Zone II areas and aquifers constitute the only source for domestic water supply sources in Groton. Approximately 41 percent of the town's housing units have water service from the Groton Water Department and about 13 percent through the West Groton Water Supply District. The rest of Groton's households get water from on-site private wells.

4) Flood hazard areas

Most floodplains in Groton are related to local waterways, water bodies, and wetlands. In a 100-year flood hazard area the likelihood of a flood occurring in any particular year is one percent. These areas are classified as "Zone A" on the Flood Insurance Rate Maps (FIRM), which were last updated in Groton on June 4, 2010. This version of the FIRM maps also shows the 500-year floodplain (indicated as "Zone B").

Low-lying areas of Groton are subject to periodic flooding caused by the overflow of the Nashua and Squannacook Rivers, Martins Pond, and Baddacook, Whitney (Cow) Ponds, Unkety, Reedy Meadow, Wrangling Brook, and James Brooks, and Broadmeadow Road. The most severe flooding in recent years, especially on the Nashua and Squannacook Rivers, occurred in March 1936. The flood resulted from a combination of above-average snowfall, cold weather, and frozen ground followed by mild temperatures and repeated days of rain in the early spring. These conditions caused intensive runoff and massive flooding. Roads were washed out, bridges collapsed, and factories and homes were inundated. The peak flow during the March 1936 flood, as recorded by the USGS East Pepperell gauging station on the Nashua River, was 20,900 cubic feet per second. Structure damage also occurred in the Nashua River floodplain as a result of the floods of May 1850, December 1897, February 1900, March 1900, and March 1968.

More recently, the town experienced 25- to 50-year flood events in 1987, 2007 and 2010. In 2007, both the Nashua and Squannacook Rivers flooded, causing damage to Routes 119 and 225 and Broadmeadow Road. The March 2010 flood event closed bridges on Routes 119 and 225 and left several roadways in need of repair. However, the flood levels were not among the highest seen on the Groton segments of the Nashua and Squannacook Rivers.

These overflows have not caused Groton to erect any flood protection works on any of its rivers or brooks. However, the Town has sought to limit floodplain development by designating undeveloped

²² A Zone I area is a protective radius of 400 feet around public water system wells with approved yields of 100,000 or more gallons per day.

parts of the floodplain as conservation land. On the whole, there is very little development in the 100-year floodplain, except for two general areas of concern: Townsend Road at Park Drive in West Groton, where a few homes are located in the Squannacook River's 100-year floodplain; and areas around Baddacook Pond, Whitney (Cow) Pond, Knops Pond, and Lost Lake/Knops Pond in eastern Groton where homes and cottages are located along the shore in the 100-year floodplain. Although there is remaining developable land in these areas, they cannot be built upon as the Town's Zoning Bylaw's Floodplain District prohibits the erection of any building or structure.

5) Wetlands

Groton contains many wetland areas, so it is not surprising to find that its Native American name *Petapawag* means "swamps on a hill." These areas, where the water table intersects the surface of the ground for most of the year, cover approximately 2,689 acres (all types in Table 4.1 except for open water). Wetlands are a critical part of the surface water system because they provide buffers that protect the water quality of rivers, streams, and ponds. They also help to ameliorate the effects of flooding while filtering nutrients and sediment from stormwater runoff before it reaches open waters.

Wetland Type	Acres	Percent of Total
Bog	49.5	1.2%
Deep Marsh	255.7	6.4%
Open Water	1,328.3	33.1%
Shallow Marsh Meadow or Fen	314.4	7.8%
Shrub Swamp	493.0	12.3%
Wooded Swamp: Coniferous	18.6	0.5%
Wooded Swamp: Deciduous	1,268.6	31.6%
Wooded Swamp: Mixed Trees	289.3	7.2%
Total	4,017.3	100.0%
Source: MassGIS, "DEP Wetlands (1:12,000)," http://www.mass.gov/mgis/wetdep.htm .		

Groton's wetlands vary in size from 0.2 acres located near the Flat Pond Brook area to 145.5 acres of Reedy Meadow. The most substantial areas of wetland in Groton are Reedy Meadow, the Snake Hill Area at the Ayer town line, Burnt Meadow Swamp, and Carmichael Swamp. There are other moderately sized wet areas that link some of the larger swamp areas together and lesser areas in West Groton associated with the Nashua and Squannacook Rivers. Since all of the major wetland areas are located in east Groton, development in that region of town has been greatly limited.

Similar to the floodplain areas, there is minimal development that encroaches upon wetland. Not only have many of these wetland areas been protected as conservation land, but the Wetlands Protection Act (MGL, Ch. 131:40) has further limited development. The old rail line (the current Nashua River Rail Trail)

and a power transmission line do infringe on wetlands, but these were constructed before environmental regulations prohibited development in wetland areas.

See Map 6: Water Resources.

D. Vegetation

1) General inventory

Groton's vegetation follows the town's topographical and geological land patterns. The largest vegetated areas of town are found by the drumlins and swamps of the east, and beyond the Nashua River to the Squannacook River in the woodlands of the west. Wet area preserves with associated vegetation are also located along the beds and shores of smaller waterways and water bodies in Groton.

The variety of tree and plant life in Groton is typical of the Nashua River Watershed and the Appalachian Oak Forest, which runs from Tennessee northeastward into southern New England. There are a number of habitat categories in the Appalachian Oak Forest. The following types are found in Groton:

- **Upland Forest.** Oak-Hickory forest dominated by northern red oak (*Quercus rubra*) and shagbark hickory (*Carya ovata*) with small stands of hemlock and northern hardwoods in shady ravines and on moist, north facing slopes.
- **Forested Wetland.** Forest dominated by red maple (*Acer rubrum*) with a dense understory of speckled alder (*Alnus rugosa*), highbush blueberry (*Vaccinium corymbosum*), sweet pepperbush (*Clethra alnifolia*), and *Viburnum* species on river and stream beds with typically saturated soil conditions.
- **Scrub-shrub Wetland.** Woody growth up to seven feet tall, including willow (*Salix* spp.), buttonbush (*Cephalanthus occidentalis*), meadow sweet (*Spiraea latifolia*), hardhack (*Spiraea tomentosa*), and red-osier dogwood (*Cornus stolonifera*) growing in saturated soils or standing water.
- **Emergent Wetland.** Herbaceous and semi-woody plants, including cattail (*Typha* spp.), purple loosestrife (*Lythrum salicaria*), reed (*Phragmites communis*), blue-joint (*Calamagrostis canadensis*), and sedge (*Carix* spp.) growing in water up to eighteen inches deep.
- **Aquatic.** Plants, either bottom rooted or floating, including white water lily (*Nymphaea odorata*), bladderwort (*Utricularia vulgaris*) and duckweed (*Lemna* spp.).

Many of Groton's vegetated areas are very suitable for a variety of recreational pursuits. Areas such as the State and Town Forests and Wharton Plantation, with mature woodlands and high tree canopies, have mostly informal trails that are amenable to recreational activities such as hiking, fishing, nature observation, and sightseeing. More immature stands of trees with a variety of shrubs and low ground cover, located in several areas throughout Groton, are more suited for wildlife habitats.

2) Forest land

Groton has three significant, designated forests: the 505-acre Groton Town Forest in West Groton near the Shirley town line; the 700-acre Wharton Plantation in the northeast corner of Groton; and the 506-acre J. Harry Rich State Forest in the northern part of Groton along the Nashua River and Pepperell Pond. In West Groton, an area known as The Throne is one of the largest, most important contiguous undeveloped tracts in town. The Throne's hardwood and softwood forests, vernal pools, wild cranberry bogs, and wetlands increase its importance.

The state's BioMap2 project (described below) also identifies several significant forest areas as part of the "Forest Core," a sub-component of the BioMap's Core Habitat. These areas provide critical habitat for numerous woodland species. Several of these areas coincide with the town's official forests, including an area near The Throne in northwest Groton, a forest surrounding the Massachusetts Audubon Parcel at the Ayer Town line, and the Wharton Plantation.

3) Public shade trees

Groton's Tree Warden manages the Town's public shade trees along its 125 miles of road. For roadside trees, the Town plants salt-resistant, native species such as oak and sugar maple. Although disease is a concern, storm damage is the primary issue for street trees in Groton. Two recent storm events, an ice storm in 2009 and a November 2011 nor'easter caused significant damage, felling branches and whole trees. In the 2011 storm, also known as the "Halloween Storm," snow fell on trees that were still in leaf, adding extra weight that severely damaged hundreds of older street as well as dozens of trees planted in the last ten years. The Tree Warden's goal is to plant at least thirty trees each year; in the past few years these plantings have focused on replacing trees lost to storms.

Groton adopted a Scenic Roads bylaw in 1974 to protect the Town's public shade trees. The bylaw requires a public hearing by the Planning Board and Tree Warden before any trees (or stone walls) are removed from scenic roads, except in emergencies. All local roads are subject to the bylaw (in accordance with Massachusetts law, a community cannot designate state highways as scenic roads, so Routes 119, 225, 40, and 111 are exempt from Groton's scenic roads review process).

4) Agricultural land

Mass GIS's 2005 Land Use land coverage data identifies several classes of agricultural land in Groton. Of these, cropland and hayfields are the most prevalent in the central part of town (which coincides with much of the town's Prime Farmland according to soil classifications) and on Lowell Road, Farmers Row, and Old Ayer Road. Groton has several areas identified as orchards, including Autumn Hill Orchard on Chicopee Row and Fairview Orchards on Whitman Road, Old Ayer Road, and Peabody Street. Pasture and nursery lands are not as common as they once were, although significant pasture land is located on Gibbet Hill Farm (protected by a Conservation Restriction) near Groton's town center. Hillbrook Orchard on Old Ayer Road has pastured livestock as well as crops. The orchard is now defunct. Dairy and poultry farms have disappeared from Groton although town farmers continue to raise chickens for eggs and other livestock such as goats and sheep on a small scale. Privately-owned horses are pastured in backyards, and lessons and boarding are offered at three equestrian centers. A Community Supported

Agricultural (CSA) endeavor operates on land owned and leased by the New England Forestry Foundation on Peabody Street.

5) Wetland vegetation

Wetland plant species and plant communities are discussed in “General Inventory,” above.

6) Rare species

According to the Massachusetts Natural Heritage and Endangered Species Program, there are four species of vegetation that are considered endangered, threatened, or of special concern which are indigenous to Groton: the Roundleaf Shadbush (*Amelanchier sanguinea*) is listed as a species of special concern; the Low Bindweed (*Calystegia spithamea*) is listed as an endangered species; the Climbing Fern (*Lygodium palmatum*) is listed as a species of special concern; and the Small Bur-reed (*Sparganium angustifolium*) is listed as an endangered species.

7) Unique natural resources

Groton has a number of certified and potential vernal pools (See Section E2: Information on Vernal Pools). While they exist in many parts of the town, they are especially clustered in the northwest corner in an area known as “The Throne.” There are also many vernal pools in the northeast portion of town, coinciding with a concentration of wetlands in the same area. The state’s BioMap2 program (described below) has also identified several Vernal Pool Core Habitats in Groton, the largest of which are located close to The Throne in northwest Groton and near the Wharton Plantation area in the northeast corner of town.

8) Vegetation mapping projects

The Natural Heritage and Endangered Species Program (NHESP) BioMap2 project is a conservation plan to guide biodiversity conservation in Massachusetts for the next ten years. It focuses on land protection and stewardship for areas that are most critical to ensure the survival of rare, endangered, and other native species and their supporting habitats. In Groton, BioMap2 identifies Forest Core vegetation areas, which are areas of large, intact forests least affected by development that provide critical habitat for woodland species.

E. Fisheries and Wildlife

1) Inventory

Wildlife in Groton is typical of eastern and central Massachusetts, with different local natural areas supporting a diversity of wildlife and fish species. Virtually all of the common species living in this area of the State are permanent or occasional residents in local forests, marshes, and wetlands. The waters of Groton are home to many types of fish and aquatic life commonly found in area rivers, brooks, and ponds.

There are a number of species that make their homes in interior and riverside local forests and woodlands. These areas support mostly small rodents and mammals such as mice, voles, chipmunks, squirrels, muskrats, minks, weasels, woodchucks, beavers, raccoons, otters, opossums, fishers, and

porcupines. More secluded forests are home to larger wildlife such as coyotes, foxes, and deer. Residents also report seeing the occasional moose or bear. In addition, many types of birds also inhabit these woodlands including blue jays, robins, sparrows, orioles, owls, and woodpeckers.

Waterways, water bodies, and other wet areas in town provide suitable habitats for fish, amphibians, and birds that enjoy the water. The Nashua River and brooks support a fish population that includes bass, pike, perch, sunfish, and trout. The Squannacook River supports more of a cold water fish population, primarily through stocking with trout. Amphibious species such as frogs, snakes, and turtles tend to make their homes near local waters in wetlands, as do water-loving birds such as Great Blue Heron, geese, and ducks.

Several areas of Groton have been designated as important regional or statewide wildlife habitat by the University of Massachusetts, Amherst's Conservation Assessment and Prioritization System (CAPS) model. CAPS is a tool for assessing and prioritizing land for habitat and biodiversity conservation. The relative biodiversity value of the land within each habitat area is ranked using an Index of Ecological Integrity. While many of identified habitats in Groton are preserved areas of open space, there are several areas with high levels of ecological integrity that are not currently protected.

2) Information on vernal pools

Vernal pools are temporary bodies of fresh water that provide critical habitat for a variety of wildlife species, but most particularly amphibians and reptiles. Many vernal pools are filled in the spring and dry up during the summer, while others may persist throughout the winter. Vernal pools are found across the landscape in meadows, river floodplains, swales, wetlands, and places where small woodland depressions or kettle holes collect seasonally high groundwater or spring runoff for at least two months of the year.

Vernal pools serve as an important link between the aquatic and terrestrial environments, and are especially important because of the wide range of plant and animal species that depend on them for habitat (overwintering, shelter and food), breeding, and reproduction. Some of these species are totally dependent on vernal pools for their survival. Groups of vernal pools may constitute a habitat corridor, like those discussed below, providing a stretch of habitat along which sensitive species may travel.²³ If these corridors do not exist, plants and animals are isolated and more vulnerable to changes in the environment.

As of 2011, there were sixty-eight certified vernal pools in Groton included in the NHESP database. The town has 355 potential vernal pools. However, these data have not been updated since 2000, so it is likely that number has changed since then.

²³ "Certified - A Citizen's Step-by-step Guide to Protecting Vernal Pools," seventh edition winter 1997, Massachusetts Audubon Society, Lincoln, MA.

3) Corridors for wildlife migration

Wildlife needs continuous, uninterrupted stretches of undeveloped land for travel, migration, and other life processes. Simply preserving individual parcels of open space is not enough; communities need to assemble open space parcels into undeveloped corridors to ensure the continued health of its wildlife. Groton has several key wildlife corridors:

- The Nashua River corridor, whose beds and adjoining shorelands allow animals to move up or downstream by water or land.
- The Squannacook River corridor, which, like the Nashua, allows movement north to New Hampshire or south and west to Central Massachusetts.
- Reedy Meadow/Unkety Brook Valley, whose undeveloped woodlands and swamps provide adequate vegetative cover for wildlife to move from neighboring towns of the east. In particular, the Unkety Brook corridor facilitates the movement of wildlife through Groton to New Hampshire.

While each of these corridors has stretches of protected open space, there are critical gaps which could potentially fragment valuable wildlife habitat.

4) Rare species

According to the Massachusetts Natural Heritage and Endangered Species Program (NHESP), nineteen species of fish and wildlife that are indigenous to Groton are considered endangered, threatened, or of special concern. Of these, ten are vertebrates and nine are invertebrates.

The vertebrates are:

- The Blue Spotted Salamander (*Ambystoma laterale*) which is listed as a species of special concern;
- The Four-Toed Salamander (*Hemidactylium scutatum*) which is listed as a species of special concern;
- The American Bittern (*Botaurus lentiginosus*) which is listed as an endangered species;
- The Common Loon (*Gavia immer*) which is listed as a species of special concern;
- The Water Shrew (*Sorex palustris*), which is listed as a species of special concern;
- The Blanding's Turtle (*Emydoidea blandingii*) which is listed as a threatened species;
- The Eastern Box Turtle (*Terrapene carolina*) listed as of special concern;
- The Pied-Billed Grebe (*Podilymbus podiceps*) which is listed as an endangered species; and
- The Golden-Winged Warbler (*Vermivora chrysoptera*) which is listed as an endangered species.

In addition, the Bridle Shiner fish (*Notropis bifrenatis*), a species of special concern, is known to exist in Groton.

The invertebrates are:

- The Intricate Fairy Shrimp (*Eubranchipus intricatus*) which is listed as a species of special concern;
- The New England Bluet (*Enallagma laterale*) which is listed as a species of special concern;
- The Umber Shadowdragon (*Neurocordulia obsolete*) which is listed as a species of special concern;
- The Coastal Barrens Buckmoth (*Hemileuca maia maia*) which is listed as a species of special concern;
- The Brook Snaketail (*Ophiogomphus aspersus*) which is listed as a species of special concern;
- The Clemens' Hawkmoth (*Sphinx luscitiosa*) which is listed as a species of special concern;
- The Spatterdock Darner (*Aeshna mutata*), listed as a species of special concern;
- The Forcinate Emerald (*Somatochlora forcipata*) which is listed as a species of special concern; and
- The Zebra Clubtail (*Stylurus scudderi*) which is listed as a species of special concern.

F. Scenic Resources and Unique Environments

1) Scenic landscapes

A scenic landscape is defined by the Commonwealth as a large, contiguous area with significance on a statewide or regional basis. One criterion for this designation is the ability for the public to view and enjoy the area, therefore, public ways often form the boundaries of such a landscape.

In the early 1980s, the Massachusetts Department of Environmental Management (DEM), now the Department of Conservation and Recreation, prepared a scenic landscape inventory that included a large area throughout central and western Groton. This larger area is divided up into five smaller units of distinctive and noteworthy landscapes. The three distinctive landscapes are:

- An area beginning at Chestnut Hill, including Gibbet and Prospect Hills, extending to Indian Hill, and ending at Groton School.
- A corridor along the Nashua River beginning at the Pepperell Dam and ending at the Groton-Ayer border.
- A corridor along the Squannacook River beginning at Harbor Pond in Townsend and ending at the West Groton neighborhood.

The other two noteworthy landscapes which, according to DEM, aren't quite as scenic as the above three are:

- A corridor beginning at Lewis Hill, including Lawrence Academy and the Fairgrounds, and ending at the former Ayer State Game Farm.
- A corridor including the Nashua River eastern floodplain beginning in Pepperell and ending at Wrangling Brook. A map of these areas is in the Planning Board office.

Based on citizen input from public forums and the Conservation Commission, there were additional scenic properties, areas, and views that were identified beyond those included in the DEM inventory. The scenic properties include the Lawrence Homestead and the Sartell Schoolhouse. The scenic areas include Autumn Hills, Chicopee Row, Gibbet and Angus Hills, James Brook, the Squannacook River, the Nashua River, and the Soapstone Quarry. The scenic roads include Farmers Row and Old Ayer Road. Scenic views include those from the Bates Conservation Land, Farmers Row, Old Ayer Road, Town Forest Road, Broadmeadow Road, and Chicopee Row. The Town's official list of Scenic Roads includes all local (un-numbered) roads in Groton.

2) Major characteristic or unusual geologic features

Groton has some unique land features that add to its landscape character and enhance its scenic appeal. The most interesting geological feature is the swarm of drumlin hills in the central portion of town, extending from the Indian Hills north to the Chestnut Hills. The top of Chestnut Hills is the highest point in Groton at an elevation of 516 feet. In Groton Center, Gibbet Hill offers expansive views of a rolling agricultural landscape to the east of Route 119/Main Street and north of Route 40/Lowell Road. Orchards are prominent on the western flank of the Indian Hills on the east side of Old Ayer Road. The Nashua River provides the distinguishing feature of an oxbow known as the Dead River in the Town Forest, as well as a series of islands and lagoons between Route 119 and the East Pepperell Dam. Beyond these unique features of the terrain, Groton has three large expanses of protected woodlands at the Wharton Plantation, the J. Harry Rich State Forest, and the Town Forest.

3) Cultural, archaeological, and historic areas

In Groton, there are three local historic districts, six National Register of Historic Places properties, and four properties with Preservation Restrictions. The local historic districts were designated by the Town and have each been in existence for over thirty years.

The Main Street Historic District is located on Main Street between School Street and Old Ayer Road, and is actually comprised of two separate districts that abut at Court Street. The area is distinguished by a number of colonial-style buildings with elements of Greek Revival and Gothic architecture. Town Hall and three churches, dating from 1755, 1826, and 1842 with classic white clapboards, black shutters, and small window panes complement the district. It is overseen by the Historic Districts Commission which enforces the Town's Historic District Bylaw by reviewing the appropriateness of alterations and new construction.

The Farmers Row Historic District is located on Farmers Row between Pleasant Street and Groton School. Many old farms, colonial estates, and scenic areas with long views westward line this street in southern Groton. This district is also overseen by the Historic Districts Commission.

The six properties on the National Register of Historic Places are:

- The District 7 School at 366 Chicopee Row.
- The Governor George S. Boutwell House at 172 Main Street.
- The Groton High School (also known as the Prescott or Butler School) at 145 Main Street.
- The Groton Leatherboard Company building, now developed as Rivercourt Residences, at 6 and 8 W. Main Street.
- The Groton Inn at 130 Main Street (burned down on August 2, 2011).
- The Loseph Bennett-Arthur Shattuck House, at 653 Martins Pond Road. This property also has a Preservation Restriction.



The other properties with a Preservation Restriction are:

- The First Parish Church at 1 Powder House Road.
- The Williams Barn located on Chicopee Row.
- The residence next to the Town House Lot on Main Street, also known as the William Prescott House.

4) Unique environments

AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Groton established two Areas of Critical Environmental Concern (ACEC) in 2002. The Petapawag ACEC has 25,680 acres in Ayer, Dunstable, Groton, Pepperell, and Tyngsborough. The Squannassit ACEC has 37,420 acres in Ashby, Ayer, Groton, Harvard, Lancaster, Lunenburg, Pepperell, Shirley, and Townsend.²⁴ These areas were designated because they form a set of major, protected open spaces. The Squannacook River, Pearl Hill State Park, Willard Brook State Forest, and Townsend State Forest create a 5,000-acre protected core of land near the river's headwaters; the Division of Fish and Wildlife holds significant parcels at Townsend Harbor and downstream at the Squannacook Wildlife Management Area; the Hunting Hill area of Shirley and Lunenburg connects with the Squannacook corridor on the west; the Throne Hill area of Groton and Pepperell connects on the east; and the Groton Town Forest is located at the confluence of the Squannacook and Nashua Rivers. These large, protected open spaces along river

²⁴ Massachusetts Department of Conservation and Recreation, ACEC Program, <http://www.mass.gov/dcr/stewardship/acec/index.htm>.

corridors flank the Nashua River, with Sabine Woods and the Rich State Forest, and then follow along the Nissitissit River into New Hampshire, where it connects with Beaver Brook Association land in New Hampshire, and loops back to the Squannacook headwaters.

The Squannassit and Petapawag ACECs provide for diverse wildlife populations not only because of the quality of the habitat, but also because of the interconnections among these open spaces. This pattern of extensive open spaces connected by riparian corridors creates a larger, single entity from otherwise fragmented, isolated areas. The ACECs protect the integrity of both open spaces and corridors, which are essential to maintaining the biological diversity of the entire region.

G. Environmental Challenges

1) Hazardous waste sites

According to data maintained by the Massachusetts Department of Environmental Protection Bureau of Waste Site Cleanup, there are a number of properties in Groton that are confirmed hazardous waste sites or have experienced reportable releases of chemicals in the past ten years. A comprehensive list of the location of chemical releases and spills, as well as their current remediation status, is included in Appendix B.

As noted in Section 3, there is ongoing remediation for the Conductorlab site where circuit board manufacturing in the mid-1980s caused the release of a chlorinated volatile organic compound called Trichloroethylene (TCE). The property is now owned by Honeywell International, with whom the Conductorlab Oversight Committee (established in 1986 as part of the DEP's 21E Mass Contingency Plan process) still meets at least twice a year to discuss cleanup efforts.²⁵

2) Landfills

A former landfill exists off of Cow Pond Brook Road with other Town waste, maintenance, and recreational facilities. This area was closed for refuse dumping in 1990. The Town completed the landfill closing process in August 2002. An additional landfill, which has been covered but not sealed, is located off Nod Road adjacent to the Nashua River.

Groton opened a transfer station in 1990 at the Cow Pond Brook facilities to alter the way in which the Town disposes of non-recyclables. Refuse is taken to the station to be shipped to and then burned at the Ogden-Martin Incinerator in Haverhill. Recyclables are also handled at the transfer station. In 2002, the landfill handled approximately 2,000 tons of non-recyclable and 1,000 tons of recyclable materials. Groton has been holding annual hazardous waste days and paint collection days to help assure that these items do not get into the waste stream.

In July 2003, the Town started a "pay-as-you-throw" program for waste disposal at the landfill. Recyclable materials are accepted free of charge while the disposal of non-recyclable materials costs \$1

²⁵ Michelle Collette (Town Planner, Town of Groton, MA), email to Community Opportunities Group, Inc., May 11, 2011.

per 33-gallon bag. In addition, annual dump stickers are available for \$45 for most residents, although senior citizens pay \$10.

3) Erosion

There are no constant and significant problems with erosion in Groton, as most issues are short term and related to particular development projects. Specific areas at risk for erosion in town, if developed, are those areas with slopes from 8 to 15 percent and greater. In particular, the eastern central area of Groton's swarm of drumlin hills could present erosion problems if built upon. This should be noted, as slope conditions usually do not prevent development but do increase costs, and if care is not taken, can lead to serious environmental problems.

The Town of Groton adopted a comprehensive Earth Removal Bylaw and regulations as part of its general bylaws in 1963. The Board of Selectmen acts as the permit-granting authority with the advice of the Earth Removal Stormwater Advisory Committee. The Committee was formed in 1968 and is responsible for reviewing applications, conducting site visits, and filing written recommendations to support the Board of Selectmen. In 1984, the bylaw was amended to limit commercial earth removal operations to the Business (B-1) and Manufacturing (M-1) zoning districts. The Town's Earth Removal Stormwater Inspector oversees earth removal operations. In 1998, Groton passed the Soil Erosion and Sediment Control Bylaw to minimize harmful effects from soil erosion and sedimentation. The Erosion Control bylaw was superseded by the Stormwater Management–Low Impact Development Bylaw in 2006. The U.S. Environmental Protection Agency, effective May 2003, requires permitting for projects on areas greater than one acre for stormwater management during construction activities. The Stormwater Bylaw requires a permit for projects that disurb 20,000 square feet or more. This additional layer of permitting will facilitate further review of projects and hopefully reduce erosion and sedimentation during construction and prevent future stormwater runoff impacts.

4) Chronic flooding

Most areas in Groton that are at risk of flooding are those areas near water and wetlands. The land in Groton that is most susceptible to being submerged from a storm event are the Nashua and Squannacook River shore lands, which flood regularly and are mostly undeveloped. The meandering nature of these two rivers has created a substantially large floodplain, creating large buffers between the rivers' edge and buildable upland areas. Other low-lying areas are also subject to periodic flooding, as discussed in the previous section on Flood Hazard Areas.

Flooding of these areas can be exacerbated by runoff from snowmelt or long term rain events. While development immediately adjacent to the rivers is limited, low-lying areas near ponds and brooks tend to see the brunt of any flood damage that does occur. Structural damage has occurred numerous times in the Nashua River floodplain as a result of the floods of May 1850, December 1897, February 1900, March 1900, March 1936, March 1968, 1987, April 2007, and March 2010.

Although Groton has not erected any flood protection works on any of its rivers or brooks, the Town has sought to prevent floodplain development in its zoning bylaw and by permanently protecting parts of the

undeveloped floodplain as conservation land. To maintain this buffer along the rivers, ponds and brooks susceptible to flooding the Town should focus on these areas for land acquisition.

5) Sedimentation

Areas in Groton that are at risk from sedimentation are generally waters with substantial floodplains or with excessive slopes at their shore lands. The areas falling into the first category are the banks of the Nashua and Squannacook Rivers that tend to be eroded and wash downstream when waters rise during heavy rainfall. Martins Pond, surrounded by the Chestnut and Gibbet Hills, and Long Pond, with Snake and Rocky Hills at its shore, tend to be receptors of soil that heavy storm waters wash away from the hills. In all cases, the sedimentation that occurs contributes heavily to non-point source (NPS) pollution and causes water quality problems. To mitigate these conditions, the Town should carefully monitor erosion, adhere to the Best Management Practices (BMPs) outlined in the Department of Environmental Protection's Stormwater Management Policy Handbook, and continue to enforce the local Stormwater Management—Low Impact Development (LID) Bylaw.

Wave action, both due to wind and motor boats, continues to cause shore line erosion along Lost Lake/Knops Pond. The combination of steep slopes, dense development, and the Quonset soils that proliferate in this area have led to many sedimentation problems. This is exacerbated by the continued practice of building retaining walls which protect the immediate property but tend to magnify wave action on adjacent shore lands.

6) New development

As discussed in Section 3, Groton's current zoning provides the potential for a significant amount of new residential development and a smaller amount of new commercial development. In the previous decade Groton's development growth rate has slowed, and more recent trends show a further reduction in building from rates in the early 2000s. However, given Groton's desirable location and quality of life, the town will most likely continue to attract steady residential development. What's more, as the most easily developable land is consumed, attention will turn to sites with more environmental constraints. This type of development may place more stress on natural features and processes. For example, excessive slopes and swamps in the eastern part of town have not deterred development. Recent intense development has interrupted large expanses of woodlands which in turn threatens wildlife habitat and erodes wildlife migratory routes. Also, noticeable impacts have been seen with the change of farmland into housing on the Ayer border, with the loss of character at this Groton gateway to the Farmers Row Historic District. In addition, areas around water bodies continue to attract residential development. There is a particular concern in protecting the Town water supply well at Baddacook Pond and the areas along the Nashua and Squannacook Rivers. Slope conditions pose less of a constraint for development in the western region of the town. However, unique and significant wildlife habitat in this area provides an opportunity to focus land conservation efforts in "The Throne" area of West Groton.

The Town has several regulatory options for reducing the impacts of single-family and other residential development, including the Flexible Development and Major Residential Development bylaws. However, even with these provisions Groton will need to proactively preserve parcels to ensure the development of

an open space system that supports ecological processes, protects valuable habitat, and supports and enhances recreational opportunities for people of all ages.

7) Ground and surface water pollution

Some of the larger water bodies in Groton have or have had water quality problems that decrease the aesthetic and recreational values of these resources. The Long, Wattle, Massapoag, and Baddacook Ponds and Lost Lake/Knops Pond have all historically been found to be mesotrophic, the middle stage of a water body's transformation into a swamp or marsh. Many of these ponds are characterized by the presence of noxious aquatic plants. Weed harvesting efforts have been undertaken on Baddacook Pond and Lost Lake/Knops Pond in an effort to reduce weeds in swimming and boating areas. Chemical weed control measures have also been implemented with limited success. A more extensive drawdown to control weed growth has also been considered. No one technique has succeeded in reducing the amount of weed growth, and the Town's Great Ponds Advisory Committee continues to explore options for better management of these important natural resources.

Lost Lake/Knops Pond, located within the Merrimack Watershed, has been found to suffer from the stressor of noxious aquatic plants, preventing this water body from meeting water quality standards. In 2005, the Department of Public Health issued an advisory on eating bass caught within Lost Lake/Knops Pond due to metal concentrations. Massapoag Pond, also within the Merrimack Watershed and located in Groton, Dunstable, and Tyngsborough, fails to meet water quality standards due to organic enrichment and low dissolved oxygen, among other factors.

Other surface water issues are noted in "Impaired Water Bodies" section, below.

8) Impaired water bodies

As noted previously in this section, the Federal Clean Water Act requires states to evaluate the quality of all surface water bodies and report these annually on an Integrated List of Waters. The most serious category on this list is Category 5, which are also reported on the 303(d) list and to the federal government. These water bodies are subject to Total Maximum Daily Load (TMDL) limits for their offending pollutant.

Table 4.2 summarizes the water bodies in Groton that appear on the proposed 2010 Integrated List of Waters.

Table 4.2: Groton Impaired Surface Water Bodies		
Category 2 – Some uses attained		Uses Attained*
James Brook	Headwaters in Groton to confluence with the Nashua River in Ayer/Groton	Aquatic Life Primary Contact Secondary Contact Aesthetics
Squannacook River	Hollingsworth and Vose in Groton/Shirley to confluence with the Nashua River in Shirley/Groton/Ayer	Aquatic Life Primary Contact Secondary Contact Aesthetics

Table 4.2: Groton Impaired Surface Water Bodies		
Category 4c – Impairment not caused by a pollutant		Impairment Cause
Lost Lake/Knops Pond	Groton	Metals Exotic Species
Category 5 – Waters requiring a TMDL		Pollutant needing TMDL
Martins Pond Brook	Outlet at Martins Pond Brook to inlet at Lost Lake, Groton	Siltation Organic enrichment Turbidity
Massapoag Pond	Dunstable/Groton/Tyngsborough	Metals Organic enrichment Noxious aquatic plants Exotic species
<p>Source: Massachusetts Executive Office of Energy and Environmental Affairs, Department of Environmental Protection, Division of Watershed Management – Watershed Planning Program, <i>Massachusetts Year 2010 Integrated List of Waters: Proposed Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act</i>, April 2010.</p> <p>*Category 2 waterways were found to support the uses for which they were assessed, as listed under “Uses Attained.” Primary Contact uses include activities where there is prolonged contact with the water, such as swimming, and Secondary Contact uses are those activities where contact with the water is incidental, such as fishing or boating.</p>		

9) Invasive, non-native plants

As noted above, noxious weeds plague area ponds and waterways. Recreational use of the Nashua River is seriously impacted by beds of water chestnut that have become established within Pepperell Pond. Boating, fishing, and swimming activities are also threatened in Lost Lake/Knops Pond and Baddacook Pond by the rampant spread of non-native invasive aquatic weeds. The Groton Lakes Association and Great Ponds Advisory Committee see the potential for this problem to cause a drop in property values.

Invasive weeds have become commonplace along road verges, on conservation lands, and private properties throughout Groton. Former farm lands are particularly vulnerable to the establishment of non-native species which tend to out-compete native species. Many of these invasives reproduce prolifically and tolerate a wide variety of habitats. Birds can facilitate the long-distance dispersal of seeds. Controlling or managing the spread of invasive plant species on conservation land is a major issue and expense for municipal and nonprofit land managers.

10) Forestry issues

Public perception of forestry management can be a challenge in Groton. As part of its overall forestry management program, the Town sometimes cuts trees on conservation land, which is very controversial as some community members feel this practice is antithetical to the conservation of natural resources. Damage from storms is also a concern, with two recent storm events that caused extensive damage. The Conservation Commission and Water Department are working closely with the Town Forester to develop forestry management plans with clear goals to improve wildlife habitat and the health of the forest, secure funds for control of invasives, and provide signage and trail improvements on conservation lands.

11) Environmental equity issues

While Groton's open space areas are distributed throughout all parts of town, universal access is a challenge. Many conservation areas have steep slopes and/or uneven surfaces that create difficulties for disabled individuals and senior citizens. Four season access can also be a challenge. The Department of Public Works maintains the Rail Trail, but during winters with heavy snowfall the trail becomes unsafe for older users.

5. INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST

Protecting open space is important on many levels. First, open space provides essential environmental services such as protecting the supply of clean drinking water, improving air quality, and providing flood protection. Undeveloped areas create habitat for wildlife and preserve ecological systems. Open space is also critical for maintaining a high quality of life, providing opportunities for passive and active recreation, learning, and connection to nature. Finally, working farms and forests provide essential products and help maintain the character of a community.

This inventory catalogs all protected and unprotected open space of interest for conservation or recreation use. The inventory includes properties owned by public, private, and nonprofit entities. Protected open space refers to lands protected from development in perpetuity. Unprotected open space refers to vacant land and land kept in an open and productive state producing either crops or trees or serving as a pasture but with no permanent protection. Unprotected areas that contribute to the open space character of Groton or have recreation value are considered vulnerable properties, as they lack adequate legal barriers to development, and are critical to protect.

Saving open space has been a high priority in Groton for many years. Today, Groton has over 8,253 acres of protected land—approximately 42 percent of the town’s total land area. These lands are owned by local and state government entities, private nonprofit organizations, and private individuals (see Table 5.1). An additional 2,465 acres have some degree of protection through Chapter 61 designations. Lands classified under G.L. Chapter 61, 61A, or 61B are taxed according to their forestry, agricultural, or recreational use value, rather than their market value. In exchange for a significant property tax reduction, the property owner grants a right of first refusal to the Town to acquire the land before it converts to another use. The Town may assign its right of first refusal to nonprofit conservation organizations. Groton has exercised its right of first refusal in several instances and purchased property before it could be sold for development. Institutions such as the Massachusetts Institute of Technology and the American Baptist Churches of Massachusetts also own substantial tracts of land that, while not legally protected, are unlikely to be developed.

Table 5.1: Summary of Protected Land in Municipal, State, and Private Ownership

Category	Acreage	Percent of Open Space
Town Owned Conservation	2,312	28%
Town Water Departments/Board of Health	295	4%
Town Park/Town Forest/Cemeteries	778	9%
State Owned	731	9%
Private, Nonprofit (NEFF, Audubon,,GCT,)	3,232	39%
Private (other)	906	11%
TOTAL	8,254	

Groton has a higher percentage of total land area protected in perpetuity as well as more acres of land protected per capita than the surrounding towns (see Table 5.2).

	Percent of town land area protected in perpetuity	Land area protected in perpetuity per capita (acres)
Groton	42.0%	0.78
Townsend	32.7%	0.76
Shirley	26.0%	0.35
Harvard	23.9%	0.61
Boxborough	18.8%	0.23
Acton	16.8%	0.11
Pepperell	16.4%	0.23
Dunstable	15.1%	0.57
Westford	14.6%	0.13
Littleton	12.7%	0.15
Ayer	11.0%	0.08
Tyngsborough	10.8%	0.10
Chelmsford	5.8%	0.03
Source: MassGIS 2012, Groton Conservation Commission Open Space Inventory 2011.		

Since 2005, thirty-six parcels were added to the Groton's inventory, totaling more than 1,700 acres. The additions include several notable parcels such as Surrenden Farm (over 330 acres), Massachusetts Audubon Society's Rocky Hill Wildlife Sanctuary (over 430 acres), the Academy Hill Conservation Area (over 210 acres), and Gamlin Crystal Spring (150 acres). The Surrenden Farm property was purchased in phases beginning in 2006 and is now known as the General Field (owned by the Groton Conservation Trust) and Surrenden Farm (the west section owned by the Town with oversight by the Groton Conservation Commission). The Farm is protected by conservation restrictions and management plans have been prepared for all portions of the property.²⁶

Few of the unprotected priority parcels identified in the 2005 *Open Space and Recreation Plan* have been developed since 2005. Most of the new development that has occurred in Groton within the last seven years has been the build-out of existing approved subdivisions. However, small pieces of some large, significant parcels have been subdivided and developed, such as the Wrangling Brook Farm in West Groton.

²⁶ Surrenden Farm Ad Hoc Committee, *Surrenden Farm Resource Management Plan* (February 2011).

Despite Groton's commitment to preserving open space, there are important open space and recreation parcels with limited or no protection that remain vulnerable to future development. From a universe of all vacant parcels in town over five acres, 60 parcels, totaling over 1,800 acres, were identified as "priority" parcels to protect either because of the size of the parcel, connectivity with existing open space or recreation lands, or importance for resource protection. The prioritization was informed by mapping conducted for the Master Plan, which identified key resource protection gaps in Groton. These resource protection gaps occur primarily around water resources.

The following sections describe Groton's inventory by category of landholding. (See also Map 7: Open Space Inventory and Table 5.5 Open Space Inventory.)

A. Private Parcels

Many private parcels in Groton have been permanently protected through conservation or agricultural preservation restrictions while others have some degree of protection through designations as Chapter 61, 61A, or 61B lands.

1) Agricultural properties

Groton has a strong agricultural heritage but has gradually lost much of its agriculture to farm abandonment and residential development. However, the Town and its nonprofit partners have made concerted efforts to protect land for agricultural use, including vegetable and livestock operations, orchards, tree farms, equestrian facilities, and hayfields. Beyond the economic and cultural value of farming, working landscapes also contribute to Groton's scenic beauty. Private initiatives, Agricultural Preservation Restrictions (APRs), designation of lands under Chapter 61A, and conservation land licenses and leases to farmers have helped to preserve Groton's agricultural heritage. There are approximately 1,094 acres of agricultural land in Groton.

To qualify for Chapter 61A, farmland must have a minimum of five contiguous acres "actively devoted" to agricultural or horticultural use. These classifications include animals, fruits, vegetables, and forest products. To qualify as "actively devoted" a minimum of \$500 in gross sales income during the prior two years is required. The landowner must apply to the Town Board of Assessors for consideration, and the status must be renewed every year. If approved, the property is taxed according to its agricultural value rather than its market value. While landowners who opt to participate in 61A provide good stewardship of lands kept in a working agricultural state, and the Town is allowed the right of first refusal to purchase the land should



the property is sold. The Town is allowed the right of first refusal to purchase the land should

the owner decide to sell or take the land out of the restricted status, there is no permanent protection provided by the program. In Groton, 1,247 acres are classified as Chapter 61A Farm Lands.

Massachusetts' APR Program is a voluntary program that protects "prime" and "state important" agricultural land by offering to pay farmers and other land owners the difference between the "fair market value" and the "agricultural value" of their farmland in exchange for a permanent deed restriction that precludes any use of the property that will be detrimental to its agricultural viability. Three properties in Groton, with a combined total of about 337 acres of land, are protected through APRs:

- **The Hillbrook Orchard.** In 1983, the Town and the Commonwealth of Massachusetts purchased an APR on the Hillbrook Orchard, protecting seventy-one acres along both sides of Old Ayer Road.
- **The O'Neill Property.** The Town and state purchased APRs on this 153-acre property in three phases. Parcel I, with twenty-eight acres of orchard on Old Ayer Road, and Parcel II, with forty-two acres of orchard and woodland on Prospect Hill, were protected in 1998. The third parcel, a forty-five-acre orchard between Higley Street and the Rail Trail, was protected in 1999.
- **Brooks Orchard.** In 2004, the state purchased an APR on 113 acres of old orchards off Martins Pond Road from the Webber family in order to protect this scenic drumlin from development.

2) Forested land

Groton's protected open space includes three significant forests: the 505-acre Groton Town Forest in West Groton near the Shirley town line, the privately owned 717-acre Wharton Plantation in the northeast corner of Groton, and the 506-acre J. Harry Rich State Forest in the northern part of Groton along the Nashua River and Pepperell Pond. In West Groton, an area known as The Throne is one of the largest, most important contiguous undeveloped tracts in town with hardwood and softwood forest, vernal pools, wild cranberry bogs, and wetlands. The Town, Commonwealth, Groton Conservation Trust, and New England Forestry Foundation protect much of the land in The Throne area.

Approximately 1,106 acres in Groton are classified as Chapter 61 Forest Lands. These lands have a minimum of ten contiguous acres under a minimum ten-year management plan certified by the State Forester. Once the application has been received and approved, the classification statement functions as a lien upon the land for taxes levied under the provisions of M.G.L. Chapter 61. The landowner must re-file every ten years or the land will be removed from classification by the Town Assessor. A tax is payable on stumpage income for the two years prior to management and a much reduced property tax is payable once per year of management.

3) Areas significant for water resource protection

Most of Groton's areas that are significant for the protection of water resources such as aquifers, lakes, and river corridors, are owned by public entities, private nonprofits, and institutions. These areas are discussed in subsection B. However, there are significant gaps in resource protection, especially around

Groton's riparian corridors. Large, privately-owned parcels in these gaps are on Groton's list of priority parcels for future protection.

4) Priority areas for protection of rare species and natural communities

Similar to the areas significant for water resource protection, most priority areas for the protection of rare species and natural communities in Groton are owned by public entities, nonprofits, and institutions and thus discussed in subsection B.

5) Less-than-fee interests

Less-than-fee interests in land such as conservation restrictions (CRs), wetland restrictions, watershed protection restrictions, and historic preservation restrictions are valuable tools to preserve privately-owned open space and historic resources. The restrictions, which run with the land for a specified number of years (in the case of a deed restriction) or in perpetuity, restrict land uses and development and must be granted or sold voluntarily by the property owner. Thirty-two parcels in Groton are subject to restrictions to protect future conservation, agricultural, historical, or forestry values. CRs are the most common less-than-fee interest in Groton, protecting 2,307 acres of land. Allowed uses may include activities associated with agricultural or forestry practices and/or recreation. Most of Groton's CRs do not provide for public access, but some exceptions exist. For example, the restriction placed on the 250-acre Gibbet and Angus Hills properties allows limited access to public trails, a hilltop park, and a structure known as the Castle. The CRs on land in the Partridgeberry Subdivision also permit public access. For most types of residential development, Groton requires applicants to set aside open space within a subdivision either by donating conservation land to the Groton Conservation Commission or conveying a CR to the Commission or a nonprofit conservation organization. As a result, Groton has obtained many land donations and conservation restrictions from developers, for a total of some 1,500 acres.

Groton has four easements for trails on private land:

- An informal cart path known as Mahoney Lane which links Williams Barn Sorhaug Woods with Fitch-Woods;
- A trail connector from Longley Rd. to Shepley Hill via the Eliot property;
- The Gratuity Trail Easement connecting Fitch's Bridge Rd. with the Farmers & Mechanics Conservation Area; and
- The Rollins Trail Easement providing a link from the J. Harry Rich State Forest and the Nashua River Rail Trail.

The Greenway Committee continues to explore the potential for replacement or renovation of Fitch's Bridge as a pedestrian access from Groton to West Groton over the Nashua River. According to the Trails Committee, it has been more beneficial to design new trails on public land. The Committee has worked

with the Planning Board and Conservation Commission to identify lands with potential trail connections when the Town considers acquiring and receiving open space parcels.²⁷

6) Private recreation lands

Groton's privately-owned recreation lands include properties owned by the Sargent Youth Foundation, Inc., YMCA, Lawrence Academy, Groton School, Westford Sportsmen's Club, Mountain Lakes Club, and the Grotonwood Camp, which owns 11 parcels totaling approximately 237 acres that include a private beach and significant frontage on Lost Lake/Knops Pond. Several privately owned parcels allow for passive recreation uses, including Gibbet and Angus Hills, the Taisey parcel behind Partridgeberry Woods, and the conservation-restricted land owned by the Deerhaven Homeowners Association off Allyson Park.

Equestrian facilities are an important part of Groton's recreation inventory. They include the privately owned Shepley Hill Farm Equestrian Center (currently located where the Thomas More College plans to build), as well as public resources such as the Nashua River Rail Trail and Hazel Grove Park (formerly called Groton Fairgrounds). The Groton Riding and Driving Club and Groton Pony Club have an informal agreement with the Town to use the thirteen-acre property. Both of these clubs submit a yearly Field Use Request for approval by the Park Commission. Hazel Grove Park, deeded to the Town in 1940, is managed by the Park Commission but maintained by users. The facility includes a racetrack for equestrian activities and several barns.

There are 112 acres in Groton that are classified as Chapter 61B Recreation Lands. This classification requires a minimum of five acres that is left wild and/or maintained for wildlife habitat or used for recreational purposes by the public or a private nonprofit group. One must apply to the Town Board of Assessors for consideration and the status must be renewed every year. A reduced property tax results if approved.

7) Large parcels

There are twelve privately held parcels identified as priority open space that are over fifty acres in size. These parcels are owned by individuals, estates, trusts, and companies and total approximately 861 acres.

8) Major institutional holdings

Groton has some large properties that are owned by institutions and could be developed in the future, though the risk may be fairly low. Two examples include MIT's 218 acres at the Haystack Observatory site on the Groton/Tyngsborough/Westford line, which has hiking and riding trails, and the 237-acre Grotonwood Camp, owned by The American Baptist Churches of Massachusetts. The Conservation Commission has reached an agreement with the Church to place a CR on thirty-five acres of the Camp, but the restriction has not yet been recorded. Groton School and Lawrence Academy are also major landholders in Groton and both maintain their own playing fields.

²⁷ Joachim Preiss, Groton Trails Committee, interview by Community Opportunities Group, Inc. conducted for 2011 Master Plan.

B. Public Parcels

Approximately half of Groton's open space and recreation lands are held by public entities at the state and local levels, while nonprofit organizations own 39 percent.

1) Public conservation and recreation resources

MUNICIPAL CONSERVATION RESOURCES

Publicly owned conservation lands in Groton include both municipal and state-owned land. Permanently protected open space owned by the Town is managed by the Groton Conservation Commission (1,770 acres), the Town Forest Committee (505 acres), and the Groton Water Department (including the West Groton Water District) (305 acres). With the exception of land held for the protection of water supplies, Groton allows public access to conservation parcels for passive recreation such as hiking and picnicking. In some cases, biking, boating, fishing, and swimming are also allowed. Although it is entirely possible for governmental agencies to remove land from public ownership, this scenario is unlikely and would require considerable public scrutiny if proposed. Conversions of public open space, both conservation lands and parks, fall under the Article 97 process of the Massachusetts Constitution. Article 97 states:

"The people shall have the right to clean air and water, freedom from excessive and unnecessary noise, and the natural, scenic, historic, and esthetic qualities of their environment; and the protection of the people in their right to the conservation, development and utilization of the agricultural, mineral, forest, water, air and other natural resources is hereby declared to be a public purpose...Lands and easements taken or acquired for such purposes shall not be used for other purposes or otherwise disposed of except by laws enacted by a two thirds vote, taken by yeas and nays of each branch of the general court."

As part of the Article 97 review process, which also requires a unanimous vote of the Conservation Commission and a two-thirds vote of Town Meeting, a municipality must consider all feasible alternatives, as well as replacement of the converted land with new open space of equivalent value from both a financial and resource protection point of view. Replacement is necessary if the parcel was purchased using state funds.

According to records maintained by the Conservation Commission, there are 89 parcels, or 1,949 acres, of Town-owned land maintained by the Commission. These parcels vary in size from less than an acre to over 213 acres and are located throughout town. The Academy Hill Conservation Area (213 acres), the Flavell Crossing Conservation Area (106 acres), the Groton Woods Conservation Area (117 acres), and the Williams Barn Sorhaug Woods area (93 acres) are among the largest conservation properties overseen by the Conservation Commission. Sorhaug Woods was purchased at auction using funds from the Conservation Fund. Flavell Crossing and Groton Woods were acquired under Groton's Flexible Development special permit process, while Academy Hill was negotiated by the Natural Heritage and Endangered Species Program and the developer as part of the review under the Massachusetts Environmental Policy Act. These protected lands tend to support wildlife habitats and nature study in addition to passive recreational activities and, for some parcels, more active pursuits. The Commission

and the Trails Committee encourage public access to appropriate parcels through signage, parking, and mapping. The Commission also oversees conservation restrictions and APRs on privately held land.

The all-volunteer Town Forest Committee manages the Town Forest, which consists of more than 505 acres of wooded parcels along the Nashua River. Established in 1923 by William Wharton, it was one of the first town forests in the country, and it includes land that was given to or purchased by the Town for town forest purposes. The Committee oversees the Town Forest's use for forestry management and passive recreation. The Committee undertakes periodic, selective harvesting of timber. Proceeds from timber harvesting remain in a reserve fund for forest maintenance.

Groton's water supply is primarily drawn from aquifers. The Groton Water Department draws water from four groundwater wells: the Whitney Well at Whitney (Cow) Pond, two wells located near Baddacook Pond, and the Shattuck Well, which is an emergency source. The West Groton Water Supply District draws water from the Townsend Road Wellfield and the Town Forest Well. Both water systems maintain lands to preserve the integrity of the Town's water supply including properties with existing water storage tanks and wells and land for future storage and supply needs. Land in the watershed of a drinking water supply is protected from development while the associated water supply remains active. If the Town decommissions any of its existing water supplies at some point in the future, the watershed protection parcels could be designated as "surplus" land. However, it is unlikely that Groton voters would ever agree to sell them. Currently, the Groton and West Groton water systems manage over 276 acres in parcels ranging from an acre and a half to 100 acres. The holdings include land surrounding each well and are meant to protect the current and future water supply by buffering them from potentially harmful adjacent land uses and are protected from development. The West Groton Water Supply District owns approximately 120 acres for its wellfield, water storage tanks, and potential well areas. These holdings include a 100-acre parcel that was purchased in 2005 partially with a state grant; the West Groton Water Treatment Plant is located on the site and public trails connect with those in the Town Forest. Public access can be limited on water department lands because of water supply regulations.

MUNICIPAL RECREATION RESOURCES

In addition to conservation lands that support passive recreation, Groton owns and manages a range of recreational resources. The Town maintains eight town commons - Badger, Firemen's, Legion, Minuteman, New Town, Prescott, Orchard, and Sawyer - and a few small parks including Carole Wheeler Memorial Park, Cutler Memorial Park, and Christine Hanson Memorial Playground.²⁸ Groton also has several areas developed for active recreation uses. The Groton Park Commission has care and custody of most of the Town's recreation land. Groton's recreation complexes include baseball, softball, football, and soccer fields at the Cow Pond



²⁸ Town of Groton Park Commission, www.townofgroton.org/main.

Recreation Facility, ball fields and a track at the Groton-Dunstable Regional High School, and small ball fields and playgrounds at the Boutwell School and North and Middle Schools. Outlying facilities include Cutler Field and the Tarbell School playground in West Groton, the Cow Pond Brook and Stonebridge Farm recreational fields on the east side of town, and the High School fields in the north. All of these facilities are equipped with irrigation systems.

In the past decade, Groton has expanded and improved several facilities and has constructed new fields, courts, and parks. For example, the Park Commission and Groton Youth Baseball League recently installed lights at the Cow Pond Brook facility and will be constructing a new baseball field. In addition, the Town recently constructed a basketball court at the Lost Lake Fire Station with Community Preservation Act (CPA) funds.²⁹ The Stonebridge Farm fields were built as a result of Groton's "transfer lot" bylaw. Table 5.3 summarizes Groton's recreation areas by name, location, size, management, and existing facilities. Many of these properties qualify as protected land because the Town acquired them for recreational purposes and the deeds for these parcels limit their use to park land. Still, other large recreation parcels such as the Groton Pool and Golf Center and Hazel Grove Park are not protected in perpetuity.

²⁹ Town of Groton, *Annual Report* 2009, 31.

Table 5.3: Town-Owned Recreation Facilities

Name	Location	Zoning	Acres	Owner	Manager	Facilities	Condition	Public Access	Type of Public Grant Accepted	Degree of Protection
Amory A. Lawrence Memorial Playground	Broadmeadow Road	Public Use District	14.4	Town of Groton	Park Commission	Two ball fields, basketball court, picnic area, playground, gazebo	Recreation facilities	Yes		n/a
Cow Pond Brook Facilities*	Cow Pond Brook Road	Residential Agricultural	110.0	Town of Groton	Board of Selectmen	Playing fields, bridle path, cross country skiing	Recreation facilities	Yes		n/a
Cutler Field	Townsend Road	Institutional	7.0	Town of Groton	Park Commission	Ball field, little league field, basketball court, playground	Recreation facilities	Yes		n/a
George and Agnes Rider Park	Lost Lake Drive	Public Use District	1.7	Town of Groton	Park Commission	Basketball court	Recreation facilities	Yes		n/a
Groton Pool and Golf Center	Boston Road	Residential Agricultural	113.0	Town of Groton	Town Department	Golf course, tennis courts, swimming pool, outdoor pavilion, function hall, cross country skiing, driving range	Recreation facilities	Yes		n/a
Hazel Grove Park	Jenkins Road	Public Use District	13.0	Town of Groton	Park Commission	Equestrian, bridle path, horse boarding	Recreation facilities	Yes		n/a
Sargisson Beach	Whiley Road	Residential Agricultural	19.0	Town of Groton	Conservation Commission	Hiking, fishing, swimming, skating, picnic areas, fire pits	Recreation facilities	Yes		n/a
Stonebridge Farm Recreational Area	Stonebridge Way	Residential Agricultural	11.0	Town of Groton	Town of Groton	Ball fields, tennis court	Recreation facilities	Yes		n/a
Tarbell School	Pepperell Road	Residential Agricultural	1.4	Town of Groton	Park Commission	Playground and grass field at rear of former school site	Recreation facilities	Yes		n/a

Source: Groton Conservation Commission, Open Space Inventory, 2011.

*Note: Only 12 acres of this property are currently designated for recreational facilities

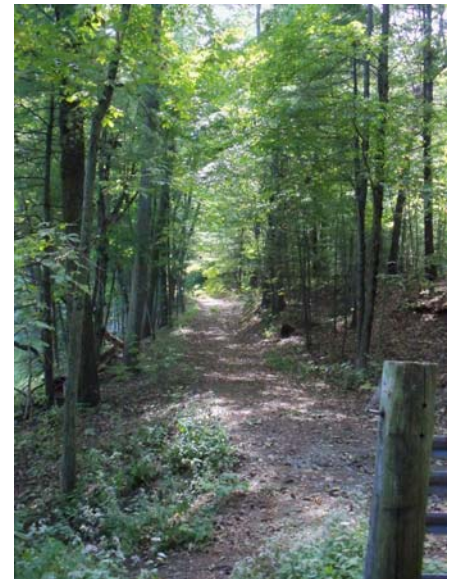
Despite its abundant water resources, Groton has only one public beach, Sargisson Beach on Lost Lake/Knops Pond. In addition, there are several boat launches along the major rivers and at Lost Lake/Knops Pond and Baddacook Pond, which provide access for boating, kayaking and canoeing.

Groton recently restructured the management and operation of the former Groton Country Club, which is now a public resource called the Groton Pool and Golf Center. The facility is open to the public on a user fee or per diem basis, offering golf, tennis, swimming lessons, and summer camp programs for children. The 113-acre property includes a nine-hole golf course, tennis courts, a driving range, a small pro-shop, a covered pavilion, an outdoor pool, and a function hall. The Town wants the Groton Pool and Golf Center to operate as a self-supporting enterprise.

In the past, Groton operated the Evan Holofcencer Ice Rink behind the Legion Hall in the town center. However, this facility has not been operated in many years.

TRAIL RESOURCES

Trails are an important component of Groton's recreation resource inventory. Groton has an extensive network of over 100 trails, including trails on public conservation lands owned by the Conservation Commission and Groton Conservation Trust, New England Forestry Foundation, and the Town Forest. Some additional trails on private land are protected through easements. Groton's trail system provides many passive recreation opportunities such as hiking, biking, running, cross-country skiing, and bird watching. The volunteer Groton Trails Committee actively maintains (clearing, trail markers, and layout) many miles of trails.



The Nashua River Rail Trail, an 11-mile bicycle and walking path that runs between Ayer and Nashua, New Hampshire, passes through Ayer, Groton, Pepperell, and Dunstable. Opened in 2002, the Trail is managed by the Massachusetts Department of Conservation and Recreation (DCR). It has a 10-foot wide paved surface for its entire length and a 5-foot wide gravel equestrian path for seven miles of the trail, from Groton Center to the New Hampshire border in Dunstable. The entire trail is open to pedestrians, bicyclists, inline skaters, wheelchair users, and cross-country skiers.³⁰ There are efforts to develop additional rail trails on several other abandoned railroad right-of-ways in Groton, including a trail along the Squannacook River in West Groton that would extend through Townsend. However, this proposal has received some resistance from abutters in Townsend.

STATE CONSERVATION RESOURCES

The Commonwealth of Massachusetts owns six properties and approximately 731 acres of conservation land in Groton. The most significant holding is the 506-acre J. Harry Rich State Forest, which is used for

³⁰ Massachusetts Department of Conservation and Recreation, www.mass.gov/dcr/parks/northeast/nash.htm.

tree stock and contains many valuable natural habitats. The sixty-six acres of the Nashua River Rail Trail is also included in the total acreage of State-owned land. Other properties include the Squannacook Wildlife Management Area, boat launches at Baddacook and Lost Lake/Knops Pond, and a small parcel on Gibbet Hill with a decommissioned fire tower. These State “conservation and recreation” lands are permanently protected from development, and all of these properties are open for public use. The Massachusetts Bay Transportation Authority (MBTA) owns two properties and fifty-four acres of land in Groton that were part of the old Fitchburg railroad line

2) Nonprofit lands

Several nonprofit organizations own open space in Groton. These groups work together and with the Town to protect lands with significant conservation interest. Table 5.4 summarizes these properties by ownership, acreage, and general location.

Table 5.4: Nonprofit Conservation Organizations with Landholdings in Groton		
Name	Acres	Location
Groton Conservation Trust	1,444	Various locations
New England Forestry Foundation	1,112	Seven properties
Groton Land Foundation	31	One parcel
Massachusetts Audubon Society	437	Rocky Hill Conservation Area
Dunstable Rural Land Trust	28	Dan Parker Road
Source: Groton Conservation Commission Inventory, 2011.		

GROTON CONSERVATION TRUST

The Groton Conservation Trust (GCT) is a private, nonprofit land trust founded in 1964 to acquire, preserve, and provide public access to lands with significant conservation value.³¹ Today, the GCT owns and manages 38 properties totaling 1,485 acres. The properties include agricultural fields, woodlands, meadows, river frontage, and wetlands, ranging in size from a 0.05-acre portion on Mohawk Trail to 150 acres of land at Gamlin Crystal Springs. The GCT’s holdings also include over 150 acres around Lost Lake, 159 acres of protected woodland on Throne Hill, a 146-acre portion of Surrenden Farm (now called The General Field), and the 137-acre Mason Back 100 parcel. The GCT currently leases two properties for agricultural use as hayfields. In 2010, the GCT updated its much-used “Groton Conservation Properties Map” and plans to revise its “Guide to Properties” booklet, which provides maps, narrative descriptions, and trail information for thirteen sites. Some, but not all, of the GCT’s properties are protected with conservation restrictions.

GROTON LAND FOUNDATION

The Groton Land Foundation (GLF), a subsidiary of the GCT, was created in 1988 as a vehicle to carry out limited development projects, i.e., when the cost to acquire and protect land is offset, in part, by the sale of a few house lots. The GLF has helped to protect a significant amount of land in Groton, including fifty-five acres in the West Throne Hill/Wheatley Development.³² For the Wheatley project, in West Groton, the

³¹ Groton Conservation Trust, www.gctrust.org.

³² Pine and Swallow, www.pineandswallow.com/conservation_based_land_planning/index.php.

Foundation designed a subdivision development with twelve acres and permanently protected fifty-three acres. For the past several years the GLF has been inactive due to real estate market conditions.

NEW ENGLAND FORESTRY FOUNDATION

Founded in 1946, the New England Forestry Foundation (NEFF) is a regional nonprofit that owns and manages approximately 23,000 acres of land in New England. NEFF was founded as a conservation organization dedicated to promoting sustainable forestry management practices. In Groton, NEFF manages over 1,110 acres of woodlands, such as the 717-acre Wharton Plantation along Dunstable Road and Baddacook Pond, the 146-acre Sabine Woods between Groton Place and Groton School, the 54-acre Groton Place on Long Hill Road, and the 15-acre Baddacook Woods parcel between Allens Trail and Lost Lake Drive. Despite its conservation ethic, NEFF does not have conservation restrictions on most of its properties. The Baddacook Woods property is the only NEFF parcel that is permanently protected with a conservation restriction. NEFF's Wharton Plantation is managed for timber, wildlife, and quiet recreation.

DUNSTABLE RURAL LAND FOUNDATION

The Dunstable Rural Land Foundation owns twenty-eight acres on Dan Parker Road. This land is surrounded by Chapter 61 and Chapter 61A land abutting the Groton-Dunstable town line, and other vacant parcels owned by the New England Power Company and other private property owners.

MASSACHUSETTS AUDUBON SOCIETY

The Massachusetts Audubon Society, New England's largest conservation organization, protects more than 34,000 acres of conservation land in Massachusetts.³³ Since 2005, the Massachusetts Audubon Society acquired the 437-acre Rocky Hill Wildlife Sanctuary, a diverse landscape of rocky outcroppings, red maple swamps, vernal pools, and pond shores located within an Area of Critical Environmental Concern (ACEC) and BioMap Core Habitat designated by the Natural Heritage and Endangered Species Program (NHESP). The property is protected with a conservation restriction held by the Groton Conservation Commission.

3) Other public, unprotected lands

The Groton-Dunstable Regional School District has significant land holdings in town, much of it is currently used for schools. It is possible that, in the future, portions of this land, such as the undeveloped portions of the Groton-Dunstable Regional High School property (not subject to a Conservation Restriction), could be developed with other structures or for other purposes.

See Map 7: Open Space Inventory and Table 5.5: Open Space Inventory.

³³ Massachusetts Audubon Society, *Annual Report 2010*, 6.

6. COMMUNITY VISION

A. Description of Process

Groton's 2012 Open Space and Recreation Plan update was developed in conjunction with Groton's 2011 Master Plan. In particular, two elements of the Master Plan, "Natural Resources, Water, and Energy" and "Open Space and Recreation" informed this plan. As part of the Master Plan Community Participation Strategy, the Groton Planning Board created eight advisory groups, one for each topic area in the Master Plan. Through a broadly conducted outreach process, the Planning Board invited residents to request appointment to the advisory groups based on interest area. Advisory groups were asked to respond to policy questions, provide feedback on working papers, and create goals for each element. In addition to the advisory group efforts, Groton held two town-wide community forums and one specialized workshop as part of the master plan process. In these forums, residents were asked to identify areas for preservation, conservation, and change; discuss priorities; and clarify goal statements. The master plan consultants also conducted interviews with key stakeholders and met with Town Department Heads to gather additional information to inform the master plan recommendations.

The community input related to open space and recreation received during the master planning process is the foundation for this *Open Space and Recreation Plan* update. This information was supplemented through formal meetings and informal communication with the Groton Conservation Commission, Groton Park Commission, and Town planning and conservation staff. In addition, Groton asked residents to respond to an open space and recreation survey, which was mailed with municipal electric bills to roughly 4,500 residents in February 2011 (the survey and results can be found in Appendix A). This distribution method significantly improved the number of responses received over the last survey, conducted in support of the 2005 *Open Space and Recreation Plan*. The 2011 survey received nearly 430 responses, compared to about 50 in 2005, when the survey was distributed at Town Meeting. The public participation process culminated in a Public Forum to solicit feedback on open space and recreation needs, vision, goals, objectives, and action plan.

B. Statement of Open Space and Recreation Goals

Groton has a rich history of open space and recreation planning and acting to preserve open space. Maintaining the rural character of the community, its agricultural heritage, and valuable natural resources has been a constant theme across planning efforts in Groton from the Town's first Comprehensive Master Plan prepared by Charles Eliot in 1963, to the most recent Master Plan, to the current update of the *Open Space and Recreation Plan*. The well-preserved Town Center, farmland/historic areas, greenway corridors along the Nashua and Squannacook Rivers, and more than 8,263 acres of protected lands are evidence of Groton's ongoing commitment to preservation of important historical, agricultural, and natural resources. Because of its legacy of careful planning, Groton continues to be an attractive place to live, work, and play, providing a high quality of life for residents but also resulting in increased growth pressures.

Groton's legacy of valuing open space preservation is evident in the consistency of its open space and recreation goals between the 2005 *Open Space and Recreation Plan*, the 2011 Master Plan, and this 2012 *Open Space and Recreation Plan Update*. Input from Town commissions and the public resulted in only minor changes to the 2005 goals, most notably adding an increased focus on preserving agricultural lands to the community vision, a response to growing pressure on Groton's agricultural properties. Preserving Groton's agricultural heritage was also a cross-cutting theme of the most recent master plan. There was consensus among the commissions and the public that these goals should not be presented in rank order, as it would be difficult to weigh these goals against each other and all are critically important to the community's vision of its future.

The goals listed below express Groton's "ideal" open space and recreation system that protects those things that are important to its residents. These goals are:

- ❖ Preserve Groton's rural, small town character by identifying, preserving, and protecting important historic, cultural, natural, and agricultural resources.
- ❖ Protect and enhance the quality of Groton's surface and groundwater as a source of drinking water and for wildlife and recreational use.
- ❖ Enhance Groton's natural environment by taking advantage of local and regional linkage of open space in the creation of greenways.
- ❖ Preserve, protect, and manage fields, forests, and agricultural land.
- ❖ Increase environmental awareness and understanding amongst Groton's entire community.
- ❖ Provide adequate recreational opportunities for all residents of Groton.

These goals suggest general policy direction, forming the basis of the more specific goals and objectives presented in Section 8, but do not prioritize specific actions. Those issues most important to the Town of Groton are identified in the Five-Year Action Plan, presented in Section 9.

7. ANALYSIS OF NEEDS

Groton's open space and recreation needs are separated into three categories: resource protection needs, community needs, and management/potential change of use needs. These needs describe the shortfall between Groton's existing conditions and the community's vision and are informed by Groton's environmental resources, existing open space and recreation inventory, and input from the public and Town boards and staff.

A. Summary of Resource Protection Needs

Although Groton has had an impressive legacy of preserving and protecting natural resources, critical natural resources and agricultural lands remain unprotected. Groton's land and aquatic resource protection needs are outlined below.

1) Land resources

NATURAL RESOURCE PROTECTION

Despite its robust inventory of conservation lands, ecologically significant parcels remain unprotected, particularly along waterways. Important gap corridors include:

- Central reach of the Nashua River from the Town Forest north to the J. Harry Rich State Forest;
- Portions of the Squannacook River from the Town Forest north through West Groton;
- Most of James Brook, from the Ayer border north through Groton Center;
- Martins Pond Brook from Martins Pond to Lost Lake/Knops Pond;
- Whitney Pond and Cow Pond Brook;
- Nod Brook and Unkety/Hawtree Brook; and
- Reedy Meadow Brook.

While portions of these gaps have some regulatory protection under the Wetlands Protection Act and Groton's wetlands bylaw, many riparian corridor functions such as flood mitigation, water quality buffering, and wildlife connectivity require a wider buffer and more control over land use changes that are not covered by state or local wetland regulations. Protecting these irreplaceable resources is essential to sustainability goals in Groton and filling gaps in protection should be a priority moving forward.

Many of the priority open space parcels identified as part of the inventory of lands of conservation and recreation interest are located in the resource protection gap areas. Other parcels are considered high priority because of their size or connectivity with other open space lands. Groton should focus its land acquisition and protection efforts on these high priority parcels and must be willing to forgo attempts to acquire lower-ranking properties. During the public forum conducted as part of this planning effort, the

public encouraged the Town to take a proactive approach to protecting high priority parcels. As part of this effort, the Town needs to work with other conservation groups to approach property owners and discuss opportunities for land protection, including fee-simple acquisition and conservation restrictions or easements. Partnering with other organizations and leveraging funds is especially critical given the competing demands for Town conservation funds.

Moving forward, Groton may want to consider creating and adopting a criteria-based ranking system to evaluate potential land acquisitions. Ranking criteria and a transparent process for establishing open space priorities can help the Groton Conservation Commission compare similar open space parcels and determine which property should receive precedence when faced with multiple potential acquisitions and limited resources. The need for a ranking system is especially important for parcels under Chapter 61, 61A, and 61B agreements. Although Groton has a right of first refusal to purchase these properties, it must act within 120 days of receiving written notification from a landowner. Since the Town cannot (and should not) acquire every parcel of open space as it becomes available, setting priorities is critical. Otherwise, Groton will find itself pressed to decide and act quickly—at least with regard to Chapter 61 properties—and risk losing a parcel of open space that might address important open space and natural resource needs. Criteria for the ranking system should include:

- Whether the parcel is located in a Preservation or Conservation Design Area, as designated in Map 3.4 of the 2011 Master Plan.
- Whether the parcel is adjacent to or could be easily connected to other open space.
- Whether the parcel can contribute to the development of a town-wide recreational trails network.
- Whether the parcel is located in or near a natural resource gap area.
- Agricultural value of the parcel.
- Whether the parcel contributes to or could provide unmet recreation, wildlife habitat, and/or water resource needs.

AGRICULTURAL LANDS

Protecting Groton's agricultural heritage has become increasingly important for Groton residents in recent years as more and more farms have gone out of business and prime agricultural land has been sold for housing subdivisions. Agriculture, as a way of life and an economic pursuit, was a cross-cutting theme of the 2011 Master Plan and strengthening the agricultural component of this *Open Space and Recreation Plan* is a key change from the 2005 Plan. Preserving local agricultural operations also allows Groton residents access to local food sources, which helps achieve sustainability goals. Although some agricultural lands are protected by Agricultural Preservation Restrictions (APRs), Chapter 61A designations, or conservation restrictions, many of Groton's most valuable agricultural lands remain unprotected.

As stated in the Master Plan, Groton needs a clear policy and programs to preserve its farmland. Prioritizing agricultural lands for preservation is critical, and the Town should continue its efforts to

analyze existing agricultural lands, soil classifications, and links to existing open space resources to determine a list of priority parcels. Ideally, the highest priority parcels will address both natural and water protection needs and farmland protection. Since most of the resource protection gap corridors contain soils classified as Prime Farmland and Farmland of Unique Importance, Groton should consider prioritizing the preservation of lands within the gap corridors that contain agricultural resources.

A complementary goal to preserving agricultural lands is supporting agricultural businesses through economic development and other initiatives. Without government subsidies that make farming economically viable, farmlands will eventually convert to new uses as a result of rising land prices. Saving agricultural land in Groton will require support from all levels of government and ongoing subsidies through public land acquisition and the purchase of APRs and conservation restrictions (CRs). Some of these subsidies may require partnerships and resource pooling with a variety of public and private entities.

The Town of Groton currently licenses some conservation lands for agricultural use and continues to explore ways to expand this practice. Although some conservation lands are inappropriate for agricultural uses due to site conditions such as a lack of water, the Master Plan Open Space and Recreation Working Group felt that there were opportunities for additional farming on conservation land. The Groton Conservation Commission should work with local farmers to determine their needs and concerns related to farming on conservation parcels. There are legal constraints on dispositions of conservation land, such as for long-term leases. In 2009, the Commission developed a Farming Policy and formalized the licensing process to help balance conservation and agricultural needs.

RECREATION LANDS

There are nine publicly-owned areas in Groton that are dedicated to active recreation. These areas are located throughout town with areas in each major neighborhood (West Groton, Groton Center, and Lost Lake) as well as other parts of central and eastern Groton and support a variety of uses including baseball, softball, basketball, tennis, golf, swimming, lacrosse, volleyball, street and ice hockey, skate boarding, horseback riding, and picnicking.

Table 7.1: Town-Owned Recreation Facilities

Name	Location	Acres	Manager	Facilities
Amory A. Lawrence Memorial Playground	Broadmeadow Road	14.4	Park Commission	Two ball fields, basketball court, picnic area, playground, gazebo
Cow Pond Brook Facilities*	Cow Pond Brook Road	110.0	Board of Selectmen	Playing fields, bridle path, cross country skiing
Cutler Field	Townsend Road	7.0	Park Commission	Ball field, little league field, basketball court, playground
George and Agnes Rider Park	Lost Lake Drive	1.7	Park Commission	Basketball court
Groton Pool and Golf Center	Boston Road	113.0	Town Department	Golf course, tennis courts, swimming pool, outdoor pavilion, function hall, cross country skiing, driving range
Hazel Grove Park	Jenkins Road	13.0	Park Commission	Equestrian, bridle path, horse boarding
Sargisson Beach	Whiley Road	19.0	Conservation Commission	Hiking, fishing, swimming, skating, picnic areas, fire pits
Stonebridge Farm Recreational Area	Stonebridge Way	11.0	Town of Groton	Ball fields, tennis court
Tarbell School	Pepperell Road	1.4	Park Commission	Playground and grass field at rear of former school site.
Source: Groton Conservation Commission, Open Space Inventory, 2011.				
*Note: Only 12 acres of this property are currently designated for recreational facilities.				

Because many of Groton's playing fields are already over capacity, the Town will need to acquire additional recreation land or expand existing facilities to meet demand. Coordinating and advocating for the purchase of recreation lands is difficult given Groton's lack of a dedicated recreation department or commission. Recently, Groton had an opportunity to purchase land for playing fields, but the deal fell apart because the project lacked an advocate. Groton's lack of a dedicated recreation department, which would serve as a natural advocate for recreation land acquisition, leaves a void in recreation planning that Groton needs to address.

Future recreation land acquisitions should ideally be located in population centers and in close proximity to existing facilities. Lands currently designated under Chapter 61, 61A, and 61B could be converted to recreation lands if the Town purchases these lands under its right of first refusal. Ultimately, the need for recreation land is dependent on population growth and future recreation programming.

2) Aquatic resources

There are many resource protection needs related to Groton's aquatic resources. As noted previously, there are gaps in protection around many of Groton's waterways, including the Squannacook and Nashua Rivers. To protect these and other resources moving forward, the Master Plan recommended that

the Town consider adding an additional level of analysis to its future planning efforts aimed at protecting Groton's riparian corridors. This analysis should include an assessment of which areas are most likely to be threatened by land use change.

In addition, Groton faces several water quality challenges. Water pollution from local and regional sources is compromising the integrity of key water resources in town such as the Nashua River and Lost Lake/Knops Pond. Groton needs to work with other watershed communities and organizations such as the Nashua River Watershed Association (NRWA) to identify and resolve interconnected water pollution issues. Locally, Groton needs to develop a clear policy and regulatory controls for Stormwater Management—Low Impact Development (LID), an approach to managing stormwater runoff that emphasizes conservation and the use of natural features to protect water quality. Although aspects of LID are addressed in the Town's stormwater management bylaw, zoning bylaw, subdivision control and wetlands protection regulations, these regulations are not consistent. Groton should develop a LID policy that cuts across Town departments, ensures consistency across regulatory controls, including site plan review and subdivision control, and widens the scope of LID to more types of development, particularly residential. To protect wetland resources, Groton should also explore ways, for example through public education or monitoring, to comply with wetland regulations on private land where disturbances such as land clearing, farming, logging, etc. may not come before the Conservation Commission for review.

The Town should also continue to investigate non-point sources of pollution in the Lost Lake/Knops Pond area. Excess fertilizers and untreated sewage are causing eutrophication in the lake, which has negative impacts on the area's ecosystem. Although Groton is pursuing tying into the Ayer wastewater treatment facility to help with sewage issues in and around the lake, this facility will not address all the pollutants (e.g., run-off from lawn fertilizers and other chemicals) that may be affecting the area. The Town should determine which pollutants are harming the lake and evaluate the potential for enhanced LID regulations to mitigate future pollution.

Groton needs to improve its public outreach related to both LID and water quality issues in general, educating the public on the connection between practices such as lawn fertilizing and improper pharmaceutical disposal and water quality. This public outreach should be conducted using as many avenues as possible, including educational programs at local schools and public facilities as well as informational leaflets posted throughout town or included in utility or property tax bills.

WATER SUPPLY

Providing an adequate supply of safe drinking water is an essential environmental and public health objective. The Groton Water Department and West Groton Water District currently have a sufficient supply of water, with annual withdrawals below their Water Management Act permits. A new well, the Town Forest Well, has come online since the 2005 *Open Space and Recreation Plan*, which stated that finding and funding an appropriate water supply source were the two main issues facing the Groton Water Department. Although Groton's water withdrawals are consistently below its permits, the Master Plan recommends that the Town conduct a more thorough study of safe, sustainable water withdrawal amounts, taking into consideration the hydrologic relationship between groundwater, wetlands, and surface water features and likely future development. Specifically, the Town should assess potential

impacts of future growth and changes to groundwater protection Zones II and III of existing and potential wells.

To protect its existing sources, Groton should purchase additional land in areas designated as Zone II (the area that provides the most direct supply of water to the well under stress pumping conditions) to ensure that these areas are appropriately protected. Climate change will almost certainly bring a more volatile mix of droughts and floods, which suggests that additional watershed areas should be protected to increase recharge and prevent contamination from flooding.

Although Groton's water supply needs are not pressing at this time, the Town needs to be proactive in identifying potential future sources of water supply to meet future needs. After identifying appropriate sources, Groton needs to make plans to either acquire the land outright or establish conservation plans for the site.

Water conservation strategies are another integral component of water supply planning and can help Groton continue to meet its withdrawal limits and preserve additional water supply sources. Both the Groton Water Department and the West Groton Water Supply District should continue and expand public education around water conservation issues for local residents and business owners. Since many water conservation efforts are voluntary, Groton needs to educate the public about ways to save water such as rainwater retention and xeriscaping. Although many water conservation activities are universally applicable, the Groton Water Department and West Groton Water Supply District may require different levels of conservation or conservation measures, because they draw from separate watersheds. This could create confusion for users if, for example, one system issued mandatory water conservation measures during the summer and one did not. While a certain amount of inconsistency is unavoidable, both water supply entities should strive to have similar water conservation programs to ensure better compliance and participation from town users.

B. Summary of the Community's Needs

Both the master planning practice and the open space and recreation survey addressed specific community needs related to recreational programming and facilities (for both passive and active recreation uses). However, the needs were not consistent across both sources of public input. For example, public input received during the master planning process suggested a need for increased recreational programming and facilities, while the survey respondents generally felt that the existing recreational services were sufficient.³⁴ These discrepancies suggest the need for additional planning activities to accurately determine Groton's recreation needs.

³⁴ As explained in Section 6, the survey results may be skewed by the demographics of the respondents—mostly older residents with older children or no children.

1) Recreational programs

Since the 2005 *Open Space and Recreation Plan*, Groton's recreation department has been cut due to budgetary constraints. Recreation programs in town are run through private providers, which run their programs on Town-owned lands. Overall, this arrangement has worked well.

Competitive sports for children are the predominant recreation activities currently offered in Groton. The Master Plan recommended that the Town expand its recreation offerings to provide more variety, adding options for non-competitive sports; cultural and educational offerings; programs for adults, seniors, or people with disabilities; and more affordable activities, and suggested reinstating a municipal recreation department to achieve this goal. The results of the 2011 Open Space and Recreation Survey, however, suggest that there may not be the community support for either additional programming or a municipal recreation department. There was a mixed response to questions about the importance of recreational programming, such as providing swimming lessons at Sargisson Beach, which 25 percent of respondents felt was not important while 16 percent felt was very important. Respondents were similarly split on the topic of reinstating the Town recreation department; 41 percent of respondents felt that the Town should reinstate the department, 21 percent felt the Town should not, and 38 percent were undecided. These responses could be influenced by the demographics of survey respondents, which were older adults with older children or no children at home.

Clearly, additional planning is required to assess the community's desires about expanded recreation programming, run through the Town or other providers. This planning effort should assess the recreation needs of all populations in Groton, including underserved populations such as adults, seniors, and residents with disabilities. Sharing recreational programming and resources with a neighboring town (this could be especially useful for activities that require special equipment and facilities such as swimming and tennis) or expanding private offerings at the publicly-owned Groton Pool and Golf Center may be viable options for Groton to expand recreation programming without creating a new recreation department.

2) Recreational facilities

The results of the 2011 survey show that Groton residents place a high value on public recreation facilities with 60 percent of respondents answering that providing public recreation facilities was a "4" or a "5" in terms of importance on a 5-point scale (with "5" being "very important"). In the past ten years, Groton has expanded or improved several facilities and has constructed new fields, courts, and parks. Improvements include new lights and a new baseball field at the Cow Pond Brook Facility, a new basketball court at the Lost Lake Fire Station, and new fields at Stonebridge Farm Fields, built as a result of Groton's "transfer lot" bylaw. Despite these improvements, Groton's recreation facilities are insufficient to meet the demand and many fields are over capacity. Groton has reserved fourteen acres of the Surrenden Farm as unrestricted land for future uses allowed under the Community Preservation Act (CPA), including active recreation. However, developing fields on the Surrenden Farm property will be very difficult. The access road is narrow and substandard, and severe erosion from previous clear cutting will require significant infrastructure improvements to re-grade the site for parking and field

development. Local institutions, including the Groton School and Lawrence Academy, also have recreation facilities with limited public access.

In addition to playing fields, Groton may want to consider constructing additional canoe/kayak launches on the Nashua River to increase water access, although 58 percent of survey respondents felt that Groton currently has an adequate number of boating areas. Groton could also use more recreation facilities that are close to activity centers. While expanding the Cow Pond Recreation Facility would add new fields and consolidate uses, it is far from Groton's villages, schools, and other neighborhoods. The Groton Pool and Golf Center is close to Groton Center, but many of its facilities are in disrepair. Improvements to the complex would provide a centrally located recreational complex that could include programming for all age groups.

Table 7-2: Amenities Available at Recreation Facilities	
Amenity	Facility Name
Baseball/Softball Diamonds	Amory A. Lawrence Playground (2) Cow Pond Brook Facilities (2) Cutler Field (2 - 1 Little League) Stonebridge Farm Recreation Area
Basketball Courts (outdoor)	Amory A. Lawrence Park Cutler Field George and Agnes Rider Park
Basketball Courts (indoor)	Groton-Dunstable Regional High School Lawrence Academy; Groton School
Cross Country Skiing	Cow Pond Brook Facilities; Groton Pool and Golf Center
Equestrian Track & Trails	Cow Pond Brook Facilities Groton Fairgrounds/Hazel Grove Park Nashua River Rail Trail Shepley Hill
Field Hockey Field	Groton-Dunstable Regional High School
Golf	Groton Pool and Golf Center (fee)
Ice Hockey Rink	Groton School (fee); Lawrence Academy (fee)
Playgrounds	Amory A. Lawrence Memorial Playground Christine Hanson Playground Cutler Field Prescott School Boutwell School Tarbell School N. and S. Middle Schools
Soccer Fields	Cow Pond Brook Facilities (2) Lawrence Academy; Groton School
Skating (outdoors)	Sargisson Beach, Wattles Pond
Swimming Pool/Beach	Groton Pool and Golf Center (fee) Sargisson Beach, Squannacook River (informal) Groton School (available to seniors at designated times)
Tennis Courts	Groton Pool and Golf Center (fee) Stonebridge Farm Recreational Area

Table 7-2: Amenities Available at Recreation Facilities

Amenity	Facility Name
	Regional High School Lawrence Academy (8) Groton School (10)
Track	Groton-Dunstable Regional High School
Sources: Groton 2005 Open Space and Recreation Plan, Groton Conservation Commission, Open Space Inventory 2011.	

3) Passive recreation

Groton has a large number of trails that allow for passive recreational activities such as hiking, biking, bird watching, and cross country skiing. However, there are not connections between these trail resources. By identifying and protecting some key parcels, Groton could develop a connected, town-wide trail system that supports both passive recreation and transportation alternatives within the town. Ideally the network of trails would link the town's residential areas, bike paths, regional trails, and the Nashua and Squannacook Rivers. Building on the many existing trails on Town-owned conservation land, the network would give hikers, bikers, and equestrians direct access to a continuous network of trails. Ultimately, the Town could develop various trail segments as interpretive trails with signage and written guides describing the area's historical features and natural history. To begin connecting trail segments, Groton should focus on linking existing trails on public land with paths and sidewalks along town roads.



Hazel Grove Park (formerly Groton Fairgrounds) is a unique resource that, with improvements, could be a valuable addition to Groton's inventory of passive recreation resources. Located next to conservation land on the Nashua River, the site offers unique opportunities for trail development, including the use of the property for access and parking. However, the current users have concerns about the safety and security of the horses and their riders if public access is allowed to the site. Groton will need to undertake additional planning that considers a range of issues and interests, beyond those of the current users, in order to determine appropriate public access to the Hazel Grove Park.

4) Statewide Comprehensive Outdoor Recreation Plan (SCORP)

Every five years the Commonwealth prepares a Statewide Comprehensive Outdoor Recreation Plan (SCORP) to remain eligible for grants from the federal Land and Water Conservation Fund. The SCORP divides Massachusetts into seven regional planning areas. Groton falls within the Northeastern Region, which includes most of Middlesex and Essex Counties. The Northeastern Region ranks second statewide for total population, fifth for total acres of open space and second for total number of parcels held as open space. The most recent SCORP (2006) evaluates statewide and regional needs for outdoor recreation facilities and estimates near-term future demands. Major issues in the SCORP that relate to Groton include resource protection, stewardship, education and information, partnerships, access, maintenance, innovative tools for land protection, and the protection and development of trails. While the state's

findings have to be considered in the context of the region as a whole, some findings may be useful to local planning in Groton.

For the Northeast Region overall, open space for conservation and passive recreation purposes exceeds that of other regions. Recreation activities with equal popularity in the Northeast Region and the state as a whole include swimming, walking, sightseeing, hiking, and fishing; activities notably more popular in the region include baseball, sunbathing, horseback riding, off-road vehicle driving, snowmobiling, boating (motorized), surfing, soccer, tot lots, and outdoor hockey. Groton provides resources for all of these pursuits, although the presence of off-road vehicles on Town conservation lands is an issue in the community. While the SCORP identifies activities that are less popular in the Northeast Region than in other regions, such as road biking, cross-country skiing, and running, these activities appear to be quite popular in Groton. The SCORP reports a high level of satisfaction with the region's wildlife conservation areas and agricultural resources, and some dissatisfaction with the lack of bikeways. As for activity needs, the region's residents place the highest priority on road biking, playground activity, swimming, walking, golfing, and basketball, and moderate priority on tennis, fishing, and mountain biking. These activities point to needs for more playgrounds, neighborhood parks, and golf courses, and better access to agricultural lands, lakes and ponds, and rivers and streams.

5) Special needs

Many Town-owned recreation facilities need improvements to comply with Section 504 accessibility requirements. For most facilities these improvements include constructing handicapped parking spaces and handicapped accessible paths and site improvements, such as re-grading. A detailed assessment of each facility can be found in Appendix C. These improvements should be incorporated into the Town's capital improvement plans for recreation and conservation properties as well as school facilities. The accessibility of trails requires additional consideration. Most trails in Groton are currently maintained in a natural wilderness state and lack parking. Improving the accessibility of trail resources would allow more residents to use these resources, but improvements would require significant resources to implement and maintain.

Additional needs include a town-wide compliance policy for the American with Disabilities Act (ADA) and recreational programming for the disabled. Groton's Commission on Accessibility should be involved in these efforts.

6) Community gardens

Despite local interest and effort, Groton has not been able to develop and sustain a community garden. Although groups such as Groton Local have expressed much enthusiasm for establishing a community garden, securing land for this activity has been difficult. While more common in urban environments where open space is scarce, a community garden in Groton would provide gardening opportunities for those with little or no land and also enhance the sense of community. As with any open space, there are maintenance challenges specific to community gardens, so planning for one would require a strategy not only for land acquisition and design, but also long-term management. Groton should review its developed and undeveloped Town-owned properties for suitability as community gardens. Important

criteria include a having a water source, suitable soils, and adequate space. Identifying properties in locations close to potential users (for example, near Groton's villages or residential neighborhoods) is also an important factor to consider. After a site is chosen, the Town should appoint a municipal representative or group to advocate for development of a chosen community garden site. Appointing Town staff or another Town Hall representative to serve as liaison with interested community groups and individuals will be important to the successful development and maintenance of a garden site.

C. Management Needs, Potential Change of Use

Managing Groton's wealth of open space and recreation resources requires substantial effort on behalf of the Town Conservation and Park Commissions. Effective resource management has become increasingly difficult given recent budgetary constraints, and Groton relies heavily on volunteers for many of its management efforts. This section outlines Groton's management needs related to conservation lands, recreation lands, trails, and administration and staffing.

1) Conservation land management

While Groton has successfully protected many parcels of conservation land, the properties need to be maintained in a sustainable and ecologically appropriate manner. Ideally, Groton should develop management strategies and plans tailored to each tract of open space to ensure that conditions such as invasive species and abutter encroachment do not compromise the fragile resources that comprise those landscapes. Groton Conservation Commission (GCC) members and volunteers have begun the labor-intensive process of visiting each parcel to document existing conditions and identify management concerns, and the Town may want to partner with local conservation groups to complete this effort and develop appropriate and site-specific management plans. This effort could also include coordination with neighboring towns to manage shared resources such as the Squannacook and Nashua Rivers. Due to the effort involved with developing management plans, the Town could consider securing professional services to complete these plans. In addition, the GCC may need to update its conservation land regulations as part of the process of developing property management plans.

The GCC is responsible for managing conservation lands. This is a difficult task given Groton's numerous CRs, many of which are located on small lots throughout town. The GCC has established a subcommittee of stewards to help monitor properties for compliance with the CR, abutter encroachment, and safety hazards. These stewards have been effective and the GCC may want to consider expanding the program. In addition, a Stewardship Committee, mostly composed of interested abutters to the individual properties has been established. This volunteer effort requires a Commission advocate to move forward and has sponsored such events as vernal pool and forestry management educational walks. This is, in part, set up with a Google group on which members can post unusual wildlife sightings or information of an environmental nature.

Since the 2005 *Open Space and Recreation Plan* Groton hired a Town Forester to assess the potential of forested parcels for sustainable forestry practices and to help develop sustainable forestry management plans for conservation and Water Department parcels. In the past, Groton residents have expressed concern about harvesting existing forests, so these types of activities on conservation land may trigger

public opposition. A public education campaign on the benefits of sustainable forest management and a transparent process to select parcels for sustainable management will be important to alleviate abutter concerns.

Groton's Conservation Administrator manages the Town's open space inventory, which includes public and private conservation parcels, municipal landholdings, and unprotected parcels owned by nonprofits and institutions. This inventory is continually updated. While the database is useful in its existing format, it should be expanded to include information on each parcel's resource value. This will allow the users to better understand the role each parcel plays in the larger ecosystem. Groton's Geographic Information System (GIS) should also be updated to incorporate this type of data.

In addition to an enhanced inventory of open space lands, Groton should also develop more detailed ecological inventories and analyses. Having an improved understanding of the town's ecological systems will help Groton identify the lands most important to ecological functions, which will help the Town prioritize lands for protection. The ecological inventory and analysis can also be used to assess the effectiveness of existing environmental regulation, such as the value of wetlands buffers in protecting sensitive ecological resources. If the existing regulations are found to be insufficient, the Town should consider modifying them to include alternate buffer zones or enhanced performance standards to protect key species and resource system functions.

2) Recreation land management

The Park Commission oversees the management, including maintenance and scheduling, of Groton's active recreation facilities. The private recreation groups that use these facilities do not pay the Town for use of the lands but periodically provide funding for improvements such as new lighting.

Preventing overuse of fields and limiting environmental impacts are important management concerns for Groton to maintain safe, high quality playing surfaces. As demand for Groton's playing fields increases, it will be even more important to protect them from overuse and to provide proper maintenance. Limiting excessive water use and fertilizer applications as well as identifying ways to reduce stormwater runoff can mitigate the environmental impacts of recreation lands.

While the Park Commission provides day-to-day management of Groton's recreation facilities, the Commission does not have the capacity to undertake long-term capital planning related to recreation resources. Long-term planning is an important need, once filled by the municipal recreation department, which is not currently being met. The Town should explore ways to address this need, through the creation of a Recreation Commission focused on recreation facility planning (but not necessarily recreation programming), or another mechanism.

3) Trail management

Groton has over 100 trails, which are managed and maintained by the volunteer Trails Committee. While these volunteers do an excellent job, it has been difficult to recruit new volunteers. In addition, some trails and sensitive habitat areas have been damaged by motorized vehicle use. The Trails Committee has worked with residents and the rider community to educate them about vehicle impacts. Riders need to be

directed to appropriate parcels where motorized vehicle use is allowed, but this is challenging since many riders tend to use properties near their own homes.

The Trails Committee has been actively working to map all of the trails in Groton. A number of maps are currently available to download from their website, as well as an interactive trail map: www.grotontrails.org. However, the Committee needs to better publicize these valuable resources. Respondents to the 2011 survey said that trail maps would be the most important resource to increase use of conservation and recreation lands, which is indicative of the lack of public knowledge about the existing maps.

4) Administration and staffing

Raising funds for land acquisition and conservation is a constant challenge. While Groton should continue to seek low-cost means to protect land, such as donations, CRs, and APRs, there are instances where outright acquisition is the only viable option for protecting a significant parcel. Toward these ends, the GCC must have funding available if the Town needs to respond quickly when a vulnerable landscape is threatened. Groton currently relies primarily on CPA revenue and the Conservation Fund to make these purchases. Town Meeting has been inconsistent



recently in authorizing the dedication of CPA revenue for the Conservation Fund. Some residents express concerns that the annual debt service on Surrenden Farms will exhaust much of the Town's CPA funding for the next several years, especially as the state match continues to decline. In addition to funding land acquisitions, the GCC has received a Federal grant through the Wildlife Habitat Incentive Program (WHIP) to manage a grassland area as early successional habitat. When this grant expires in 2013, the Town may need to seek alternative funding to continue this important work.

Much of Groton's conservation and recreation management is currently performed by volunteers. To better manage these resources, the Town should hire a dedicated land maintenance staff person. This position could take over some responsibilities currently undertaken by volunteers as well as ice damage cleanup, brush hogging, etc., which the Town currently outsources through small contracts. There is also a need for additional administrative support for the Conservation Commission.

Groton is fortunate to have conservation groups that work actively and successfully to protect open space, but these organizations often have their own priorities and do not coordinate their efforts. For example, despite a longstanding and generally positive relationship, Groton has not been able to convince NEFF to take steps to protect all of its large and critical landholdings through conservation restrictions. An umbrella organization could help coordinate the efforts of conservation organizations; a similar system has helped coordinate the efforts of Groton's historic preservation organizations.

8. GOALS AND OBJECTIVES

In this section the overarching goals identified in “Community Vision” (Section 6) are synthesized into specific goals and objectives that will drive the development of more specific recommendations in the “Five-Year Action Plan” (Section 9). The goals and objectives from the previous *Open Space and Recreation Plan* were revised based on the updated “Analysis of Needs” (Section 7), the recent master plan recommendations, and input from Town boards and staff and local residents. The following goals and objectives are not listed in rank order.

Goals	Objectives
1. Promote the preservation of Groton’s important water resources.	<ul style="list-style-type: none"> • Protect the 300-ft greenway along the Nashua and Squannacook Rivers. • Promote the preservation of groundwater resources. • Maintain and improve surface water quality. • Protect lakes and other water resources.
2. Promote the preservation of important land resources in Groton.	<ul style="list-style-type: none"> • Preserve lands that support agricultural uses and forestry management. • Protect lands and water resources of scenic value. • Preserve lands, including uplands, for conservation and natural purposes.
3. Provide recreational opportunities for all Groton residents.	<ul style="list-style-type: none"> • Expand recreational and educational program offerings. • Develop facilities to support programming and serve future growth areas of town. • Update facilities to meet Americans with Disabilities (ADA) requirements. • Explore special opportunities for recreational facilities.
4. Promote the efficient management and maintenance of the open space and recreation areas and structures of Groton.	<ul style="list-style-type: none"> • Improve management of conservation lands. • Investigate staffing needs from a management and maintenance perspective. • Implement strategies that will facilitate the care of recreation and conservation areas. • Implement sustainable forestry management practices.
5. Promote opportunities for the linkage of Groton’s open space.	<ul style="list-style-type: none"> • Work to link local open space and recreation areas to each other. • Work with neighboring towns to link adjacent open space and recreation areas.
6. Increase public awareness of natural resources.	<ul style="list-style-type: none"> • Educate the public about available recreational, cultural, and natural resources. • Instruct the public on best management practices to protect and enhance natural resources.
7. Assure adequate habitat and corridors for wildlife.	<ul style="list-style-type: none"> • Protect vital wildlife habitat and encourage biodiversity along wetlands and waterways. • Continue to connect protected habitats.

9. SEVEN-YEAR ACTION PLAN UPDATE

This action plan builds on the “Goals and Objectives” (Section 8) by developing specific strategies to be completed by responsible parties, and assigning each a timeframe in which to be completed. The actions listed below are essentially steps that need to be taken to accomplish the outlined objectives. The 2005 action plan was updated in 2010 and then again in 2012 with input from the Conservation and Park Commissions, Town staff, and the public. The action plan items are organized by goal and objective, corresponding with Section 8. While neither the goals and objectives nor the action items are presented in rank order, the action items in themselves suggest priority actions necessary to achieve each objective and the timeframes provide a sense of the immediacy of each action item. Many of the action items are ongoing in nature and will continue to be addressed from 2012 through 2019.

Map 8 illustrates the Action Plan elements that are geographically specific.

Goal	Objective	Action	Responsible Party	Timeframe
1. Promote the preservation of Groton's important water resources.	1.1. Promote the preservation of groundwater resources.	<ul style="list-style-type: none"> Track septic system failures, especially at Lost Lake and near well sites. 	Health	2012-2013
		<ul style="list-style-type: none"> Evaluate alternatives for sewerage areas with failed sewage disposal systems. 	Sewer, Lost Lake Feasibility Study Committees	2013-2017
		<ul style="list-style-type: none"> Acquire additional land around well sites included in DEP-delineated Zone IIs. 	Water, Conservation, Selectmen	Ongoing
		<ul style="list-style-type: none"> Continue to monitor landfill closures on the Nashua River and at Cow Pond Brook and consider maintaining as early successional grassland. 	Selectmen, Health	2012-2019
		<ul style="list-style-type: none"> Continue water conservation education and efforts, i.e., odd/even watering. 	Water	Ongoing
		<ul style="list-style-type: none"> Disseminate information about protecting private water wells, including the need for regular testing. 	Health	2013-2014
		<ul style="list-style-type: none"> Explore regional approaches to protect groundwater resources. 	Nashua River Watershed Association (NRWA), Conservation	Ongoing
		<ul style="list-style-type: none"> Consider emergency interconnection between Groton Water Department and West Groton Water District via Fitchs Bridge. 	Groton Water Dept., West Groton Water District, Selectmen, Greenway Committee	2015-2017
		<ul style="list-style-type: none"> Foster public education about pharmaceuticals getting into groundwater and surface water. 	Health, NRWA, Conservation	2013-2014
	1.2. Maintain and improve surface water quality.	<ul style="list-style-type: none"> Encourage development of comprehensive lake management plans for Great Ponds, particularly Lost Lake/Knops and Baddacook Ponds. 	Selectmen, Great Ponds Advisory Committee, Conservation	2013-2016
		<ul style="list-style-type: none"> Install boat washes at all formal State and Town boat launches. 	DCR, Sewer Commission, Conservation	2016

Goal	Objective	Action	Responsible Party	Timeframe
		<ul style="list-style-type: none"> Improve public access to and maintain the quality of the Nashua River, including the removal of invasive species. 	NRWA, Greenway, Conservation, ACEC Stewardship Committee, local groups	2013-2017
		<ul style="list-style-type: none"> Work regionally to improve water quality and access to the Squannacook River. 	Greenway, Conservation	Ongoing
		<ul style="list-style-type: none"> Provide incentives for farmers to keep natural vegetated buffers along rivers and streams. 	USDA Natural Resources Conservation Service, Conservation	2013-2019
		<ul style="list-style-type: none"> Continue volunteer water quality monitoring program on local streams and rivers to provide baseline data on stream health. 	NRWA	Ongoing
		<ul style="list-style-type: none"> Investigate need to appropriately manage land along waterways and water bodies. 	Conservation, DPW	Ongoing
	1.3 Protect lakes and other water resources	<ul style="list-style-type: none"> Emphasize acquisition of lands adjacent to wetlands, streams, and water bodies. 	Conservation	Ongoing
2. Promote the preservation of important land resources in Groton.	2.1. Preserve lands that support agricultural uses and forestry management.	<ul style="list-style-type: none"> Consider a Farmland and Open Space Overlay District. 	Planning, Assessors	Ongoing
		<ul style="list-style-type: none"> Continue to support funding of Conservation Fund to acquire open space and agricultural land through annual CPC application and other means. 	Selectmen, Conservation, Community Preservation Committee	Ongoing
		<ul style="list-style-type: none"> Encourage Community Supported Agriculture (CSA) programs and farmers' markets. 	Selectmen, Conservation	Ongoing
		<ul style="list-style-type: none"> Encourage participation in Ch. 61 special use tax program. 	Conservation, Greenway	2012-2013
		<ul style="list-style-type: none"> Develop and adopt Ch. 61 Right-of-First Refusal assignment procedure. 	Selectmen, Conservation	2013

Goal	Objective	Action	Responsible Party	Timeframe
		<ul style="list-style-type: none"> Identify and prioritize important agricultural parcels to preserve for future farmers. 	Conservation, Agricultural Commission	Ongoing
	2.2. Protect lands and water resources of scenic value.	<ul style="list-style-type: none"> Consider a Scenic Overlay District based on DEM 1982 Scenic Landscape Inventory. 	Planning	2013-2017
	2.3. Preserve lands, including uplands, for conservation and natural purposes.	<ul style="list-style-type: none"> Create and adopt criteria-based ranking system for open space acquisitions. 	Conservation	Ongoing
		<ul style="list-style-type: none"> Update prioritized list of parcels to target for acquisition, linking protection with identified rare and endangered wildlife habitat. 	Conservation, Planning, Trails	Ongoing
		<ul style="list-style-type: none"> Continue to negotiate for open space preservation during permitting processes. 	Planning, Conservation, Trails	Ongoing
		<ul style="list-style-type: none"> Continue to work with the Groton Conservation Trust on land protection efforts. 	Selectmen, Conservation	Ongoing
		<ul style="list-style-type: none"> Conduct public outreach to encourage and support key applications under Chapter 61, 61A , and 61B. 	Selectmen, Conservation	2014-2019
		<ul style="list-style-type: none"> Collaborate with land trusts and Conservation Commissions in adjoining towns, as well as the New England Forestry Foundation, Massachusetts Dept. of Fisheries and Wildlife, and MassAudubon in land protection efforts. 	Selectmen, Conservation	Ongoing
		<ul style="list-style-type: none"> Give priority to protection of land identified in the state BioMap to preserve biodiversity. 	Conservation	Ongoing
3. Provide recreational	3.1. Expand recreational and	<ul style="list-style-type: none"> Work to implement new programs desired by residents. 	Park, Selectman, Town Manager	Ongoing

Goal	Objective	Action	Responsible Party	Timeframe
opportunities for all Groton residents.	educational program offerings.	<ul style="list-style-type: none"> Consider merging parks and recreation functions into Park Commission. 	Selectmen, Park	Ongoing
		<ul style="list-style-type: none"> Explore reinstating municipal recreation department. 	Selectmen, Park	Ongoing
		<ul style="list-style-type: none"> Support nonprofits' and schools' efforts to incorporate environmental education into programs on conservation land or other natural areas. 	Conservation	Ongoing
		<ul style="list-style-type: none"> Separate soccer and baseball uses and develop additional fields at existing recreation areas. Study future uses of Hemlock Grove Park 	Park, Hemlock Grove Planning Committee	2012-2017
	3.2. Develop facilities to support programming and serve future growth areas of town.	<ul style="list-style-type: none"> Negotiate with Regional School System to utilize recreational facilities (soccer and baseball). 	Selectmen, Park	Ongoing
		<ul style="list-style-type: none"> Continue good working relationship with private schools for facility use. 	Selectmen, Park	Ongoing
		<ul style="list-style-type: none"> Target population and growth areas for development of neighborhood recreation facilities (Lost Lakes, E. Groton). 	Park, Planning	Ongoing
		<ul style="list-style-type: none"> Add lighting to appropriate fields for night use. 	Park, Highway	2013-2019
		<ul style="list-style-type: none"> Maintain Groton Pool & Golf Center as a recreation facility and open space. 	Groton Pool & Golf Center Dept., Selectmen	Ongoing
		<ul style="list-style-type: none"> Explore futures use and ownership of Groton Pool & Golf Center. 	Town Manager, Selectmen, Groton Pool & Golf Center Dept.	Ongoing
		<ul style="list-style-type: none"> Acquire additional land for active recreation fields. 	Selectmen, Park	Ongoing
		<ul style="list-style-type: none"> Explore options to address lack of recreation capital planning. 	Selectmen, Park	Ongoing

Goal	Objective	Action	Responsible Party	Timeframe
	3.3. Update facilities to meet Americans with Disabilities (ADA) requirements.	<ul style="list-style-type: none"> Incorporate Section 504 recommendations into capital improvements for Town recreation and conservation properties, as well as school associated facilities and complete. 	Selectmen, School, Commission on Accessibility	Ongoing
		<ul style="list-style-type: none"> Adopt ADA compliance policy. 	Conservation, Trails	2013
	3.4. Explore special opportunities for recreational facilities.	<ul style="list-style-type: none"> Explore developing a river walk along the Nashua and Squannacook Rivers. 	Selectmen, Nashua River Watershed Association, Greenway, Trails, Park, Conservation, Planning	Ongoing
		<ul style="list-style-type: none"> Explore opportunities to consolidate playing fields. 	Park	Ongoing
		<ul style="list-style-type: none"> Consider Fitchs Bridge for a trail connection between W. Groton and Groton, working with abutting landowners to develop a trail system. Explore funding opportunities for renovation of a pedestrian and equestrian crossing at the old Fitchs Bridge. 	Greenway, Conservation	2012-2015
4. Promote the efficient management and maintenance of the open space and recreation areas and structures of Groton.	4.1. Improve management of conservation lands.	<ul style="list-style-type: none"> Monitor conservation and conservation-restricted parcels for encroachment and abuse. 	Conservation, Trails	Ongoing
		<ul style="list-style-type: none"> Manage inappropriate use of public trails by motorized vehicles using public education, signage, and enforcement techniques. 	Conservation, Conservation Restriction Monitoring Sub-committee, Trails, Groton Conservation Trust, New England Forestry Foundation, Greenways Committee, Police	Ongoing
		<ul style="list-style-type: none"> Increase trail markings and signs. 	Conservation, Trails	2012-2015

Goal	Objective	Action	Responsible Party	Timeframe
	4.2. Investigate staffing needs from a management and maintenance perspective.	<ul style="list-style-type: none"> Study highway departmental staffing needs from park and conservation maintenance perspective. 	Selectmen, Highway, Conservation, Park	Ongoing
		<ul style="list-style-type: none"> Expand volunteer stewardship program of Town-owned conservation parcels. 	Conservation, Stewardship sub-committee	Ongoing
		<ul style="list-style-type: none"> Consider adding additional staffing to manage conservation lands and provide administrative support. 	Selectmen, Conservation	Ongoing
	4.3. Implement strategies that will facilitate the care of recreation and conservation areas.	<ul style="list-style-type: none"> Continue working with Park/Highway Dept. on periodic maintenance of Town conservation land. 	Conservation, Park, Highway	Ongoing
		<ul style="list-style-type: none"> Continue relationships with local groups that maintain conservation areas. 	Selectmen, Conservation, Trails, Greenway, Groton Conservation Trust	Ongoing
		<ul style="list-style-type: none"> Add automatic irrigation systems to Town fields without them. 	Park, Highway	Ongoing
		<ul style="list-style-type: none"> Seasonally convert Town Field basketball court to skating rink. 	Park	Ongoing
		<ul style="list-style-type: none"> Continue and expand Conservation Restriction Monitoring Sub-committee. 	Conservation	Ongoing
		<ul style="list-style-type: none"> Investigate use of low maintenance (i.e., drought tolerant) grasses for recreation fields to reduce irrigation and mowing needs. 	Park	Ongoing
		<ul style="list-style-type: none"> Consider the formation of neighborhood stewardship groups as part of the Planning Board permitting process. 	Conservation, Planning	Ongoing
		<ul style="list-style-type: none"> Support sustainable agricultural activities, including licenses, on cleared conservation land suitable for farming. 	Conservation, Agricultural, Sustainability	Ongoing

Goal	Objective	Action	Responsible Party	Timeframe
		<ul style="list-style-type: none"> Investigate funding opportunities for the management of invasives on conservation lands. 	Conservation	Ongoing
	4.4. Implement sustainable forest management practices.	<ul style="list-style-type: none"> Pursue sustainable forestry activities on Town-owned lands 	Conservation, Water Dept., Town Forester	Ongoing
5. Promote opportunities for the linkage of Groton's open space.	5.1. Work to link local open space and recreation areas to each other.	<ul style="list-style-type: none"> Identify and map areas that would help to complete the Town's trail system. 	Trails, Conservation	Ongoing
		<ul style="list-style-type: none"> Map trails that could be used as linkages to open space and gain permission for their use. 	Trails, Conservation	Ongoing
		<ul style="list-style-type: none"> Continue to acquire and link land along the Nashua and Squannacook Rivers. 	NRWA, Greenway, Conservation, Trails	Ongoing
		<ul style="list-style-type: none"> Investigate the protection of Massapoag Pond's shore line in Groton and Dunstable. 	Conservation, land trusts	Ongoing
	5.2. Work with neighboring towns to link adjacent open space and recreation areas.	<ul style="list-style-type: none"> Work with Pepperell and surrounding communities to obtain trail easements and preserve and protect areas adjoining The Throne (including Old County Road), Reedy Meadow, and Nashua River. 	Conservation, Trails, ACEC Stewardship	Ongoing
		<ul style="list-style-type: none"> Consider old railroad bed lines to link with adjoining communities, i.e., the Hollis branch and the Peterborough and Shirley branch of the Fitchburg line. 	Trails	Ongoing
		<ul style="list-style-type: none"> Collaborate with Dunstable to extend protection of the abandoned railroad bed known as the 'Red Line'. 	Conservation, Groton Conservation Trust, Dunstable Rural Land Trust and Conservation Commission, YMCA	Ongoing

Goal	Objective	Action	Responsible Party	Timeframe
		<ul style="list-style-type: none"> Implement a conservation and recreation land sign program to improve access and usage. 	Conservation, Trails	Ongoing
6. Increase public awareness of natural resources.	6.1. Educate the public about available recreational, cultural, and natural resources.	<ul style="list-style-type: none"> Develop and keep current a brochure locating recreation, historic, cultural and natural resources. Consider self-guided bike tours to highlight interesting areas. 	Conservation, Planning, Trails, Historic Commission	Ongoing
		<ul style="list-style-type: none"> Integrate list and locations of conservation areas and Town trails maps on Town website. 	Conservation, Trails, website	Ongoing
		<ul style="list-style-type: none"> Consider state resources available to create ecotourism brochure to market Groton to regional communities. 	Selectmen, Conservation, Groton Conservation Trust	Ongoing
		<ul style="list-style-type: none"> Develop a regular program of conservation walks and talks to encourage familiarity with available conservation land. 	Conservation, Trails	Ongoing
		<ul style="list-style-type: none"> Continue to produce trail maps for individual conservation parcels. 	Trails, Conservation	Ongoing
		<ul style="list-style-type: none"> Conduct public outreach for recreation areas and resources; publicize resources such as www.grotontrails.org 	Conservation, Trails	Ongoing
	6.2. Instruct public on best management practices to protect and enhance natural resources.	<ul style="list-style-type: none"> Conduct public outreach on best management practices. 	Conservation	2012-2019
7. Assure adequate habitat and corridors for wildlife.	7.1. Protect vital wildlife habitat and encourage biodiversity along wetlands and	<ul style="list-style-type: none"> Perform a wildlife and flora inventory for conservation parcels. 	Conservation	Ongoing

Goal	Objective	Action	Responsible Party	Timeframe
	waterways.	<ul style="list-style-type: none"> Identify likely wildlife corridors. 	Conservation, ACEC Stewardship, Groton Conservation Trust, State BioMap	Ongoing
		<ul style="list-style-type: none"> Develop and implement management plans for conservation parcels based on resources and species present. 	Conservation, Trails	Ongoing
		<ul style="list-style-type: none"> Consider state BioMap identifying Core Habitat and Supporting Landscapes when planning active management practices. 	Conservation, Stewardship sub-committee	Ongoing
		<ul style="list-style-type: none"> Consider signage and trail marking to re-direct hikers around sensitive wetland or wildlife resource areas. 	Conservation	Ongoing
	7.2. Continue to connect protected habitats.	<ul style="list-style-type: none"> Consider connections between wildlife habitats in land acquisition decisions. 	Conservation	Ongoing

10. PUBLIC COMMENTS

Letters of review from the Groton Planning Board, Board of Selectmen, and the Montachusett Regional Planning Agency follow.



TOWN OF GROTON

173 Main Street
Groton, Massachusetts 01450
(978) 448-1105
Fax: (978) 448-1113
e-mail: mcollette@townofgroton.org

Office of the
PLANNING BOARD

June 27, 2012

Conservation Commission
Town Hall
173 Main Street
Groton, MA 01450

Re: Town of Groton Open Space and Recreation Plan, 2012-2017

Dear Commission Members:

The Groton Planning Board voted unanimously at its meeting on June 14, 2012 to support the "Town of Groton Open Space and Recreation Plan, 2012-2017," prepared by Community Opportunities Group, dated June, 2012. The Open Space and Recreation Plan was prepared in conjunction with the Comprehensive Master Plan, adopted by the Planning Board on April 30, 2012 and endorsed by the Spring Town Meeting on May 7, 2012. The goals of the Open Space and Recreation Plan are consistent with the overall goals of the Comprehensive Master Plan.

The Planning Board supports the five-year action plan and commits to working closely with the Conservation Commission on the various action items. Additionally, the Goals and Objectives and Action Plan provide an important foundation for applications for Community Preservation funds by both the Conservation Commission and Park Department. The Planning Board supports the Conservation Commission's efforts to provide universal accessibility to all properties and programs.

Please let me know if it can be of further assistance.

Very truly yours,

Michelle Collette
Land Use Director/Town Planner



TOWN OF GROTON

173 Main Street
Groton, Massachusetts 01450-1237
Tel: (978) 448-1111
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Board of Selectmen

Stuart M. Schulman, *Chair*
Peter S. Cunningham, *Vice Chair*
John G. Petropoulos, *Clerk*
Joshua A. Degen, *Member*
Anna Eliot, *Member*

Town Manager
Mark W. Haddad

June 20, 2012

Conservation Commission
173 Main Street
Groton, MA 01450

Dear Members:

This letter is to inform you that the Board of Selectmen had an opportunity to review the Draft Open Space and Recreation Plan. The Board made the following comments on June 18, 2012.

Page 17: correct to reflect current planning

The Squannacook River Rail Trail is still in the planning/design phase. A 501 (c) non-profit, Squannacook Greenways, has been formed which will develop the SRRT in conjunction with the state Dept. of Conservation and Recreation which will enter into a lease agreement with the MBTA to create a trail along the abandoned Greenville branch of the Boston & Maine railroad. The trail will connect the northwest corner of Groton to Townsend, serving a combination of recreational and transportation needs. Approximately 0.9 miles of the Squannacook River Rail Trail is located in Groton, and 2.8 miles is located in Townsend to the northwest of Groton. The proposed multi-use path parallels Route 119 from Elm Street eastward from Townsend, connecting to Groton along the Squannacook River and Bertozzi Wildlife Management Areas.

Page 48: correct 'years' in last sentence to yeas

"The people shall have the right to clean air and water, freedown from excessive and unnecessary noise, and the natural, scenic, historic, and esthetic qualities of their environment; and the protection of the people in their right to the conservation, development and utilization of the agricultural, mineral, forest, water, air and other natural resources is hereby declared to be a public purpose... Lands and easements taken or acquired for such purposes shall not be used for other purposes or otherwise disposed of except by laws enacted by a two thirds vote, taken by years and nays of each branch of the general court."

Page 51: include biking as passive recreational opportunity

are protected through easements. Groton's trail system provides many recreation opportunities such as hiking, biking, running, cross-country skiing, and bird watching

Page 63: include biking as passive recreational activity

3) Groton has a large number of trails that allow for passive recreational activities such as hiking, biking, bird watching, and cross country skiing

978-448-1111 * Fax 978-448-1115 * selectmen@townofgroton.org

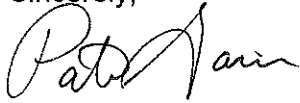
Comments of OSRP maps:

Regional context map; Old Greenville branch of B&M should be correctly labeled as Squannacook River Rail Trail (SRRT) not Mason, N.H. trail ext.

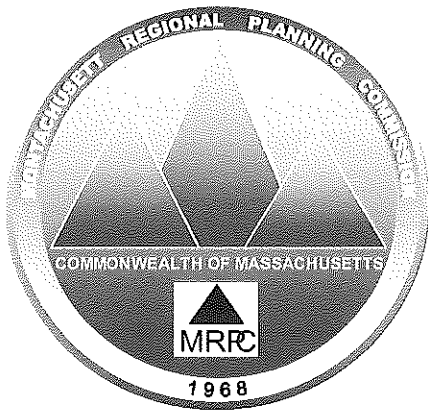
OSRP inventory; On page 10, Nashua River Rail Trail (NRRT) is managed by Dept. of Conservation & Recreation (DCR) not MA. Division of Forest & Parks.

Please let me know if you need any further information.

Sincerely,

A handwritten signature in black ink, appearing to read "Patrice Garvin". The signature is fluid and cursive, with the first name "Patrice" written in a larger, more prominent script than the last name "Garvin".

Patrice Garvin,
Executive Assistant to the Town Manager



MONTACHUSETT

(MRPC Letter Head)

REGIONAL PLANNING COMMISSION

1427R Water Street Fitchburg, Massachusetts 01420
(978) 345-7376 FAX (978) 348-2490 Email: mrpc@mrpc.org

Attention: Barbara Ganem, Conservation Administrator
Town Hall
173 Main Street
Groton, MA 01450

Dear Ms. Ganem

The Montachusett Regional Planning Commission's (MRPC) is responding for comment in regards to the Town of Groton's 2012 update of the Groton Open Space and Recreation Plan. The plan contains all the required sections according to the Open Space Guidebook published by the Executive Office of Energy and Environmental Affairs (EEOEA) and is well put together. However, within the plan we offer a few recommendations.

It was identified within the plan that according to MassGIS that there were no Environmental Justice populations. Within the Population Characteristics component of the plan it was identified that there were seniors who were economically vulnerable in comparison to the median income of the Town. Although this vulnerable population may not meet the definition of an Environmental Justice population we recommend that identifying these populations for your Environmental Justice Population Map and recording any outreach efforts made to this vulnerable population within the plan will help meet the requirement.

Please contact the MRPC to clarify or resolve any of the comments above at (978) 345-7376 Ext. 304 or by e-mail cfleck@mrpc.org. We look forward to working with you on this so the Town of Groton will have a complete updated Open Space and Recreation Plan very soon.

Sincerely,

Glenn Eaton

Executive Director



Caroline Edwards <cedwards@cogincorp.com>

Comments on Groton Open Space & Recreation Plan1 message

Judi Barrett (Boston Office) <jbarrett@cogincorp.com>

Thu, Jun 28, 2012 at 2:13 PM

To: geaton@mrpc.org

Cc: cedwards@cogincorp.com

Hi Glenn,

We're finishing up edits to Groton's draft open space plan today. We read MRPC's comments on the draft that Barbara Ganem sent you a few weeks ago, and we have a question. According to the *Open Space Planners Workbook* (2008), an EJ Populations map required if a community has EJ populations (see OS Workbook, page 9). We checked MassGIS's library some time ago and didn't find any EJ polygons (census block groups) in Groton, so we did not create that particular map. We thought about mapping some demographic data for Section 3C of the plan, but Groton's census block groups are really large. As a result, demographic mapping of Groton doesn't convey meaningful information. We considered census block-level demographics, too, but as you probably know, there are very few tables available for block-level mapping. For age data, the only table I've found is the one that reports population by under or over 18 (the apportionment file), not a breakdown by age cohorts. So, we don't have anything current that we can use to map locations of economically vulnerable seniors. By "current," I mean Census 2010 or the American Community Survey (ACS) Five-Year Estimates, 2006-2010. Does MRPC have any GIS tables that we can use for this purpose - something that's both recent and available in small enough geographies that the map will be useful for planning?

Thanks!

Judi Barrett

Director of Planning

Community Opportunities Group, Inc.

129 Kingston Street, Third Floor

Boston, MA 02111

Boston Office: (617) 542-3300, ext. 308

Home Office: (781) 834-7324

Cell: (617) 455-8641

www.cogincorp.com

11. REFERENCES

This plan draws on information provided by the Groton Conservation Commission, the Groton Park Commission, Town staff, and staff from local organizations as well as the following sources:

Federal Emergency Management Agency, *Flood Insurance Study and Flood Insurance Rate Maps for the Town of Groton, Massachusetts, Middlesex County*, June 4, 2010.

Groton Conservation Trust, www.gctrust.org.

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Table 5.5 Open Space Inventory

Parcel Name	Location	Acres	Ownership	Management Agency	Zoning	Current Use and Recreation Potential	Condition	Public Access	Type of Public Grant Accepted	Degree of Protection
(The) American Baptist Churches of Massachusetts	Prescott Street	237.00	Private	Grotonwood Camp	Institutional	Camp	Forested, multiple vernal pools	No		Private
Academy Hill Conservation Area*	Townsend Road	213.42	Public	Groton Conservation Commission	Residential Agricultural	Nature Study, Wildlife Habitat	Forester, Drainage Infrastructure	Yes		In Perpetuity
Allen Conservation Area	West Main Street	4.94	Public	Groton Conservation Commission	Residential Agricultural	Nature Study, Wildlife Habitat	Forested Wetland	Yes		In Perpetuity
Amanda's Way*	Off Lowell Road	3.45	Public	Water Department	Residential Agricultural	Walking Trails, Vernal Pools	Forested	Yes		In Perpetuity
Amelia Way*	Townsend Road	6.29	Public	Groton Conservation Commission	Residential Agricultural	Wildlife Habitat	Forested	Yes		In Perpetuity
Ames Meadows	Town Forest Road	17.40	Public	Groton Conservation Commission	Residential Agricultural	Walking Trails, Vista	Early successional field	Yes		In Perpetuity
Angus Acre*	Martins Pond Road	2.00	Nonprofit	Groton Conservation Trust	Residential Agricultural - Conservancy	Open Space	Forested	Yes		In Perpetuity
Baddacook Conservation Area	Martins Pond Road	41.30	Nonprofit	Groton Conservation Trust; CR held by Groton Conservation Commission	Residential Agricultural - Conservancy	Wildlife Corridor, Trail Link, Roadside View	Forested	Yes		In Perpetuity
Baddacook Fields (Shattuck Homestead)	Martins Pond Road	36.00	Public	Town of Groton	Residential Agricultural	Scenic Vista, Vernal Pools	Fields & Forest	Yes		CR Pending
Baddacook Pond Boat Launch	Martins Pond Road	0.24	Public (State)	Massachusetts Division of Wildlife and Fisheries	Residential Agricultural	Boating, Fishing, Picnicking, Skating, Swimming, Cross Country Skiing, Scenic Vista	Open	Yes		In Perpetuity
Baddacook Pond II*	Old Dunstable Road	52.40	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Rare Species Habitat, Wellhead Protection	Forested	Yes	Local Acquisitions For Natural Diversity (LAND) Grant	In Perpetuity
Baddacook Pond Well	Baddacook Pond Road	6.00	Public	Board of Water Commissioners	Public Use District	Wellfield Protection	Forested			In Perpetuity
Baddacook Woods	Lowell Road at Allen's Trail	3.30	Public	Groton Conservation Commission	Residential Agricultural	Wildlife Pond	Open	Yes		In Perpetuity
Baddacook Woods	Off Allen's Trail	14.78	Nonprofit	New England Forestry Foundation; CR held by Groton Conservation Commission	Residential Agricultural	Wildlife Habitat, Walking Trails	Forested			In Perpetuity

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Parcel Name	Location	Acres	Ownership	Management Agency	Zoning	Current Use and Recreation Potential	Condition	Public Access	Type of Public Grant Accepted	Degree of Protection
Balcom Estates	Along Spencer Circle off Hill Road	1.38	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Trail Connector	Forested	Yes		In Perpetuity
Bates Conservation Land	Old Ayer Road	38.50	Nonprofit	Groton Conservation Trust	Residential Agricultural	Hiking, Nature Study, Picnicking, Scenic Vista	Forested	Yes		
Bates-Blackman	Old Ayer Road		Nonprofit	Groton Conservation Trust; CR held by Trustees of Reservations	Residential Agricultural	Hiking, Nature Study, Picnicking, Scenic Vista	Wetland, Forest			In Perpetuity
Batten Woods	Off Forge Village Road	24.62	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Connects to Carmichael Swamp	Forested	Yes		In Perpetuity
Bernier Bissell Property	Townsend Road	17.62	Public	Town of Groton	Residential Agricultural	Nature Study, Wildlife Habitat, Trail Connector	Forested	Yes		In Perpetuity
Bertozi (Peter E.) Wildlife Management Area	Townsend Road	56.00	Public	Groton Conservation Commission	Residential Agricultural	Bridle Path, Camping, Fishing, Hiking, Hunting, Jogging, Nature Study, Picnicking, Wildlife Habitat, Cross Country Skiing	Forested	Yes		In Perpetuity
Bertozi (Peter E.) Wildlife Management Area	Townsend Road	142.00	Public (State)	Massachusetts Department of Natural Resources	Residential Agricultural - Conservancy	Bridle Path, Camping, Fishing, Hiking, Hunting, Jogging, Nature Study, Picnicking, Wildlife	Forested	Yes		In Perpetuity
Bissell Property	Townsend Road	50.00	Public	Town of Groton; CR held by Groton Conservation Commission and MA Department of Environmental Management (DEM)	Residential Agricultural	Nature Study, Trail Connector	Forested	Yes		In Perpetuity
Bixby (Charles) Conservation Area	West Main Street	4.20	Public	Groton Conservation Commission	Residential Agricultural	Nature Study, Wildlife Habitat	Forest, Wetlands	Yes		In Perpetuity
Blackman Conservation Land	Indian Hill Road	9.00	Nonprofit	Groton Conservation Trust	Residential Agricultural	Hiking, Nature Study, Scenic Vista, Wildlife Habitat	Meadow, Orchard, Woods	Yes		
Blackman Conservation Land	Indian Hill Road and Nate Nutting Road	48.00	Nonprofit	Groton Conservation Trust	Residential Agricultural	Trail, Nature Study, Forest Bells	Fields, Forest	Yes		
Blackman Conservation Restriction*	179 Indian Hill Road	30.28	Private	CR held by Groton Conservation Trust	Residential Agricultural	Trail		Yes		In Perpetuity

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Parcel Name	Location	Acres	Ownership	Management Agency	Zoning	Current Use and Recreation Potential	Condition	Public Access	Type of Public Grant Accepted	Degree of Protection
Blood parcel*	Off West Main Street	100.30	Public	West Groton Water District	Business 1 - Conservancy	Trail, Water Treatment Plant	Agricultural Fields, Forest	Yes	Drinking Water Supply Protection Grant	In Perpetuity
Boathouse Road*	Boathouse Road	0.05	Public	Groton Conservation Commission	Residential Agricultural	Buffer to bog (Sunken Gardens)	Vegetated			In Perpetuity
Boathouse Road/Bedigian*	Boathouse Road	0.07	Public	Groton Conservation Commission	Residential Agricultural	Buffer to bog (Sunken Gardens)	Vegetated			
Bridge Street Woods	Bridge Street	37.00	Nonprofit	New England Forestry Foundation	Residential Agricultural	Nature Study, Wildlife Habitat	Forested	Yes		
Brookfield Commons	Off Labbe Road	1.69	Public	Groton Conservation Commission	Residential Agricultural	Buffer	Wetlands			In Perpetuity
Brooks Orchard APR	Orchard Lane	113.50	Private	APR held by the Commonwealth of MA	Residential Agricultural - Conservancy	Agriculture	Forest, Hayfields	No	APR	In Perpetuity
Brooks Orchard Water Storage Tank	Martins Pond Road	4.00	Public	Board of Water Commissioners	Residential Agricultural	Water Protection	Open	Yes		In Perpetuity
Brookside Place Conservation Area	Whitman Road and Mara Lane	17.00	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Nature Study, Wildlife Habitat	Forested	Yes		In Perpetuity
Brownloaf	Brownloaf Road and Lowell Road	114.00	Public	Town of Groton	Residential Agricultural	Wildlife Habitat	Wetlands, Martins Pond Brook	No		
Bruner Land*	Off Old Dunstable and Rocky Hill Roads	36.70	Nonprofit	Groton Conservation Trust	Residential Agricultural - Conservancy	Stone Quarry, Wildlife Habitat, Nature Study	Forested	Yes		
Carmichael II Conservation Area	Madeline Drive	2.60	Public	Groton Conservation Commission	Residential Agricultural	Trail Connector	Forested	Yes		In Perpetuity
Carmichael Swamp Conservation Area	Hayden Road	48.50	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Nature Study, Wildlife Habitat, Scenic Vista	Wetlands			In Perpetuity
Cold Spring Pond	Off Longley Road	9.00	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Wildlife Habitat Trail Connector	Forested	Yes		In Perpetuity
Cow Pond Brook Conservation Area	Hoyts Wharf Road	33.00	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Nature Study, Wildlife Habitat	Wetlands			In Perpetuity
Cow Pond Brook Facilities	Cow Pond Brook Road	110.00	Public	Groton Board of Selectmen	Residential Agricultural - Conservancy	Playing Fields, Bridle Path, Picnicking, Organized Recreation,	Open	Yes		
Cronin Conservation Area	Longley Road	36.00	Public	Groton Conservation Commission	Residential Agricultural	Trails, Beaver Flowage	Forested, Wetlands	Yes		In Perpetuity
Cronin Land	Hoyts Wharf Road	4.00	Nonprofit	Groton Conservation Trust	Residential Agricultural - Conservancy	Cow Pond Brook Frontage	Forested	Yes		
Cronin-Massapoag Conservation Area	Island Pond Road	30.00	Nonprofit	Groton Conservation Trust	Residential Agricultural	Trails, Wildlife Habitat	Forested	Yes		

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Parcel Name	Location	Acres	Ownership	Management Agency	Zoning	Current Use and Recreation Potential	Condition	Public Access	Type of Public Grant Accepted	Degree of Protection
Crosswinds Conservation Land	Crosswinds Drive	49.01	Public	Groton Conservation Commission	Residential Agricultural	Hiking, Jogging, Nature Study, Wildlife Habitat, Cross Country Skiing	Forested, Early Successional Field	Yes		In Perpetuity
Cutler Field	Townsend Road	7.00	Public	Parks Department	Institutional	Playing Fields and Courts, Picnicking, Playground, Organized Recreation	Open	Yes		
Deerhaven	Off Lowell Road	16.41	Public	Groton Conservation Commission	Residential Agricultural	Water Resource Buffer, Trails, Wildlife Habitat	Forested, Early Successional Habitat	Yes		In Perpetuity
Deerhaven	Lowell Road	1.22	Public	Groton Conservation Commission	Residential Agricultural	Entrance to Subdivision	Landscaped	Yes		In Perpetuity
Deerhaven*	Allyson Park and Fawn Terrace Lane	22.24	Private	CR held by Groton Conservation Commission	Residential Agricultural	Trails, Early Successional Habitat	Open	Yes		In Perpetuity
Desrosiers	Acorn Path	0.18	Public	Groton Conservation Commission	Residential Agricultural	Trail Connector	Forested	Yes		In Perpetuity
Duck Pond Conservation Land	Lost Lake Drive	16.00	Nonprofit	Groton Conservation Trust	Residential Agricultural - Conservancy	Trails, Picnic Area	Forested & Wetlands	Yes		
Dunstable Rural Land Trust*	Dan Parker Road	28.00	Nonprofit	Dunstable Rural Land Trust	Residential Agricultural - Conservancy	Open Space	Forested	Yes		In Perpetuity
Eldridge Conservation Area	Pine Trail	0.10	Public	Groton Conservation Commission	Residential Agricultural	Open Space	Forested	Yes		In Perpetuity
Eliades Conservation Land	Pacer Way and Smith Street	13.25	Public	Groton Conservation Commission	Residential Agricultural	Trail, Water Resource Buffer	Hayed Field, Forest	Yes		In Perpetuity
Eliades*	91 Culver Road	1.60	Private	CR held by Groton Conservation Commission	Residential Agricultural	Buffer to James Brook	Forested	No		In Perpetuity
Farmers and Mechanics Conservation Area	Jenkins Road	19.50	Public	Groton Conservation Commission	Official Open Space	Bridle Path, Hiking, Jogging, Nature Study, Picnicking, Wildlife Habitat, Cross Country Skiing	Forested	Yes		In Perpetuity
Fitchs Bridge Estates*	Wallace Road	1.01	Public	Groton Conservation Commission	Residential Agricultural	Trail	Abandoned Railroad Bed	Yes		In Perpetuity
Fitch-Woods	off McLains Woods Road	29.00	Nonprofit	Groton Conservation Trust	Residential Agricultural	Trails, Wildlife Habitat	Forested	Yes		
Fitch-Woods (Perry Donation)	McLains Woods Road	6.67	Nonprofit	Groton Conservation Trust	Residential Agricultural	Trails, Wildlife Habitat	Forested	Yes		
Flat Pond	Townsend Road	12.70	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Boating, Fishing, Nature Study, Skating, Wildlife Habitat	Wetland	Yes		In Perpetuity
Flavell Crossing Conservation Area	Lowell Road	106.00	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Wildlife Corridor, Trail Link	Forested	Yes		In Perpetuity

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Parcel Name	Location	Acres	Ownership	Management Agency	Zoning	Current Use and Recreation Potential	Condition	Public Access	Type of Public Grant Accepted	Degree of Protection
Flavell Road Conservation Area	Lowell Road	1.90	Public	Groton Conservation Commission	Residential Agricultural	Trail Connector	Forest, Wetlands	Yes		In Perpetuity
Fletcher Hill Conservation Area	Boston Road	4.40	Public	Groton Conservation Commission	Residential Agricultural	Connects to Stonebridge Recreation Area	Forested	Yes		In Perpetuity
Fletcher Hill Conservation Area	Corner Fletcher Hill Lane and Rt. 225	0.41	Public	Groton Conservation Commission	Residential Agricultural	Buffer	Forested	Yes		In Perpetuity
Floyd Conservation Area	Martin's Pond Road	54.70	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Nature Study, Wildlife Habitat	Wetlands, Forest	Yes		In Perpetuity
Fuccillo Conservation Area*	Lowell Road	6.74	Public	Groton Conservation Commission	Residential Agricultural	Wildlife Habitat, Trail, Nature Study, Scenic Vista	Wetlands, Forest	Yes	Local Acquisitions For Natural Diversity (LAND)	In Perpetuity
Gamlin Crystal Spring*	Old Dunstable Road	150.00	Nonprofit	Groton Conservation Trust; CR held by Mass Fish & Game Dept.	Residential Agricultural - Conservancy	Wildlife Corridor, Nature Study, Trails	Forest, Wetlands	Yes		In Perpetuity
Gamlin Picnic Site	Fitch's Bridge Road	1.00	Nonprofit	Groton Conservation Trust	Residential Agricultural	Boating, Fishing, Picnicking, Scenic Vista	Forest	Yes		
GDRSD High School	Chicopee Row	73.50	Public	Groton Dunstable Regional School District; CR held by Groton Conservation Commission	Residential Agricultural - Conservancy	Trail, Wildlife Habitat, Nature Study	Forested, Early Successional Fields	Yes		In Perpetuity
Genthner Woods	Nutting Road	5.00	Nonprofit	Groton Conservation Trust	Residential Agricultural - Conservancy	Wildlife Habitat, Nature Study	Forested	Yes		
Gibbet Hill LLC*	Martins Pond Road	2.00	Private	CR held by Groton Conservation Trust	Residential Agricultural	Agriculture	Field	No		In Perpetuity
Gibbet Hill Water Storage Tank	Lowell Road	1.50	Public	Board of Water Commissioners	Public Use District	Trail Connector, Scenic Vista	Open	Yes		In Perpetuity
Gibbet/Angus Hills	Lowell, Martins Pond, Schoolhouse and Shattuck Roads	250.00	Private	CR held by Groton Conservation Commission and Department of	Residential Agricultural - Conservancy	Scenic Views (Drumlin Hills), Trails	Forest, Field, Drumlins	Yes		In Perpetuity
Gilson Conservation Area	Route 119 and Gay Road	28.00	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Nature Study, Wildlife Habitat	Forested Wetlands			In Perpetuity
Gilson Estates	Gay Road	4.10	Public	Groton Conservation Commission	Residential Agricultural	Nature Study, Wildlife Habitat	Forested Wetlands			In Perpetuity
Groton Cemetery Association	Chicopee Row	51.67	Nonprofit	Groton Cemetery Association	Institutional	Cemetery	Landscaped	Yes		
Groton Hills Conservation Area	Kaileys Way	32.00	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Connector, Wildlife Corridor	Forested			In Perpetuity
Groton Place	West Main Street	54.00	Nonprofit	New England Forestry Foundation	Institutional	Bridle Path, Hiking, Jogging, Nature Study, Picnicking, Wildlife Habitat, Cross Country Skiing	Forest, Frontage on Nashua River	Yes		

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Parcel Name	Location	Acres	Ownership	Management Agency	Zoning	Current Use and Recreation Potential	Condition	Public Access	Type of Public Grant Accepted	Degree of Protection
Groton Pool and Golf Center	Boston Road	113.00	Public	Town of Groton/Country Club Authority	Residential Agricultural	Golf Course, Tennis Courts, Pool, Outdoor Pavilion, Function Hall, Picnicking, Swimming, Organized Recreation	Landscaped	Open to public for fee		
Groton Woods Conservation Area	Duck Pond Drive	116.73	Public	Groton Conservation Commission	Residential Agricultural	Multiple Trail Connectors	Forest, Wetlands, Frontage on Duck Pond			In Perpetuity
Gustin*	Mohawk Trail	0.05	Nonprofit	Groton Conservation Trust	Residential Agricultural	Open Space	Forest			In Perpetuity
Half Moon Swamp	Indian Hill Road	15.00	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Nature Study, Wildlife Habitat	Forested			In Perpetuity
Hawtree Way	Chicopee Row and Raddin Road	24.00	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Trail Connector, Nature Study, Wildlife Habitat	Forested			In Perpetuity
Hayes Woods	Pepperell Road at Maple Avenue	47.00	Nonprofit	Groton Conservation Trust; CR held by Groton Conservation Commission and DEM	Residential Agricultural - Conservancy	Wetlands, Beaver Ponds	Forested	Yes		In Perpetuity
Hazel Grove (Fairgrounds)	Jenkins Road	13.00	Public	Parks Department	Public Use District	Equestrian Racetrack, Bridle Path, Horse Boarding, Hiking, Jogging, Nature Study, Picnicking, Wildlife Habitat, Cross Country Skiing	Open, Forest	Yes		In Perpetuity
Hemlock Grove	Fox Run	6.50	Public	Groton Conservation Commission	Residential Agricultural	Trails, Wildlife Habitat, Nature Study	Forested	Yes		
Hillbrook (formerly Priest) Orchard	Old Ayer Road	71.00	Private	Rosenberg	Residential Agricultural	Agriculture	Farmed	No	APR	In Perpetuity
Hollingsworth (Valentine) Conservation Area	Squannacook River	3.00	Nonprofit	Groton Conservation Trust	Official Open Space	Wildlife Corridor	Forested	Yes		In Perpetuity
Hurd	Rt. 119 and Skyfield Drive	32.72	Public	Groton Conservation Commission	Residential Agricultural	Trail Connector	Field, Forest	Yes	State Self-Help Grant	In Perpetuity
Indian Hill Rd./Reynolds	Indian Hill Road	14.84	Nonprofit	Groton Conservation Trust	Residential Agricultural - Conservancy	Nature Study, Wildlife Habitat	Forested Wetlands			In Perpetuity
Integrity Estates	Off Pepperell Road	5.63	Public	Groton Conservation Commission	Residential Agricultural	Trails, Wildlife Habitat	Forest	Yes		In Perpetuity
James River Greenway	Fitch's Bridge Road	1.40	Public	Groton Conservation Commission	Residential Agricultural	Nature Study, Wildlife Habitat	Nashua River Frontage	Yes		In Perpetuity
Johnston Land	Maple Avenue	15.56	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Trail connector, Wildlife Habitat, Nature Study	Power Easement, Forested			In Perpetuity

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Parcel Name	Location	Acres	Ownership	Management Agency	Zoning	Current Use and Recreation Potential	Condition	Public Access	Type of Public Grant Accepted	Degree of Protection
Kemp Woods	Kemp Street	85.00	Nonprofit	New England Forestry Foundation	Residential Agricultural	Forest Products, Wildlife, Recreation, Bridle Path, Hiking, Jogging, Nature Study, Picnicking, Wildlife	Forested	Yes		
Keyes (Phebe R.) Woods	Peabody and Higley Streets	58.00	Nonprofit	New England Forestry Foundation	Residential Agricultural - Conservancy	Forest and Agricultural products, Forestry Demonstrations, Wildlife Habitat, Trails	Forest, Wetlands	Yes		
Kiley CR*	Lowell Road	12.00	Public	Groton Water Department	Conservancy	Wetlands, Aquifer Protection	Forest, Wetlands			In Perpetuity
Knops Pond Island	Knops Pond	0.26	Public	Groton Conservation Commission	Residential Agricultural	Boating, Picnicking, Scenic Vista	Wooded	Yes		In Perpetuity
Knowles Siding	Off Pleasant Street	1.18	Public	Groton Conservation Commission	Residential Agricultural	Open Space	Forested	Yes		In Perpetuity
Knowles Siding	Off Pleasant Street	2.05	Public	Groton Conservation Commission	Residential Agricultural	Open Space	Forest, Open	Yes		In Perpetuity
Labbe Road	Labbe Road	0.24	Public	Groton Conservation Commission	Residential Agricultural	Wildlife Habitat	Wetlands			In Perpetuity
Lawrence (Amory A.) Playground	Broadmeadow Road	14.40	Public	Parks Department	Public Use District	Playing Fields and Courts, Picnicking, Playground, Organized Recreation	Recreation	Yes		
Lawrence Homestead Conservation Restriction	Route 225	29.95	Nonprofit	Lawrence Homestead Trust	Residential Agricultural	Agriculture	Field			In Perpetuity
Lawrence Land	Off Townsend Road	42.79	Nonprofit	Groton Conservation Trust	Residential Agricultural - Conservancy	Trails, highest point on The Throne	Forested	Yes		In Perpetuity
Lawrence Park Conservation Area	Fox Run	11.77	Public	Groton Conservation Commission	Residential Agricultural	Nature Study, Wildlife Habitat, Trail Connections	Forested	Yes		In Perpetuity
Lawrence Woods	Riverbend Drive	26.60	Nonprofit	Groton Conservation Trust	Residential Agricultural	Bridle Path, Hiking, Jogging, Wildlife Habitat, Cross Country Skiing	Forested	Yes		
Longley Estates I Conservation Area	Longley Road	21.81	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Wildlife Corridor, Trail Connectors	Forested	Yes		In Perpetuity
Longley Estates II Conservation Area	Sandy Hill Road	44.50	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Hiking, Nature Study, Wildlife Habitat, Trail Connectors	Forested	Yes		In Perpetuity
Lost Lake Boat Ramp	Pine Trail	0.57	Public (State)	Commonwealth of Massachusetts	Residential Agricultural	Boat Ramp	Open	Yes		In Perpetuity
Lost Lake Recreation Area	Mostly East of Lost Lake	60.07	Nonprofit	Groton Conservation Trust	Residential Agricultural	Multiple parcels scattered throughout	Forested	Yes		
Lyman Property	Townsend Road	95.00	Private	CR held by Groton Conservation Commission	Residential Agricultural	Wellfield Protection	Field, Forest	No		In Perpetuity

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Parcel Name	Location	Acres	Ownership	Management Agency	Zoning	Current Use and Recreation Potential	Condition	Public Access	Type of Public Grant Accepted	Degree of Protection
Macys' Fen	Martins Pond Road	14.00	Nonprofit	Groton Conservation Trust	Conservancy	Nature Study, Wildlife Habitat, Resource Buffer	Wetlands, Forest			
Martins Pond Brook Conservation Land	Lost Lake Drive	15.13	Public	Groton Conservation Commission	Conservancy	Nature Study, Scenic Vista, Wildlife Habitat	Wetland			
Martins Pond Brook Outlet*	Martins Pond Road	1.12	Nonprofit	Groton Conservation Trust	Residential Agricultural - Conservancy	Buffer to Martins Pond Brook, Wildlife Habitat, Nature Study	Wetland			
Mason Back 100*	Old Dunstable Road	137.01	Nonprofit	Groton Conservation Trust	Residential Agricultural - Conservancy	Wildlife Habitat, Historic Cart Paths, Stone Cellar Holes, Trail Connectors	Forest, Wetland	Yes		
Mass Audubon/Rocky Hill Wildlife Sanctuary*	Off Boston Rd./Rt. 119	421.31	Nonprofit	Mass Audubon Society; CR held by Groton Conservation Commission	Residential Agricultural - Conservancy	Wildlife Corridor & Habitat, Nature Study, Trails	Forest, Power Line Easement, Wetlands	Yes		In Perpetuity
Mass Audubon/Rocky Hill Wildlife Sanctuary*	Off Indian Hill Road	16.00	Nonprofit	Mass Audubon Society; CR held by Groton Conservation Commission	Residential Agricultural - Conservancy	Wildlife Corridor	Forest, Wetlands	Yes		In Perpetuity
Massachusetts Institute of Technology Haystack Observatory	Hoyts Wharf Road	218.57	Nonprofit	Massachusetts Institute of Technology (MIT)	Official Open Space	Observatory	Forest	No		
MBTA	W. Groton	46.89	Public (State)	Massachusetts Bay Transportation Authority (MBTA)	Residential Agricultural	Abandoned Railroad Bed	Open			
MBTA	W. Groton	7.20	Public (State)	Massachusetts Bay Transportation Authority (MBTA)	Residential Agricultural	Abandoned Railroad Bed	Open			
McCarthy Drive	Off Lowell Road	5.30	Public	Groton Conservation Commission	Residential Agricultural	Trail Connector	Forest	Yes		In Perpetuity
McLains Woods Conservation Area	McLain's Woods Road	32.74	Public	Groton Conservation Commission	Residential Agricultural	Hiking, Wildlife Habitat	Forest	Yes		In Perpetuity
Meadowbrook Conservation Area	Nashua Road	20.00	Public	Groton Conservation Commission	Residential Agricultural	Water Resources	Forest	Yes		In Perpetuity
Moors Schoolhouse Site	Farmers Row	3.00	Nonprofit	Groton Conservation Trust	Residential Agricultural	Historic site	Wooded	Yes		
Moose Trail*	Between 15 and 21 Moose Trail	0.02	Private	CR held by Groton Conservation Commission	Residential Agricultural	Turtle Corridor	Open	No		In Perpetuity
Nashua River Rail Trail	North Main and Pleasant Streets	66.40	Public (State)	Massachusetts Department of Conservation and Recreation	Residential Agricultural	Trail, Biking, Hiking, Jogging, Horseback Riding, Rollerblading	Varied Landscape	Yes		In Perpetuity
Nashua River Shore	Shirley Road	10.00	Public	Board of Water Commissioners	Residential Agricultural	Future public water well	Forested	Yes		In Perpetuity
Nashua Road Property	Nashua Road	14.00	Public	Town of Groton	Residential Agricultural	Proposed Housing	Forest, Wetlands	No		
Norris Property	Off Pepperell Road	55.00	Public	Town of Groton; CR held by Groton Conservation Commission and MA DEM	Residential Agricultural	Walking Trails, Nature Study, Wildlife Corridor	Forest, Wetlands	Yes		In Perpetuity

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Parcel Name	Location	Acres	Ownership	Management Agency	Zoning	Current Use and Recreation Potential	Condition	Public Access	Type of Public Grant Accepted	Degree of Protection
Northwoods Conservation Area	Longley and Nashua Roads	15.23	Public	Groton Conservation Commission	Residential Agricultural	Trails, Wildlife Habitat	Forest, Wetlands	Yes		In Perpetuity
O'Neill Way	North Main Street	2.31	Public	Groton Conservation Commission	Residential Agricultural	Wildlife Meadow	Field	Yes		In Perpetuity
O'Hara*	Nashua Road	1.00	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Wildlife Habitat, Nature Study	Wetlands			In Perpetuity
Old Burying Ground	Hollis Street	4.00	Public	Parks Department	Official Open Space	Cemetery		Yes		In Perpetuity
Old Mill Conservation Area	Squannacook River	5.00	Public	Groton Conservation Commission	Business 1	Located on Squannacook River	Forested	Yes		In Perpetuity
Old Town Dump	Nod Road	40.00	Public	Board of Health	Public Use District	Wildlife Habitat, Nature Study	Forest, Early Successional Field			
O'Neill APR	Whitman Road	80.00	Private	APR held by Commonwealth and Groton Conservation Commission	Residential Agricultural	Agriculture, Woodlands	Orchard	No	APR	In Perpetuity
O'Neill APR	Old Ayer Road	28.00	Private	APR held by Commonwealth and Groton Conservation Commission	Residential Agricultural	Agriculture	Orchard	No	APR	In Perpetuity
O'Neill APR	Higley Street and Farmers Row	45.00	Private	APR held by Commonwealth and Groton Conservation Commission	Residential Agricultural - Conservancy	Agriculture	Orchard	No	APR	In Perpetuity
Petapawag Boat Launch	Nod Road	3.00	Public	Groton Conservation Commission	Residential Agricultural	Boating, Fishing, Nature Study, Picnicking, Wildlife Habitat	Wooded Park on the Nashua River	Yes		In Perpetuity
Priest (Richard F.) Memorial Area	Whiley Road	5.30	Public	Groton Conservation Commission	Residential Agricultural	Hiking, Nature Study, Wildlife Habitat, Cross Country Skiing	Forest	Yes		In Perpetuity
Priest Monument	Whiley Road	0.02	Public	Groton Conservation Commission	Residential Agricultural	Monument	Forest	Yes		In Perpetuity
Red Line	Between Flavell Road and Cow Pond Brook Road	3.80	Public	Groton Conservation Commission	Residential Agricultural	Connector	Forest	Yes		In Perpetuity
Red Line Path	Bridge Street	14.00	Nonprofit	Groton Conservation Trust	Residential Agricultural	Connector	Forest	Yes		
Redskin Trail*	Between 48 and 52 Redskin Trail	0.14	Public	Groton Conservation Commission	Residential Agricultural	Open Space	Frontage on Lost Lake/Knops Pond	Yes		In Perpetuity
Reedy Meadow Conservation Area*	Reedy Meadow	75.00	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Wildlife Habitat, Nature Study	Wetlands			In Perpetuity

Table 5.5 Open Space Inventory

Parcel Name	Location	Acres	Ownership	Management Agency	Zoning	Current Use and Recreation Potential	Condition	Public Access	Type of Public Grant Accepted	Degree of Protection
Reedy Meadow Road*	Between 92 and 108 Reedy Meadow Road	1.88	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Wildlife Habitat, Nature Study	Wetlands			In Perpetuity
Reynolds Tract*	Indian Hill Road	18.00	Nonprofit	Groton Conservation Trust	Residential Agricultural - Conservancy	BioMap Core Habitat	Wetlands, Forest			
Rich (J. Harry) State Forest	Nod Road	506.00	Public (State)	Massachusetts Division of Forests and Parks	Residential Agricultural - Conservancy	Boating, Bridle Path, Camping, Hiking, Jogging, Nature Study, Wildlife Habitat, Cross Country Skiing, Tree Farm	Forest	Yes		In Perpetuity
Ridgewood	Off Gay Road at Whitaker Lane	35.00	Private	The American Baptist Churches of Massachusetts	Institutional	Wildlife Habitat, Nature Study	Forest, Power Easement			CR Pending
Riley Land	Nate Nutting Road	6.49	Nonprofit	Groton Conservation Trust	Residential Agricultural - Conservancy	Wildlife Habitat, Nature Study	Forest	Yes		
Ripley (Harrison S.) Forest	Martin's Pond Road	69.50	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Hiking, Nature Study, Wildlife Habitat, Cross Country Skiing	Forest	Yes		In Perpetuity
Rocky Hill (Future Water Tank Site)	Sandy Pond Road	1.85	Public	Board of Water Commissioners	Public Use District	Wildlife Corridor	Forest			In Perpetuity
Rocky Hill Conservation Land*	Quail Ridge and Robin Hill Roads	17.35	Public	Groton Conservation Commission	Residential Agricultural	Nature Study, Wildlife Habitat	Forest	Yes		In Perpetuity
Sabine Memorial Woods	West Groton Road	10.00	Nonprofit	Groton Conservation Trust	Residential Agricultural - Conservancy	Bridle Path, Camping, Hiking, Jogging, Wildlife Habitat, Cross Country Skiing	Forest	Yes		
Sabine Woods	West Main Street	146.00	Nonprofit	New England Forestry Foundation	Residential Agricultural	Managed Forest, Bridle Path, Hiking, Jogging, Nature Study, Picnicking, Wildlife Habitat, Cross Country Skiing	Forest	Yes		
Sampas Conservation Area*	Longley Road	11.00	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Woodland, Connector	Forested Wetlands			In Perpetuity
Sargisson Beach	Whiley Road	19.00	Public	Groton Conservation Commission	Residential Agricultural	Beach, Hiking, Fishing, Nature Study, Picnicking, Organized Recreation, Skating, Swimming, Wildlife Habitat, Cross Country Skiing	Forested	Yes		In Perpetuity
Sawtell Conservation Area	Sawtell Drive	30.00	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Connector, Wildlife Habitat, Nature Study	Forested	Yes		In Perpetuity
Shattuck Well	Martins Pond Road and Lowell Road	66.00	Public	Board of Water Commissioners	Residential Agricultural - Conservancy	Aquifer Protection, Wildlife Habitat	Forested	Yes	State Aquifer Land Acquisition Funding	In Perpetuity

Table 5.5 Open Space Inventory

Parcel Name	Location	Acres	Ownership	Management Agency	Zoning	Current Use and Recreation Potential	Condition	Public Access	Type of Public Grant Accepted	Degree of Protection
Shepley Hill	Sand Hill Road	72.00	Nonprofit	Groton Conservation Trust	Residential Agricultural - Conservancy	Trails, Bridle Path, Hiking, Nature Study, Scenic Vista, Cross Country Skiing	Forested	Yes		In Perpetuity
Skinner Forest	Duck Pond Drive	123.00	Nonprofit	Groton Conservation Trust	Residential Agricultural - Conservancy	Bridle Path, Hiking, Nature Study, Wildlife Habitat, Cross Country Skiing	Forested	Yes		
Skitapet Conservation Land	Spruce Road	50.97	Nonprofit	Groton Conservation Trust	Residential Agricultural	Bridle Path, Hiking, Nature Study, Scenic Vista, Wildlife Habitat, Cross Country Skiing	Forested	Yes		
Sorger	Hemlock Park Drive	24.00	Private	CR held by Groton Board of Water Commissioners	Residential Agricultural - Conservancy	Aquifer Protection	Forested, Agricultural Use		Aquifer Land Acquisition Grant	In Perpetuity
Squannacook River Picnic Site	Townsend Road	3.40	Public	Groton Conservation Commission	Residential Agricultural	Picnicking	Forested	Yes		In Perpetuity
Squannacook River Wildlife Management Area	Town Forest Road	16.00	Public (State)	Massachusetts Division of Wildlife and Fisheries	Residential Agricultural	Fishing, Hiking, Hunting, Jogging, Wildlife Habitat	Forested	Yes		In Perpetuity
Squannacook Sportsmen's Club	West Main Street	7.00	Nonprofit	Shakerton Foundation	Residential Agricultural	Nature Study, Trail, Wildlife Habitat	Wetland, Forest	No		Term Limited
Starr (Milton) Land	Townsend Road	10.96	Public	Groton Conservation Commission	Residential Agricultural	Wildlife Corridor, Nature Study	Forested Wetlands			In Perpetuity
Still Meadow Conservation Restriction	Nashua Road	31.07	Nonprofit	Groton Land Foundation; CR held by Groton Conservation Commission	Residential Agricultural - Conservancy	Trail, Wildlife Habitat, Nature Study	Forest, Meadow, Field	Yes		In Perpetuity
Stone Property	Farmers Row	20.88	Private	CR held by Groton Conservation Trust	Residential Agricultural	Scenic Views, Open Space	Agricultural Fields	No		In Perpetuity
Stonebridge Conservation Area	Forge Village Road	0.24	Public	Groton Conservation Commission	Residential Agricultural	Connector	Forest	Yes		
Stonebridge Farm Recreation Area	Stonebridge Way	11.00	Public	Town of Groton	Residential Agricultural	Playing Fields	Woodland	Yes		In Perpetuity
Surrenden Farm East/The General Field*	Shirley Road and Farmers Way	146.00	Nonprofit	Groton Conservation Trust; CR held by Groton Conservation Commission	Residential Agricultural	Agriculture, Trails, Wildlife Habitat	Agricultural Fields, Forest	Yes	CR purchased w/Self-Help grant	In Perpetuity
Surrenden Farm West (South Parcel)*	Shirley Road and Farmers Way	25.40	Public	Town of Groton; CR held by the Mass. Dept. of Fish & Game	Residential Agricultural	Wildlife Habitat	Forest, Wetlands	Yes	Mass. Dept. of Fish & Game	In Perpetuity
Surrenden Farm West*	Shirley Road	159.65	Public	Town of Groton, CR held by the Dept. of Fish & Game	Residential Agricultural	Wildlife Habitat, Trails, Nature Study, Agriculture	Forest, Fields, Wetlands	Yes	Mass. Dept. of Fish & Game	In Perpetuity
Taisey Conservation Restriction	Riverbend Drive	25.40	Private	CR held by Groton Conservation Commission	Residential Agricultural	Trail Connectors, Wildlife Habitat	Forest, Wetlands	Yes		In Perpetuity

Table 5.5 Open Space Inventory

Parcel Name	Location	Acres	Ownership	Management Agency	Zoning	Current Use and Recreation Potential	Condition	Public Access	Type of Public Grant Accepted	Degree of Protection
Taisey Conservation Restriction	Riverbend Drive	45.00	Private	CR held by Groton Conservation Commission	Residential Agricultural	Trail Connectors, Wildlife Habitat	Forest, Wetlands	Yes		In Perpetuity
Taplin Wildlife Sanctuary	Lowell Road	5.00	Nonprofit	Groton Conservation Trust	Residential Agricultural - Conservancy	Wildlife Habitat, Trail, Nature Study	Frontage on Baddacook Pond	Yes		In Perpetuity
Taplin/Lost Lake Land	Off Lost Lake Drive	70.00	Nonprofit	Groton Conservation Trust	Residential Agricultural					
The Elms (Bryan Conservation Restriction)	Mill, Pleasant and West Streets	5.50	Private	CR held by Groton Conservation Trust	Residential Agricultural	House and Grounds	Landscaped	No		In Perpetuity
Throne Hill I & II	Pepperell Road	119.50	Nonprofit	Groton Conservation Trust; CR held by Groton Conservation Commission & DEM	Residential Agricultural - Conservancy	Hiking, Nature Study, Wildlife Habitat, Cross Country Skiing	Forested	Yes		In Perpetuity
Throne Hill III	Townsend Road	39.00	Nonprofit	Groton Conservation Trust w/CR held by Groton Conservation Commission & DEM	Residential Agricultural - Conservancy	Connector	Forested	Yes		In Perpetuity
Throne Hill*	Corner Pepperell Rd./Castle Dr.	0.15	Public	Groton Conservation Commission	Residential Agricultural	Woodland	Wooded	Yes		In Perpetuity
Torrey Woods	Off Chicopee Row	36.00	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Wildlife Corridor, Trail Connectors, Nature Study	Forest	Yes		In Perpetuity
Town Forest	Town Forest Road	505.30	Public	Town of Groton/Town Forest Committee	Official Open Space	Boating, Bridle Path, Fishing, Hiking, Hunting, Jogging, Nature Study, Picnicking, Scenic Vista, Wildlife Habitat, Cross Country Skiing, Forestry	Forest	Yes		Planned CR
Walnut Run	Off Mill Street at Canterbury Lane	9.50	Public	Groton Conservation Commission	Residential Agricultural	Agriculture	Field	Yes		In Perpetuity
Watson Way Conservation Area	Chicopee Row	5.46	Public	Groton Conservation Commission	Residential Agricultural	Walking Trails, Wildlife Corridor, Nature Study	Forest	Yes		In Perpetuity
Wattles Pond	Longley Road	42.00	Nonprofit	Groton Conservation Trust	Residential Agricultural	Wildlife Sanctuary	Woodland, Pond	Yes		
Webber ALA	On Baddacook Pond	11.10	Private	Board of Water Commissioners holds restriction.	Residential Agricultural - Conservancy	Aquifer Protection, Limited Development	Forest, Frontage on Baddacook Pond	No	Aquifer Land Acquisition Program	In Perpetuity
West Groton Well Field	Townsend Road	20.00	Public	West Groton Water District	Public Use District	Well Protection	Frontage on Squannacook River	Yes		In Perpetuity

Table 5.5 Open Space Inventory

Parcel Name	Location	Acres	Ownership	Management Agency	Zoning	Current Use and Recreation Potential	Condition	Public Access	Type of Public Grant Accepted	Degree of Protection
Wharton Plantation	Old Dunstable Road	717.00	Nonprofit	New England Forestry Foundation	Residential Agricultural - Conservancy	Forestry, Wildlife, Quiet Recreation, Water Supply Protection, Bridle Path, Hiking, Jogging, Nature Study, Picnicking, Wildlife Habitat, Cross Country Skiing	Forest	Yes		
Wheatley (W. Throne) Conservation Restriction	Townsend Road	52.60	Nonprofit	Groton Conservation Trust; CR held by Groton Conservation Commission and NEFF	Residential Agricultural	Wildlife Habitat, Connector	Forest	Yes		In Perpetuity
Whispering Brook Conservation Area	Whispering Brook Road	13.50	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Wetlands, Trails	Forested Wetland	Yes		In Perpetuity
Whitney Pond Well	Lowell Road	40.00	Public	Board of Water Commissioners	Public Use District	Water Supply Protection	Early Successional Field, Forest			In Perpetuity
Wiewel Land	Skyfield Drive	40.00	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Scenic Vista, Walking Trails, Wildlife Corridor	Forest, Wetlands	Yes		In Perpetuity
Williams Barn Sorhaug Woods	Chicopee Row	93.30	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Wildlife Habitat, Trail Connectors, Nature Study	Forest, Wetlands	Yes		In Perpetuity
Williams Conservation Area	Chicopee Row	8.00	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Trails, Wildlife Habitat, Nature Study	Forest	Yes		In Perpetuity
Woodland Park	Wildflower Lane	23.30	Public	Groton Conservation Commission	Residential Agricultural	Wildlife Habitat, Nature Study	Forest, Wetlands	Yes		In Perpetuity
Woodland Park Access*	Between 616 and 634 Old Dunstable Road	1.17	Public	Groton Conservation Commission	Residential Agricultural	Trail Link, Wildlife Habitat, Nature Study	Forested Wetlands	Yes		In Perpetuity
Woodland Pond Conservation Area	Hidden Valley Road	9.60	Public	Groton Conservation Commission	Residential Agricultural - Conservancy	Nature Study, Wildlife Habitat, Trails	Forest	Yes		In Perpetuity
Zall	Long Cope Drive	0.46	Nonprofit	Groton Conservation Trust	Residential Agricultural	Open Space	Forest	Yes		
* Indicates land acquired/listed since the 2005 Open Space & Recreation Plan										
CR - Conservation Restriction										
GCC - Groton Conservation Commission										
GCT - Groton Conservation Trust										

LIST OF APPENDIX

- Appendix A: 2011 Open Space and Recreation Survey and Results
- Appendix B: Groton Waste Sites
- Appendix C: Section 504 Handicapped Accessibility Self Evaluation

APPENDIX A

2011 Open Space and Recreation Survey

2011 Open Space and Recreation Survey Results

Town of Groton Open Space and Recreation Plan Survey 2011

The Town of Groton is in the process of updating its Open Space and Recreation Plan. Groton completed three previous plans in 1985, 1998 and 2005 to identify the Town's recreation and open space needs. A current municipal Open Space and Recreation Plan will allow Groton to qualify for state funding for the acquisition and protection of important open space and recreation resources.

As part of this planning project, the Town is seeking community input. Responses to the survey will assist the town in identifying the needs and concerns of residents in Groton regarding open space and recreation facilities.

Please return to the Town Clerk at Town Hall by 3/31/2011

Please return to the Town Clerk at Town Hall by 3/31/2011

How long have you lived in Groton

- Less than 1 year ☐
 1 - 5 years ☐
 6 - 10 years ☐
 11 - 15 years ☐
 16 or more years ☐

Ages of adults in household

- Age range** **How many**
 18 - 25 years ()
 26 - 35 years ()
 36 - 45 years ()
 46 - 55 years ()
 Over 55 years ()

Ages of children in household

- Age range** **How many**
 1 - 5 years ()
 6 - 9 years ()
 10 - 13 years ()
 14 - 18 years ()

Rate how important the following are to you, on a scale of 1 to 5:
 (1 being not important, 5 very important)

	Importance					
Preserving rivers, lakes, streams, wetlands, vernal pools	NOT	①	②	③	④	⑤ VERY
Preserving agricultural land	NOT	①	②	③	④	⑤ VERY
Preserving scenic areas and views	NOT	①	②	③	④	⑤ VERY
Preserving and maintaining historic resources	NOT	①	②	③	④	⑤ VERY
Preserving and enhancing wildlife habitats	NOT	①	②	③	④	⑤ VERY
Protect lands surrounding water supplies, wells, aquifers	NOT	①	②	③	④	⑤ VERY
Providing public recreation facilities	NOT	①	②	③	④	⑤ VERY
Purchasing sites for conservation	NOT	①	②	③	④	⑤ VERY
Purchasing sites for recreation	NOT	①	②	③	④	⑤ VERY
Swimming lessons & lifeguards at Sargisson Beach	NOT	①	②	③	④	⑤ VERY
Public access to the Fairgrounds	NOT	①	②	③	④	⑤ VERY

How often do you visit or use any of the following Groton resources?

Visits per year:	15+	10 - 15	5 - 10	1 - 5	Never
Conservation lands	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trails	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ponds, lakes, and rivers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recreation facilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parks and playgrounds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sargisson Beach	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Do you feel Groton has an adequate number of:

	Yes	No	Undecided
Neighborhood playgrounds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Playing fields	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hiking, walking or biking trails	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Basketball or tennis courts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conservation lands	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Boating areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fishing areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Swimming areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
General town parks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Are there additional facilities you would like to see Groton sponsor?
Please List:

Please return to the Town Clerk at Town Hall by 3/31/2011

Please return to the Town Clerk at Town Hall by 3/31/2011

Please check all activities that you participated in over the past two years either in Groton or out of town:

- | | | | |
|---|---|---|---|
| <input type="checkbox"/> Boating | <input type="checkbox"/> Golf | <input type="checkbox"/> Swimming | <input type="checkbox"/> Walking |
| <input type="checkbox"/> Fishing | <input type="checkbox"/> Biking | <input type="checkbox"/> Ice skating | <input type="checkbox"/> Museum visits |
| <input type="checkbox"/> Hiking | <input type="checkbox"/> Picnicking | <input type="checkbox"/> Gymnastics | <input type="checkbox"/> Historic site visits |
| <input type="checkbox"/> Camping | <input type="checkbox"/> Wildlife viewing | <input type="checkbox"/> Skiing | <input type="checkbox"/> Dance |
| <input type="checkbox"/> Horseback riding | <input type="checkbox"/> Fitness training | <input type="checkbox"/> Cross country skiing | <input type="checkbox"/> Snow shoeing |
| <input type="checkbox"/> Mountain biking | <input type="checkbox"/> Hunting | <input type="checkbox"/> Snowmobiling | <input type="checkbox"/> Other: _____ |

What additional facilities would increase your use of conservation/recreation land:

- | | |
|---|--|
| <input type="checkbox"/> Better Parking | <input type="checkbox"/> Handicapped access |
| <input type="checkbox"/> Better maintenance | <input type="checkbox"/> More organized activities |
| <input type="checkbox"/> Benches | <input type="checkbox"/> Boat or canoe launches |
| <input type="checkbox"/> Trail maps | <input type="checkbox"/> Other: _____ |

Should the Town of Groton continue to acquire land for the following:

Conservation: YES: ☐ NO: ☐ Undecided: ☐

Recreation: YES: ☐ NO: ☐ Undecided: ☐

Additional comments if any: _____

Should the Town reinstate staffing for a Recreation Department to provide public recreation programs?

YES: ☐ NO: ☐ Undecided: ☐

To preserve land, improve or develop recreational facilities, would you be willing to:

	Yes	No	Undecided
Donate land to the Town	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Donate money to purchase land	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Donate money to develop recreation facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sell land to the Town for a "bargain price"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sell land to the Town for "fair market value"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sell or donate conservation restriction to protect your land from future development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vote for land acquisition for open space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vote for land acquisition for recreation facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Support zoning bylaw changes to preserve open space and scenic and hilltop views	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Rate how important the following open space problems are to you, on a scale of 1 to 5:

(1 being not important, 5 very important)

	Importance					
Loss of orchards and farmland	NOT	①	②	③	④	⑤ VERY
Preserving the towns rural character	NOT	①	②	③	④	⑤ VERY
Shrinking wildlife habitat	NOT	①	②	③	④	⑤ VERY
Too much housing development	NOT	①	②	③	④	⑤ VERY
Lack of adequate recreation facilities	NOT	①	②	③	④	⑤ VERY
Pollution of water bodies and wetlands	NOT	①	②	③	④	⑤ VERY

Do you know the difference between the Groton Conservation Trust and the Groton Conservation Commission?

YES: ☐ NO: ☐

Do you know what an Agricultural Preservation Restriction (APR) is? YES: ☐ NO: ☐

Do you know what a Conservation Restriction (CR) is? YES: ☐ NO: ☐

Do you have a copy of the 2010 Groton Conservation Trust "Conservation Properties" map? YES: ☐ NO: ☐

Should the Town annually request funds from the Community Preservation Committee (CPC) to sustain the Conservation Fund? YES: ☐ NO: ☐ Undecided: ☐

Would you volunteer to maintain, or steward conservation land, or trails? YES: ☐ NO: ☐ Maybe: ☐

Your opinion and input on the Open Space and Recreation Plan draft would be appreciated:

(Attach additional pages for more comments):

Optional Contact Information:

Name: _____

Address: _____

Email: _____

Please Fill In Both Sides

Town of Groton Open Space and Recreation Plan Survey 2011 - Results

				<i>Total Responses</i>
<i>How long have you lived in Groton?</i>				
*	Less than 1 year			7
*	1-5 years			45
*	6-10 years			84
*	11-15 years			104
*	16 or more years			249
<i>Ages of adults in household</i>				
*	18-25 years			95
*	26-35 years			52
*	36-45 years			145
*	46-55 years			296
*	Over 55 years			354
<i>Ages of children in household</i>				
*	1-5 years			37
*	6-9 years			73
*	10-13 years			97
*	14-18 years			122
<i>Rate how important the following are to you, on a scale of 1 to 5 (1 not important - 5 very important)</i>				
*	Preserving rivers, lakes, streams, wetlands, vernal pools			
		= 1 - Not		11
		= 2		10
		= 3		36
		= 4		85
		= 5 - Very		330
*	Preserving agricultural land			
		= 1 - Not		16
		= 2		18
		= 3		61
		= 4		122
		= 5 - Very		244
*	Preserving scenic areas and views			
		= 1 - Not		12
		= 2		13
		= 3		51
		= 4		122
		= 5 - Very		271
*	Preserving and maintaining historic resources			
		= 1 - Not		13
		= 2		24
		= 3		93
		= 4		142
		= 5 - Very		200

Town of Groton Open Space and Recreation Plan Survey 2011 - Results

				<i>Total Responses</i>
*	Preserving and enhancing wildlife habitats			
		= 1 - Not		12
		= 2		12
		= 3		70
		= 4		114
		= 5 - Very		268
*	Protect lands surroundig water supplies, wekk, aquifers			
		= 1 - Not		7
		= 2		47
		= 3		32
		= 4		96
		= 5 - Very		338
*	Providing public recreation facilities			
		= 1 - Not		28
		= 2		44
		= 3		120
		= 4		135
		= 5 - Very		145
*	Purchasing sites for conservation			
		= 1 - Not		52
		= 2		42
		= 3		97
		= 4		118
		= 5 - Very		169
*	Purchasing sites for recreation			
		= 1 - Not		67
		= 2		63
		= 3		131
		= 4		106
		= 5 - Very		93
*	Swimming lessons & lifeguards at Sargisson Beach			
		= 1 - Not		119
		= 2		79
		= 3		127
		= 4		76
		= 5 - Very		74
*	Public access to the Fairgrounds			
		= 1 - Not		98
		= 2		62
		= 3		131
		= 4		78
		= 5 - Very		88

Town of Groton Open Space and Recreation Plan Survey 2011 - Results

				<i>Total Responses</i>
How often fo you visit or use any of the following Groton resources?				
*	Conservation Lands			
		15 x/year		148
		10-15 x/year		66
		5-10 x/year		83
		1-5 x/year		127
		Never		58
*	Trails			
		15 x/year		159
		10-15 x/year		68
		5-10 x/year		93
		1-5 x/year		113
		Never		49
*	Ponds, Lakes & Rivers			
		15 x/year		124
		10-15 x/year		65
		5-10 x/year		101
		1-5 x/year		133
		Never		46
*	Recreation facilities			
		15 x/year		74
		10-15 x/year		41
		5-10 x/year		79
		1-5 years		161
		Never		121
*	Parks and playgrounds			
		15 x/year		67
		10-15 x/year		33
		5-10 x/year		78
		1-5 x/year		165
		Never		135
*	Sargisson Beach			
		15 x/year		15
		10-15 x/year		7
		5-10 x/year		26
		1-5 x/year		103
		Never		330

Town of Groton Open Space and Recreation Plan Survey 2011 - Results

				<i>Total Responses</i>
Do you feel Groton has an adequate number of:				
*	Neighborhood playgrounds			
		Yes		240
		No		111
		Undecided		110
*	Playing fields			
		Yes		291
		No		75
		Undecided		106
*	Hiking, walking or biking trails			
		Yes		343
		No		77
		Undecided		46
*	Baseball or tennis courts			
		Yes		203
		No		153
		Undecided		119
*	Conservation lands			
		Yes		273
		No		127
		Undecided		73
*	Boating areas			
		Yes		273
		No		80
		Undecided		120
*	Fishing areas			
		Yes		272
		No		64
		Undecided		135
*	Swimming areas			
		Yes		202
		No		155
		Undecided		111
*	General town parks			
		Yes		263
		No		109
		Undecided		107

Town of Groton Open Space and Recreation Plan Survey 2011 - Results

				<i>Total Responses</i>
Please check all activities that you participated in over the past 2 years either in Groton or out of town				
*	Boating			267
*	Fishing			148
*	Hiking			352
*	Camping			132
*	Horseback Riding			62
*	Mountain Biking			104
*	Golf			135
*	Biking			286
*	Picnicking			226
*	Wildlife viewing			287
*	Fitness training			231
*	Hunting			45
*	Swimming			228
*	Ice Skating			126
*	Gymnastics			28
*	Skiing			147
*	Cross Country skiing			137
*	Snowmobiling			42
*	Walking			439
*	Museum Visits			287
*	Historic site visits			258
*	Dance			86
*	Snow shoeing			148
*	Other			6
What additional facilities would increase your use of conservation/recreation land				
*	Better parking			137
*	Better maintenance			60
*	Benches			70
*	Trail Maps			224
*	Handicapped access			22
*	More organized activities			65
*	Boat or canoe launches			80
*	Other			10
Should the Town of Groton continue to acquire land for the following:				
*	Conservation			
		Yes		273
		No		109
		Undecided		89
*	Recreation			
		Yes		215
		No		117
		Undecided		135

Town of Groton Open Space and Recreation Plan Survey 2011 - Results

				<i>Total Responses</i>
Should the Town reinstate staffing for a Recreation Department to provide public recreation programs?				
*	Yes			189
*	No			100
*	Undecided			180
To preserve land, improve or develop recreational facilities, would you be willing to:				
*	Donate land to the Town			
		Yes		35
		No		306
		Undecided		49
*	Donate money to purchase land			
		Yes		138
		No		202
		Undecided		87
*	Donate money to develop recreation facilities			
		Yes		94
		No		241
		Undecided		101
*	Sell land to the Town for a "Bargain price"			
		Yes		33
		No		288
		Undecided		73
*	Sell land to the Town for a "fair market price"			
		Yes		57
		No		264
		Undecided		74
*	Sell or donate conservation restriction to protect your land from future development			
		Yes		83
		No		229
		Undecided		85
*	Vote for land acquisition for open space			
		Yes		279
		No		93
		Undecided		69
*	Vote for land acquisition for recreation facilities			
		Yes		219
		No		123
		Undecided		111
*	Support zoning bylaw changes to preserve open space and scenic and hilltop views			
		Yes		327
		No		59
		Undecided		69

Town of Groton Open Space and Recreation Plan Survey 2011 - Results

				<i>Total Responses</i>
Rate how important the following open space problems are to you on a scale of 1 to 5:				
*	Loss of orchards			
		= 1 - Not		19
		= 2		17
		= 3		72
		= 4		106
		= 5 - Very		258
*	Preserving the towns rural character			
		= 1 - Not		17
		= 2		14
		= 3		50
		= 4		112
		= 5 - Very		285
*	Shrinking wildlife habitat			
		= 1 - Not		18
		= 2		21
		= 3		68
		= 4		112
		= 5 - Very		249
*	Too much housing development			
		= 1 - Not		24
		= 2		29
		= 3		81
		= 4		104
		= 5 - Very		226
*	Lack of adequate recreation facilities			
		= 1 - Not		73
		= 2		62
		= 3		153
		= 4		105
		= 5 - Very		78
*	Pollution of water bodies and wetlands			
		= 1 - Not		9
		= 2		11
		= 3		49
		= 4		77
		= 5 - Very		315
Do you know the difference between the Groton Conservation Trust and the Groton Conservation Commission?				
*	Yes			277
*	No			189
Do you know what an Agricultural Preservation Restriction (APR) is?				
*	Yes			268
*	No			195

Town of Groton Open Space and Recreation Plan Survey 2011 - Results

				<i>Total Responses</i>
Do you know what a Conservation Restriction (CR) is?				
*	Yes			289
*	No			177
Do you have a copy of the 2010 Groton Conservation Trust "Conservation Properties" map?				
*	Yes			271
*	No			177
Should the Town annually request funds from the Community Preservation Committee (CPC) to sustain the Conservation fund?				
*	Yes			236
*	No			50
*	Undecided			177
Would you volunteer to maintain, or steward conservation land or trails?				
*	Yes			133
*	No			111
*	Maybe			207

APPENDIX B

Groton Waste Sites

Groton Waste Sites

RTN	City/ Town	Release Address	Site Name/Location Aid	Reporting Category	Notification Date	Compliance Status	Date	Phase	RAO Class	Chemical Type
2-0000053	GROTON	436 MAIN ST	CONDUCTOR LABS KYTRON CIR	NONE	10/29/1986	TIER 1A	4/13/2005	PHASE V		Hazardous Material
2-0000054	GROTON	219 TOWNSEND RD	HOLLINGSWORTH & VOSE CO	NONE	1/15/1987	LSPNFA	2/27/1995			
2-0000055	GROTON	8 WEST MAIN ST RTE 225	NIELSON MOLDING	NONE	1/15/1987	RAO	3/9/2011	PHASE IV	A2	Oil
2-0000201	GROTON	412 MAIN ST	INSCO CORP	NONE	1/15/1987	RAO	10/18/1994		B1	Oil and Hazardous Material
2-0000223	GROTON	37 GILSON RD	GROTON SCREW MACHINE	NONE	8/20/1987	TIER 2	5/1/2009	PHASE II		Oil
2-0000390	GROTON	3 BOSTON RD	PETERBOROUGH OIL COMPANY	NONE	1/15/1989	RAO	5/5/2005	PHASE V	A3	
2-0000409	GROTON	177 MILL ST LOT 1-50	MILL ST JUNKYARD	NONE	7/15/1988	DEPNFA	3/26/1998			
2-0000466	GROTON	871 BOSTON RD	871 BOSTON RD PROPERTY	NONE	1/15/1989	RAO	12/28/2001	PHASE III	A2	
2-0000767	GROTON	232 MAIN ST	GROTON MOBIL FMR	NONE	7/6/1992	RAO	9/6/2001	PHASE V	A2	
2-0000934	GROTON	235 MAIN ST	TEXACO STATION FMR	NONE	8/21/1992	RAO	5/4/1998		NC	Oil
2-0001082	GROTON	120 HAYDEN RD	PROPERTY	NONE	10/1/1993	RAO	11/28/1997	PHASE II	NC	
2-0010843	GROTON	512 MARTIN POND RD	RESIDENCE	TWO HR	7/5/1995	RAO	11/19/2002		B1	Oil
2-0011384	GROTON	31 ADAMS AVE	JOY AVE FMR	120 DY	8/28/1996	RAO	5/7/1999	PHASE II	A3	Oil
2-0011407	GROTON	173 MAIN ST	TOWN HALL	72 HR	9/20/1996	RAO	9/29/1997		A2	Oil
2-0011541	GROTON	31 ADAMS AVE	JOY AVE FMR	120 DY	12/19/1996	RAO	5/17/1999		B2	Hazardous Material
2-0011580	GROTON	31 ADAMS AVE	JOY AVE FMR	120 DY	1/15/1997	RAO	5/17/1999		B2	Oil
2-0011886	GROTON	173 MAIN ST	TOWN OF GROTON	TWO HR	9/19/1997	RAO	12/19/1997		B1	Hazardous Material
2-0012121	GROTON	217 WEST MAIN ST	CITGO STATION	120 DY	2/13/1998	RAO	11/14/2003	PHASE IV	A2	Oil and Hazardous Material
2-0012258	GROTON	284 OLD AYER RD	NO LOCATION AID	TWO HR	6/20/1998	RAO	8/19/1998		A2	Oil
2-0012347	GROTON	284 OLD AYER RD	MACGREGOR FARM	120 DY	8/17/1998	RAO	8/19/1998		B1	Hazardous Material
2-0012402	GROTON	129 MAIN ST	CUMBERLAND PLAZA	120 DY	9/11/1998	RAO	9/11/1998		B1	Oil
2-0012467	GROTON	534 LONGLY RD	RESIDENCE	TWO HR	10/23/1998	RAO	2/8/1999		A2	Oil
2-0012763	GROTON	217 WEST MAIN ST	WEST GROTON SERVICE	72 HR	4/23/1999	RTN CLOSED	6/22/1999			Oil
2-0013013	GROTON	1 POWDERHOUSE RD	LAWRENCE ACADEMY	TWO HR	11/3/1999	RAO	1/10/2000		A2	Hazardous Material
2-0013033	GROTON	6 WEST MAIN ST	LEATHERBOARD MILL FMR	72 HR	11/17/1999	RAO	7/28/2000			Oil
2-0013045	GROTON	318 MAIN ST	WILSONS TEXACO	120 DY	11/23/1999	RAO	11/29/2000	PHASE II	B1	Hazardous Material
2-0013117	GROTON	MILL ST	MILL ST JUNKYARD	120 DY	1/18/2000	TIER 2	8/31/2001	PHASE IV		Hazardous Material

Groton Waste Sites

RTN	City/ Town	Release Address	Site Name/Location Aid	Reporting Category	Notification Date	Compliance Status	Date	Phase	RAO Class	Chemical Type
2-0013128	GROTON	230 MAIN ST	FORMER GAS STA	120 DY	1/18/2000	RAO	1/18/2000		B1	Hazardous Material
2-0013214	GROTON	100 LONG MILL RD	WASTE MANAGEMENT CORP	TWO HR	3/31/2000	RAO	5/24/2000		A1	
2-0013353	GROTON	318 MAIN ST	WILSONS TEXACO	120 DY	7/3/2000	RAO	9/22/2000		A2	Oil and Hazardous Material
2-0013601	GROTON	291 TOWNSEND RD	GLADYS PARKER ESTATE	72 HR	12/11/2000	RAO	4/11/2001		A1	Oil
2-0013720	GROTON	219 TOWNSEND RD	HOLLINGSWORTH&VOSE CO	120 DY	3/2/2001	RAO	3/21/2005	PHASE IV	C1	Hazardous Material
2-0013992	GROTON	11 BRYANWOOD LN	GROTON ELECTRIC LIGHT CO	TWO HR	9/15/2001	RAO	11/15/2001		A1	Oil
2-0014173	GROTON	FARMERS ROW	BUILDING AND GROUNDS FACILITY	120 DY	1/31/2002	RAO	6/18/2002		A2	Hazardous Material
2-0014807	GROTON	703 CHICOPEE ROW	GROTON DUNSTABLE HIGH SCHOOL	TWO HR	8/28/2003	RAO	8/28/2003		A2	Oil
2-0014872	GROTON	145 LONGLY RD	145 LONGLY RD VEHICLE ACCIDENT	TWO HR	8/14/2003	RAO	10/10/2003		A1	
2-0015203	GROTON	436 MAIN ST	CONDUCTORLAB	120 DY	4/13/2004	RTN CLOSED	4/13/2005			Hazardous Material
2-0015205	GROTON	127 SHIRLEY RD	FARMERS ROW LLC	120 DY	4/16/2004	RAO	12/9/2004		A2	Oil and Hazardous Material
2-0015403	GROTON	318 MAIN ST	IN FRONT OF FMR WILSON TEXECO	120 DY	9/21/2004	URAM	9/28/2004			Oil
2-0015486	GROTON	436 MAIN ST	CONDUCTORLAB	120 DY	11/2/2004	RTN CLOSED	4/14/2005			Hazardous Material
2-0015493	GROTON	318 MAIN ST	PGI REALTY LLC	72 HR	11/19/2004	RAO	12/21/2004		B1	Oil and Hazardous Material
2-0015662	GROTON	143 MAIN ST	MASCO CONTRACTOR SERVICES	INC	TWO HR	3/29/2005	RAO	5/27/2005		A1
2-0016340	GROTON	342 MAIN ST	FLORENCE ROCHE SCHOOL	TWO HR	8/3/2006	RAO	11/17/2006		A1	Hazardous Material
2-0016910	GROTON	14 MAIN ST	COUNTRY DAY SCHOOL	72 HR	12/13/2007	RAO	12/22/2008		A2	Oil
2-0017370	GROTON	491 FARMERS ROW	RESIDENCE - SMIGELSKI	TWO HR	12/28/2008	TIER 2	12/29/2009	PHASE II		Oil
2-0017381	GROTON	17 BROAD MEADOW RD	RESIDENCE	TWO HR	1/7/2009	TIER 2	2/1/2010	PHASE II		Oil
2-0017441	GROTON	440 LOWELL RD	GROTON ELECTRIC SUBSTATION	TWO HR	3/7/2009	RAO	5/5/2009		A2	
2-0017447	GROTON	17 BROADMEADOW RD	RESIDENCE	72 HR	3/10/2009	RTN CLOSED	2/11/2010			Oil
2-0017736	GROTON	FARMERS ROW-EAST SIDE	FORMER CAMPUS DISPOSAL AREA	120 DY	12/8/2009	TIER 2	12/15/2010	PHASE II		Hazardous Material
2-0017828	GROTON	500 COW POND RD	GROTON DPW FACILITY	72 HR	3/25/2010	RAO	5/25/2010		A1	Oil
2-0017841	GROTON	619 BOSTON RD	A.L. PRIME STATION	72 HR	4/6/2010	RAO	4/7/2011	PHASE II	A2	Oil
Source: Massachusetts Environmental Protection Agency, Cleanup of Sites & Spills, http://db.state.ma.us/dep/cleanup/sites/search.asp .										

APPENDIX C

Section 504: Handicapped Accessibility Self Evaluation

504 Report Part I: Administrative Requirements

1. Designation of 504 Coordinator (ADA Coordinator)

The municipal employee responsible for 504 coordination is Michelle Collette, Land Use Director. This designation was made by a vote of the Board of Selectmen on July 1, 2009.

2. Commission on Accessibility

The Commission on Accessibility consists of seven members, appointed by the Town Manager, in accordance with MGL Chapter 40, section 8J. The Commission meets monthly to work on public education and outreach. The Commission conducted a town-wide survey regarding the universal accessibility to public events, public places, and business establishments. Commission members worked closely with the Montachusett Regional Planning Commission on the "Walkability" assessment funded by the MassDOT.

3. Grievance Procedures

See attached grievance procedure (Groton Code §48-11) for Town employees. For users of the parks and recreation facilities, a written letter of complaint would be sent to the department under whom the park or facility is managed.

4. Public Notification Requirements

The Town of Groton does not discriminate on the basis of disability and an Equal Opportunity Employer statement is posted with all recruitment notices. See attached for a copy of a recruitment notice. While the Town does not currently provide such notices in large print or in auditory form, it will consider making changes to its current notification procedures.

4. Participation of Individuals with Disabilities or Organizations Representing the Disabled Community

The mission of the Groton 504 Coordinator is to serve as a resource to the Town of Groton and will report to the Groton Board of Selectmen on issues pertaining to the Town's compliance with the Americans with Disabilities Act, particularly in these three areas:

- Public Access to Buildings and Programs
- Town Employment Practices
- Public Awareness

The site reconnaissance for Section II of this Report was performed with attention to the ability of the disabled community to access local conservation and recreation properties.

Groton has prepared "Americans With Disabilities Act - Title II Compliance", a document that summarizes Groton's policy, consistent with ADA, and makes recommendations related to accessibility improvements to public facilities. The policy

section of this report is attached; the full report can be reviewed in the Selectmen's Office.

504 Report Part II: Program/Facility Accessibility

COW POND BROOK FACILITIES

Location: Cow Pond Brook Road
Size: 110.0 acres
Manager: Board of Selectmen

Facilities

- 4 Baseball diamonds
- 3 Soccer fields
- 1 Pump houses
- 2 Concession stands
- 1 Game Field shared between football and lacrosse
- 1 Practice Field shared between football and lacrosse

Existing Conditions

The fields are reported to be in good condition with on-going maintenance. There is one handicapped parking space and signage with approximately 70 total spaces on a gravel/dirt surface. No handicapped accessible paths to the fields although there is a dirt path to the back field that can get quite muddy.

Suggested Improvements

- Construct 2 handicapped parking spaces with signage near front field entrance gates, with one space or drop-off area near the back field.
- Construct handicapped accessible hard-packed paths from the parking areas to the fields and blading area - may be constructed on top of berms separating fields.
- Resod and reshape fields as necessary - the condition of these fields is from heavy usage and lack of rest. Additional fields may be required.
- Parking lots in need of repair.

CUTLER FIELD

Location: Townsend Road
Size: 7.0 acres
Manager: Park Department

Facilities

- 2 Baseball diamonds
- Basketball court (with lighting posts but no lighting)
- 2 Swing sets (1-3 station, 1-4 station)
- Seesaw

Existing Conditions

The fields are reported in good condition. The diamond is maintained by youth baseball. The basketball court is in good condition although the surface is cracked, there are corroding backboards and rims in need of replacement - there are no lights, also. The play equipment is in excellent condition with new swings installed in 2008. There are no handicapped parking spaces (approximately 30 total spaces on a dirt surface) and no handicapped accessible paths to the fields.

Suggested Improvements

- Construct 2 handicapped parking spaces with signage near the baseball field entrance and by the basketball court/playground area.
- Construct handicapped accessible hard-packed paths from the parking area to the fields, court and play areas.
- Repair the basketball court and replace the rims and backboards, and add lighting on top of the existing poles. Repair or replace bent pole.

Groton Pool and Golf Center (formerly Groton Country Club)

Location:	Boston Road
Size:	113.0 acres
Manager:	Groton Country Club Authority

Facilities

- 9-Hole golf course
- Swimming pool
- Picnic area
- Picnic pavilion
- Club house/function hall
- Pro shop
- Four tennis courts

Existing Conditions

The golf course is in good condition with a manually operated irrigation system. The swimming pool and picnic area are in good condition. The picnic pavilion is remotely located and in good condition. The clubhouse and pro shop are in excellent condition. The tennis courts are in poor shape with cracking in the asphalt. The parking area includes spaces for approximately 200 cars. The main parking lot has two handicapped parking spaces. Signage directs visitors to four handicapped spaces adjacent to the clubhouse. The club house has fully handicapped accessible restroom facilities.

Suggested Improvements

- Disabled patrons can gain access to the swimming pool area through calling ahead of time to arrange a golf cart to transport them to the area.
- Steep, but hard-packed paths provide limited handicapped access to the picnic pavilion. Cars can utilize these paths to improve access for those with disabilities.
- Because the golf course is hilly, access by those in power wheelchairs is limited. A handicap flag affixed to a golf cart would allow those with disabilities to maneuver in all but the steepest portions of the course.

HAZEL GROVE PARK (formerly Groton Fairgrounds)

Location: Fairgrounds Road
Size: 13.0 acres
Manager: Park Commission

Facilities

- Racetrack
- 1 viewing stands
- 4 storage sheds
- Stable
- 3 other buildings

Existing Conditions

The racetrack and grounds are in fair condition. The stable, stands, and buildings are in fair to poor condition and in need of maintenance. There are no handicapped parking spaces (approximately 100 total spaces on a dirt surface) and no handicapped accessible paths to the track, stables, or buildings. The facility is used and maintained by two private clubs, the Groton Riding & Driving Club (manages stable, track, and buildings) and the Groton Pony Club (manages the infield, 2 riding rings, and cross country jumps).

Suggested Improvements

- Construct 3 handicapped parking spaces with signage near the stable and the racetrack.
- Construct handicapped accessible hard-packed paths from the parking area to the racetrack, bridle paths, stable and buildings.

(AMORY A.) LAWRENCE PLAYGROUND (TOWN FIELDS)

Location: Broadmeadow Road
Size: 14.4 acres
Manager: Park Department

Facilities

- 2 Baseball diamonds

- Basketball court (lighted)
- Play structure (Hanson Memorial Playground)
- Concrete garage storage facility

Existing Conditions

All fields are reported in good condition, including both baseball diamonds. There are drainage problems with the fields so that they remain wet and soggy; however, they are playable the majority of the year. The basketball court is in fair condition. There is one handicapped parking space at the library with approximately 44 total spaces on an asphalt surface, along the access road, and at a small lot by the play structure. There are no handicapped accessible paths to the fields.

Suggested Improvements

- Construct 3 handicapped parking spaces with signage at the library, play structure, and access driveway locations.
- Construct handicapped accessible hard-packed paths from the parking lots to the fields and court area.
- Construct a handicapped accessible gradual sloping ramp with handrails to access the basketball court.
- Install ramps and rails within the play structure to allow handicapped access over wood platforms to other play areas.
- Perform site work and install drainage where necessary to alleviate field flooding.

Old Burying Ground

Location:	Hollis Street
Size:	2.0
Manager:	Park Department

Facilities

- Cemetery

Existing Conditions

The cemetery is in good condition, with recent improvements made by the Friends of the Trees. The area is mainly for walking and is not entirely accessible as grades would be difficult for people with disabilities to negotiate. There is no formal parking area provided, but cars may be parked along the streets.

PETAPAWAG CANOE LAUNCH

Location:	Nod Road
Size:	3.0 acres
Manager:	Conservation Commission

Facilities

- Boat launch
- Picnic tables
- Fishing area
- Mill remnants

Existing Conditions

The Commonwealth of Massachusetts recently constructed a concrete boat ramp at this location. The area is relatively flat and would accommodate use by those with disabilities. The picnic area has recently been cleaned up and the granite picnic tables re-set. Parking, on dirt surfaces, is available for approximately 10 vehicles towing boats. Specific parking spaces are set aside for canoe users. There are no handicapped parking spaces.

Suggested Improvements

- Construct one handicapped parking space with wood signage adjacent to the picnic area, near the boat launch.
- Construct a handicapped accessible hard-packed path from the boat launch parking area to the fishing and picnic areas.

SARGISSON (TOWN) BEACH

Location:	Whiley Road
Size:	19.0 acres
Manager:	Conservation Commission

Facilities

- Beach area
- Hiking
- Picnic tables
- Trails to water and picnic areas
- Grills
- Fishing, including ice fishing

Existing Conditions

Erosion is occurring on the fishing point. There is some weed growth in the beach area, and the beach could use sand replenishment. The granite picnic areas are in good condition, but require re-setting in some instances. The trails throughout the area tend to be steep and have a dirt surface or granite steps. Approximately 50 dirt surface parking spaces are available. There is one handicapped parking space. The main trail to the Beach also provides emergency vehicle access. This access can be opened (gate temporarily removed), upon request, to allow those with a handicapped parking permit to eliminate the ¼ mile walk to and from the beach.

Suggested Improvements

- Improve the surface condition of the cart path to the beach, removing ruts and large stones.
- Consider re-grading and adding hard-packed gravel to access leading to the beach from the shed.

STONEBRIDGE FARM RECREATION AREA

Location: Stonebridge Way
Size: 11.0 acres
Manager: Park Department

Facilities

- Baseball diamond (inactive)
- Lacrosse exclusive fields
- Tennis court

Existing Conditions

The baseball diamond is inactive; the field area is in good condition. The tennis court is in fair condition. There are no handicapped parking spaces (approximately 50 total spaces on a dirt surface) and no handicapped accessible paths to the courts or fields.

Suggested Improvements

- Construct 3 handicapped parking spaces with signage near the basketball and tennis courts, and adjacent to a future path leading down to the fields.
- Construct handicapped accessible hard-packed paths from the parking area to the baseball diamond and field area.
- Resod, and reshape the baseball diamond and field area.
- Resurface and fill cracks on courts as needed – ongoing.
- Add a new net and chain-link fencing to the tennis court – in process.
- Construct a formal parking area and fence it off from the rest of the facilities and fields.

TOWN FOREST

Location: Town Forest Road
Size: 500+ acres
Manager: Town Forest Committee

Facilities

- Forested land with trails (wide enough for vehicular access)

Existing Conditions

The area is undisturbed and generally in excellent condition. Selective logging is conducted in the Forest, but the woods and wetlands continue to provide significant wildlife habitat while also presenting opportunities for passive recreational activities. The Town Forest Committee has recently prohibited motorized vehicles within the Forest, and the trails are beginning to recover from years of abuse. There is no formal parking provided, although approximately 25 spaces are available on a dirt surface area. There are no handicapped parking spaces.

Suggested Improvements

- Add a handicapped space and wood signage near the trail entrances.
- Create somewhat of a more distinguishable parking area with hard-packed gravel and wood timbers.

WHEELER (CAROL) PARK

Location:	Intersection Rt. 225 and Pepperell Road
Size:	.16 acre
Manager:	Park Department
Facilities:	Park benches

Existing Conditions

This pocket park has just recently been constructed. The brick walkway is in excellent condition and the path leading from the parking area is compacted stone dust. The facility is accessible by the handicapped. The park itself has a garden of native plantings and a lovely vista of Thompson Mill Pond; the Squannacook River provides dramatic sounds as the water falls over the dam. This area is utilized by nearby residents, including senior citizens living at RiverCourt.

Suggested Improvements

- Add handicapped parking space in parking area.

OTHER PROPERTIES

Conservation Commission

It should be noted that there are many other areas owned by Town and under the care and custody of the Conservation Commission that have been maintained in a mostly natural wilderness state. Many of these sites have extensive wetlands. Most of these areas serve as vegetative and wildlife habitats. Some of these areas have trails and access to the properties which also allows them to support passive recreational uses. None of these other Town-owned areas have parking, which is critical for use and enjoyment by residents. It is recommended that a management plan be developed for areas which support recreational uses. This may include provisions for signage on the properties, along with a periodic trail grooming and brush cutting program. The volunteer Groton

Trails Committee devotes many hours to these maintenance and marking of the trail network.

School

A Conservation Restriction that allows public access is placed on 73.5 acres of land on North St. behind the High School. An emergency access roadway has been constructed from North St. to the back entry to the school. The roadway has a surface and grade suitable for use by those with disabilities. Wildlife viewing is an especially rewarding activity on this property.

Suggested Improvements

The Groton Dunstable Regional School District should consider some type of accommodation to encourage access by individuals with disabilities. Because this is a road for emergency use only, it is gated at both ends. There are spaces where access can be gained around the edges of the gates, but it is currently difficult to maneuver and could be improved. Setting aside a handicapped parking space within the school parking lot would improve accessibility from that side of the property.

State & Other Public Entities

Properties owned by other public entities are their responsibility to manage, although advocacy by the Town could be a catalyst for more rapid action on specific issues. Generally, the lands owned by the State are in good condition, but are lacking in some areas. Allowances for handicapped parking at formal parking lots or areas is absent at some places. Additionally, the Town has been advocating for boat washes at the two State-owned boat launches to protect their water bodies from nuisance aquatic vegetative growth that boats may transplant from other waters. The Nashua River Rail Trail has a hard, relatively flat surface which is accessible for people with disabilities. Informal parking is available on the street at Station Avenue and off Broadmeadow in Groton, but there are currently no designated handicapped parking spaces. Handicapped parking for 6 -8 vehicles is available within the Town of Ayer public parking area adjacent to the Rail Trail.

504 Report Part III: Employment Practices

1. Recruitment

Job Announcements: All job announcements issued by the Town of Groton include a nondiscrimination statement. While the Town does not currently provide such notices in auditory form, it will consider making changes to its current notification procedures.

Interviews: All interviews conducted with potential employees address the applicant's qualifications for the job and do not inquire about an applicant's disability or severity.

2. Personnel Actions

Groton's 504 Coordinator has considered including information about Town employees with disabilities, however, the Coordinator felt that divulging such information would violate the employees' confidentiality and thus the information is not provided in this report.

3. Leave Administration

The Town of Groton has bylaws regarding leave of absence and sick leave (Groton Code §48-13, §48-14, §48-9 respectively). The Town's leave policy is also governed under the Americans with Disabilities Act.

4. Training

Training programs in Groton are administered in a manner that allows equal participation by qualified employees with disabilities.

5. Tests

All tests required by the Town of Groton are designed to measure only the essential job requirements. These tests are only job-related and are nondiscriminatory towards persons with impaired communication abilities.

6. Medical Examinations/Questionnaires

Pre-employment medical examinations are required only for certain positions within the Town of Groton and only after conditional offer of employment has been made. Police civil service requires a physical exam prior to academy training.

7. Social/Recreational Programs

All social and recreational programs sponsored by Groton are accessible to employees with disabilities.

8. Fringe Benefits

Town of Groton employees with disabilities are given the same employee benefits as non-disabled employees.

9. Collective Bargaining Agreements

Terms and practices of collective bargaining agreements in Groton generally do not contain provisions that limit the participation of qualified employees with disabilities. Some job descriptions, such as fire, police, and highway may contain physical restrictions.

10. Wage and Salary Administration

Employees with disabilities are not offered different rates of compensation based solely on the basis of disability.

EQUAL EMPLOYMENT OPPORTUNITY/ AFFIRMATIVE ACTION

Americans With Disabilities Act & Grievance Procedure

05-01

PURPOSE AND SCOPE

The purpose of this document is to establish consistent procedures regarding Equal Employment Opportunity and Affirmative Action. The Town recognizes the right of individuals to work and advance on the basis of merit, ability, and potential without regard to race, sex, color, disability, religion, national origin, sexual orientation, age, or a person's service in the military. Non-discrimination and equal opportunity are the policy of the Town in all of its hiring and employment programs and activities.

Toward this end, the Town commits itself to take affirmative measures to ensure equal opportunity in the recruitment and hiring, promotion, demotion or transfer, layoff or termination, rate of compensation, and all terms and conditions of employment. The Town is committed to fostering and encouraging a workplace comprised of individuals of diverse backgrounds, races, genders, abilities, religious beliefs, sexual orientation, and ages.

All Town employees are encouraged to take diligent, affirmative steps to ensure equal opportunity and respect for diversity, not only in the internal affairs of the Town departments and agencies, but also in their relations with the public, including those persons or organizations doing business with the Town.

POLICY

- A. Recruit, hire, and promote in all job classifications without regard to race, sex, color, disability, religion, national origin, sexual orientation, age, or a person's service in the military.
- B. Make decisions about employment so as to encourage the development of a diverse workforce.
- C. Ensure that employment and promotion decisions are made in accordance with the principles of equal opportunity, by imposing only valid, job-related requirements for employment and promotional opportunities.

- D. Ensure that all other personnel actions such as compensation, benefits, transfers, layoff, recall, and training will be administered without regard to race, sex, color, disability, religion, national origin, sexual orientation, age, or a person's service in the military.
- E. Prohibit any kind of harassment based on race, sex, color, disability, religion, national origin, sexual orientation, age, or a person's service in the military.
- F. No retaliatory action against those persons who file complaints of discrimination or against individuals who cooperate in such investigations will be tolerated. Violation of this policy will lead to appropriate disciplinary action up to and including termination from Town Service.
- G. Anyone who feels that he or she has been discriminated against by the Town on the basis of race, sex, color, religion, national origin, sexual orientation, age, or a person's service in the military in employment practices may file a grievance in accordance with the procedures described in Section IV of this document.

AMERICANS WITH DISABILITIES ACT

It is the policy of the Town to comply with requirements of the regulations contained in the U.S. Americans with Disabilities Act of 1990. This policy applies to all employees of the Town excluding those employees under the supervision and control of the School Committee.

The Town will not discriminate against people with disabilities in any employment practices or in terms, conditions or privileges of employment, including, but not limited to: application, testing, hiring, assignment, evaluation, disciplinary action, training, promotion, medical examination, layoff/recall, termination, compensation, leaves or benefits.

The Town has and will continue to establish occupational qualifications for each position, including the education, skills, and work experience required, and the physical, mental and environmental standards necessary for job performance, health, and safety. Such standards are job-related and consistent with business necessity.

- A. The Town will provide reasonable accommodation to the known physical or mental limitations of a qualified applicant or employee unless such

accommodation will impose undue hardship on the Town. The Town will provide reasonable accommodation:

- To ensure equal employment opportunity in the application process
- To enable a qualified individual with a disability to perform the essential functions of the job
- To enable an employee with a disability to enjoy equal benefits and privileges of employment.
- The Town need not provide reasonable accommodation for an individual who is otherwise not qualified for a position.
- The duty to provide reasonable accommodation is on-going and may arise any time an employee's job changes.
- It is the general responsibility of the individual with the disability to request the accommodation.
- If the cost of providing the accommodation is determined to meet the criteria of undue hardship on the Town, the affected individual will be offered the opportunity to provide the accommodation or partial accommodation him or herself.

➤ Some examples of potential reasonable accommodation include, but are not limited to, the following:

- Making facilities readily accessible and usable;
- Restructuring a job by reallocating or distributing marginal job functions;
- Altering when or how an essential job function is performed;
- Creating part-time or flexible schedules;
- Obtaining or modifying equipment or devices;
- Providing qualified readers or interpreters;
- Permitting the use of accrued or unpaid leave for treatment; and,
- Providing reserved parking.

B. When attempting to identify what is a reasonable accommodation, appointing authorities and department managers should do the following:

- 1) Examine the particular job involved, determining its purpose and its essential functions.

- 2) Consult with the individual with the disability to find out is or her specific physical or mental abilities and limitations.
 - 3) In consultation with the individual, identify potential accommodations and assess how effective each would be.
 - 4) If an individual requests an accommodation which the appointing authority or department head considers to be unnecessary, the department head will ask for written documentation from a physician or other professional with knowledge of the individual's functional limitations.
 - 5) The determination that any reasonable accommodation represents an undue hardship will be made by the Administrative Officer or his/her designee.
- C. No pre-employment inquiries may be made about an applicant's disability. This prohibition does not prevent an employer from obtaining necessary information regarding an applicant's qualifications or ability to safely perform the essential functions of the job. Before making a job offer, the Town may ask questions about an applicant's ability to perform specific job functions and may make a job offer that is conditioned on satisfactory results of a post-offer medical examination or inquiry. The Town may not make inquiries about specific disabilities. Questions which may not be asked during a pre-employment interview include (but are not limited to):
- Have you ever had, or been treated for any of the following conditions?
 - Please list any conditions or diseases for which you have been treated in the past three years.
 - Have you ever been hospitalized? If so, for what conditions?
 - Have you ever been treated by a psychiatrist or psychologist? If so, for what condition?
 - Have you ever been treated for any mental condition?
 - How many days were you absent from work because of illness last year?
 - Do you have any disabilities or impairments which may affect your performance in the position?
 - Are you taking any prescription drugs?
 - Have you ever been treated for drug addiction or alcoholism?
 - Have you ever filed a workers' compensation claim?

- D. In addition, these questions may not be asked of a previous employer or other reference provider for an applicant during reference checks. In addition, the hiring manager may not ask the reference provider about the applicant's:
- Disability;
 - Illness; or,
 - Workers' Compensation history.
- E. Even if the applicant is qualified to perform the job, the Town may deny employment if such employment would pose a direct threat to the health and safety of the individual or others, if such threat cannot be eliminated through reasonable accommodation. Such determination must be made by the Administrative Officer or his/her designee after careful review of the circumstances.
- F. An employee who is an alcoholic is considered to be a person with a disability under the terms of the ADA. However, the Town may discipline, discharge or deny employment to an alcoholic whose current use of alcohol adversely affects job performance or conduct to the extent that he or she is "not qualified" for the position.
- G. Persons addicted to drugs, but who are no longer using drugs illegally and who are receiving treatment for drug addiction, or who have been rehabilitated successfully, are protected from discrimination by the ADA. However, the Town will discharge or deny employment to current illegal users of drugs, in accordance with policies established herein. The Town may ask questions regarding the current illegal use of drugs. However, the employer may not ask whether the applicant is a drug addict or alcoholic, or whether he/she has ever been in a drug or alcohol rehabilitation program.
- H. Violation of this policy will lead to appropriate disciplinary action up to and including termination from Town Service. The Town's grievance procedure for discrimination based on disability is contained in Section IV below.

DISCRIMINATION GRIEVANCE PROCEDURE

The purpose of this procedure is to encourage local resolution of grievances concerning employment. It is important to note that grievants are not required to exhaust the Town's procedures prior to filing a state or federal complaint or taking court action. Anyone who feels that he or she has been discriminated against by the Town on the basis of race, sex, color, disability, religion, national origin, sexual orientation, age, or a person's service in the military in employment practices may file a grievance.

Grievances should be in writing and should include information about the alleged discrimination such as name, address, phone number of grievant and location, date and description of the problem. Reasonable accommodations, such as personal interviews or a tape recording of the complaint will be made available for persons with disabilities who are unable to submit a written complaint.

The grievant should first attempt to resolve the grievance at the level of the department manager. The department manager will notify the Administrative Officer if such a grievance is submitted. If the grievance is not resolved to the satisfaction of the grievant, or if the department manager lacks authority or jurisdiction to correct the problem, the grievance should be submitted by the grievant and or his/her designee as soon as possible to the Administrative Officer.

Within 15 calendar days after receipt of the grievance, the Administrative Officer will meet with the grievant to discuss the grievance and possible resolutions. Within 15 calendar days after the meeting, the Administrative Officer will respond to the grievant in writing, or, where appropriate, in a format accessible to the grievant such as audio tape. The response will explain the position of the Town and may offer options for substantive resolution of the grievance.

All grievances received by the Administrative Officer and responses from same, will be kept by the Town for at least three (3) years. Such documents will remain strictly confidential to the extent allowed by law.

This grievance procedure is meant to be informal, and cannot be legally binding on either part. Any grievance or complaint involving existing or threatened

civil or criminal litigation may not be addressed using this informal procedure.

No retaliatory action will be taken against those persons who file complaints of discrimination on the basis of race, sex, color, disability, religion, national origin, sexual orientation, age or a person's service in the military, or against individuals who cooperate in such investigations.

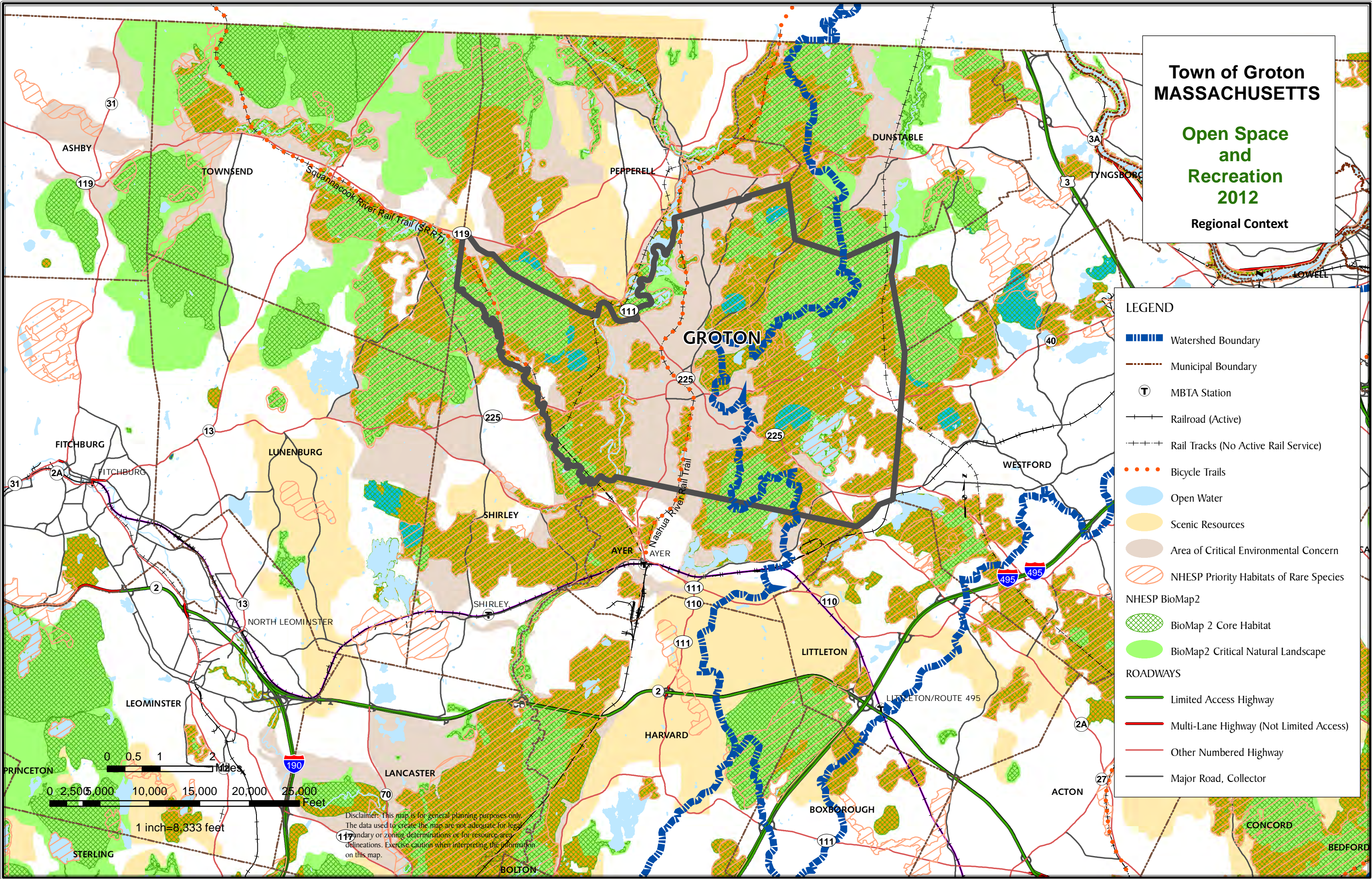
**Town of Groton
MASSACHUSETTS**

**Open Space
and
Recreation
2012**

Regional Context

LEGEND

- Watershed Boundary
- Municipal Boundary
- MBTA Station
- Railroad (Active)
- Rail Tracks (No Active Rail Service)
- Bicycle Trails
- Open Water
- Scenic Resources
- Area of Critical Environmental Concern
- NHESP Priority Habitats of Rare Species
- NHESP BioMap2
 - BioMap 2 Core Habitat
 - BioMap2 Critical Natural Landscape
- ROADWAYS
 - Limited Access Highway
 - Multi-Lane Highway (Not Limited Access)
 - Other Numbered Highway
 - Major Road, Collector



Open Space and Recreation 2012

Open Water

Roads

USE DISTRICTS

Residential A

Residential B

Business

Conservancy

Institutional

Manufacturing

Official Open Space

Public Use

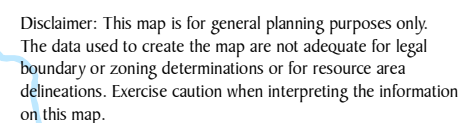
OVERLAY DISTRICTS

Town Center Overlay

Recreation Overlay

Flood Plain Overlay

Primary Water Resource Overlay



Town of Groton MASSACHUSETTS

Open Space and Recreation 2012

Soils and Geologic Features Map



LEGEND

262B NRSC Soil Codes

SURFICIAL GEOLOGY

Shallow Bedrock

Postglacial Deposits

Artificial Fill

Floodplain Alluvium

Swamp Deposits

Glacial Stratified Deposits

Coarse

Glaciolacustrine Fine

Till Bedrock

Thick Till

End Moraine Deposits

Bedrock Outcrop

Thin Till

0 0.5 1
Miles

0 2,500 5,000 10,000
Feet

1 inch=3,333 feet

Disclaimer: This map is for general planning purposes only. The data used to create the map are not adequate for legal boundary or zoning determinations or for resource area delineations. Exercise caution when interpreting the information on this map.

Town of Groton MASSACHUSETTS

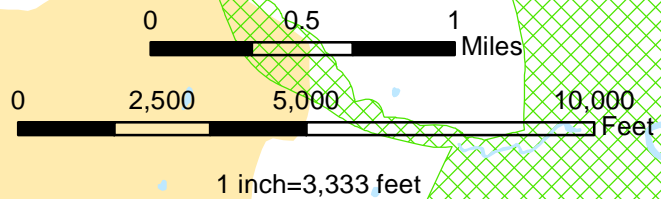
Open Space and Recreation 2012

Unique Features Map

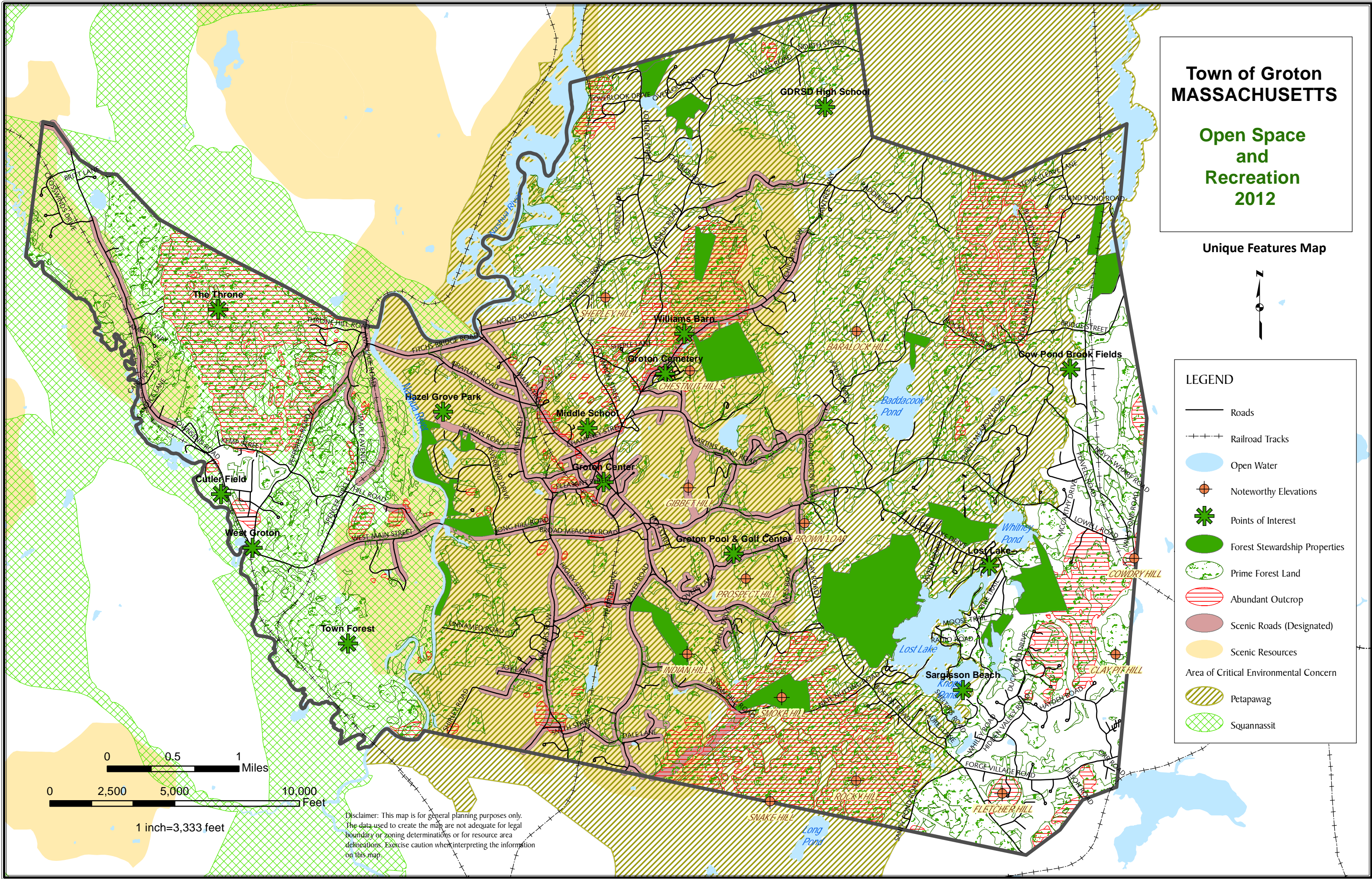


LEGEND

- Roads
- Railroad Tracks
- Open Water
- Noteworthy Elevations
- Points of Interest
- Forest Stewardship Properties
- Prime Forest Land
- Abundant Outcrop
- Scenic Roads (Designated)
- Scenic Resources
- Area of Critical Environmental Concern
- Petapawag
- Squannassit



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Town of Groton
MASSACHUSETTS

Open Space
and
Recreation
2012

Water Resources Map



LEGEND

- Roads
- Watershed
- Open Water
- Wetlands
- NHESP Certified Vernal Pool
- Public Drinking Water Supply
- DEP Zone II
- Aquifers
- 100-Year Flood Plain

0 0.5 1 Miles

0 2,500 5,000 10,000 Feet

1 inch=3,333 feet

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Town of Groton

MASSACHUSETTS

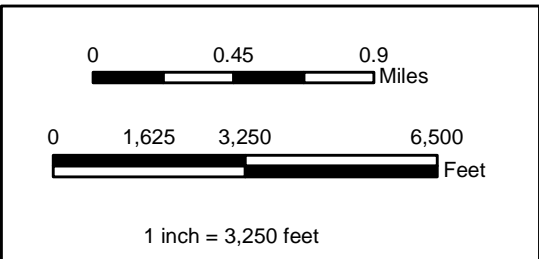
Open Space and Recreation Plan 2012

Open Space Inventory
(includes both protected and unprotected land)

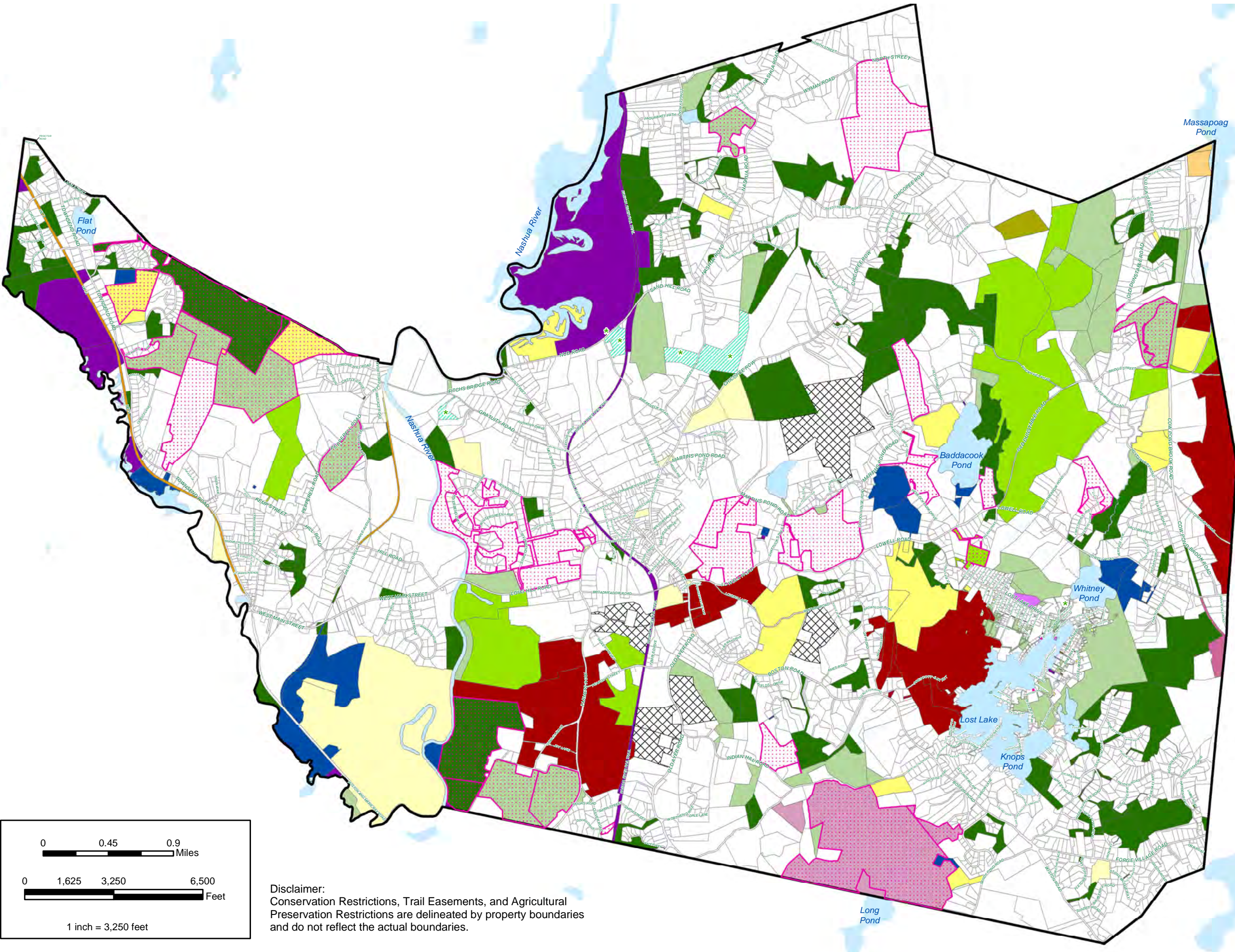


Legend

- Groton Conservation Commission
- Trail Easement
- Groton Conservation Trust
- Dunstable Rural Land Trust
- New England Forestry Foundation
- Mass Audubon
- Commonwealth of Massachusetts
- Town Forest, Cemeteries, Parks & Recreation
- Groton Water Department
- West Groton Water Department
- Agricultural Preservation Restriction
- Conservation Restriction
- Town - General Municipal
- MBTA, B+M
- YMCA
- Grotonwood
- Lawrence Academy
- Groton School
- Massachusetts Institute of Technology
- Westford Sportsmen's Club
- Mountain Lakes Club
- Water Bodies



Disclaimer:
Conservation Restrictions, Trail Easements, and Agricultural Preservation Restrictions are delineated by property boundaries and do not reflect the actual boundaries.



Town of Groton
MASSACHUSETTS
Open Space and Recreation Plan
2012
 Action Plan Map

Nashua & Squannacook River Corridors
 - Continue to acquire, protect, & link land
 - Work regionally to improve water quality & access
 - Explore developing river walk

Protect Massapoag Pond shoreline





Develop Fitch's Bridge as trail connection

Develop lake management plans for Lost Lake/Knops Pond & Baddacook Pond

Track septic system failures, especially in Lost Lake

Maintain Groton Pool & Golf Center as recreation facility & explore new uses & ownership

Legend

-  Open Water
-  Streams
-  Primary Resource Areas
-  Secondary Resource Areas
-  Natural Resource Protection Gaps
-  Municipal Land

