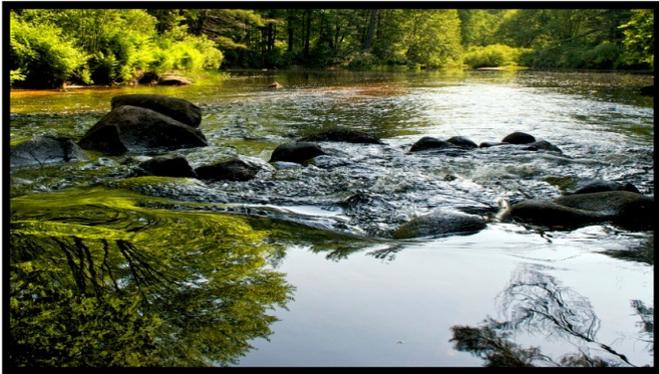




# Open Space and Recreation Plan

*Town of Pepperell – 2016*



Written by Pepperell's Open Space and Recreation Plan Committee  
Coordinated by the Pepperell Conservation Commission –REVISED  
December 2018

**OPEN SPACE & RECREATION PLAN**  
Pepperell, Massachusetts

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## 1. Plan Summary

First written in 1969, the 2016 Town of Pepperell Open Space and Recreation Plan is the sixth revision to the Plan. Pepperell residents, once again, have emphasized the importance of protecting open space for water protection, wildlife habitat, recreational opportunities, and agriculture. Protecting these open spaces will also help to retain the rural character of the town.

Since the 2005 Plan was produced, 47 parcels totaling almost 750 acres have been protected, bringing the town's total acreage of protected open space to over 2,800 acres. Pepperell has many accomplishments since 2005 including the adoption of a Right to Farm Bylaw, which dictates the establishment of an Agricultural Advisory Board; a Forest Management Plan for the Town Forest; management plans for both the Heald Street Orchard and Pepperell Springs Conservation Area; a new municipal public water supply well off Nashua Road; a published trail guide created by the Conservation Commission and Nashoba Conservation Trust; an update of the inventory of protected, Chapter 61, and unprotected, undeveloped properties; construction of a skateboard park; several new athletic fields; and most recently, Pepperell's designation as a Green Community. Pepperell, like many towns in this region, is beginning to recover from some challenging financial times but we have continued to protect open space by working with our State and non-profit partners, as well as with landowners.

Development of this 2016 Open Space and Recreation Plan was a community project that has encouraged all residents to think about the importance of Pepperell's existing open space and recreation land and to project how those assets can be preserved and enhanced in the future. This plan has the following components:

- 1) A historical outline of the development of the town, with information on current demographics and expected growth and development patterns.
- 2) A survey and assessment of the natural resources of the town and their value to residents with special emphasis on water resources, geology, wildlife, and plant communities.
- 3) An inventory of current open space and recreation land in Pepperell, both private and public.
- 4) A summary of conservation and recreation goals for the community, developed by surveying opinions and values of residents, including a focused effort to reach out to our older residents for their input on this matter as part of a mini grant received by Pepperell's Board of Health.
- 5) A review of the steps that should be taken to achieve these goals.

## **2. Introduction**

### **A. Statement of Purpose**

Pepperell is a rural Massachusetts town in northwestern Middlesex County. The future of Pepperell as a healthy community with a high-quality environment for all citizens continues to be determined by the sensitivity with which we balance our needs for housing, schools, services, and commercial and industrial facilities with the need to preserve natural resources, protect present and future water supplies, set aside open space for conservation and recreation, and consider aesthetic and historic implications in our decision making process. Like many communities in this region, Pepperell is beginning to recover from a slower economy. As Pepperell witnesses an increased interest in commercial and especially in residential development, the town must address how this balance can be maintained.

First written in 1969, and updated in 1976, 1982, 1988, 1997, and 2005, the 2016 Open Space & Recreation Plan (OSRP) has expanded its role as a planning tool for the community. With a clear understanding of the natural resources with which Pepperell has been blessed, town residents, rather than consultants, are once again producing a resource-based plan for the future of Pepperell. There is a common theme running through all of Pepperell's Open Space Plans -- the importance of saving open land and, thereby, the rural character of our town.

When we look at the open space parcels Pepperell has protected, we see properties that protect our drinking water, habitat and wildlife areas, corridors for wildlife and people, and farms producing locally-grown products. There have been gains in the amount of open space preserved and Pepperell has responded to requests for additional playing fields and a skateboard park, which was constructed at Town Field in 2007.

Open Space and Recreation Plans are not regulatory documents, but are guidelines to reflect community input. Specific proposals of the Plan brought forward for implementation are usually subject to town meeting review and vote, especially where regulations, permits, zoning amendments, or major expenditures are involved. These decisions will resonate for years to come, and is in every Pepperell resident's best interest that those decisions be informed by the best available information.

### **B. Planning Process & Public Participation**

Planning for the 2016 Open Space & Recreation Plan got underway during 2013 when the Conservation Commission undertook an update of the open space map and open space inventory. The map was produced in GIS by the Northern Middlesex Council of Governments (NMCOG). This map continues to be updated on a regular basis.

Representatives from several departments offered their expertise to the Open Space and Recreation Planning Committee. In addition to the Conservation Commission (Robert Elliott, Chairman; Emily Boeing, Timothy Dinsmore, Kristina Masterson, Linda Moody, Robert Rand, Patricia Swain Rice, and Peter Steeves) and the Recreation Commission (Timothy Doyle, Chairman; M. Alise Herrera, and Brendan McNabb), the following individuals volunteered their time, efforts, and considerable talents: Mark Andrews (Town Administrator), Nancy Archer (Recreation Department Program and

Facilities Director), Maureen Bolger (Assistant Assessor), Martin Cadek (IT Director), Carmen DeFillippo (Waste Water Treatment Plant Chief Operator), Stacey Drahusz (former Recreation Department Program and Facilities Director), Kalene Gendron (Health Agent), Ken Hartlage (Pepperell Resident), Ken Kalinowski (DPW Director & Town Engineer), Peggy Mazzola (Administrative Assistant), Susan McCarthy (Council on Aging), John Moak (former Town Administrator), Jeff Sauer (former Town Clerk), Sue Snyder (former Planning Administrator), Siri Stromsted (Pepperell Resident), Beverly Woods (Executive Director at NMCOG), and Carlin Andrus (GIS Specialist at NMCOG) under the coordination of Paula Terrasi (Conservation Agent).

A community survey to gather information about our citizen's priorities and views on the use of open land and recreation opportunities in town was created by the Conservation and Recreation Commissions with input from other town boards. A link to the survey on Survey Monkey, was available on the Town of Pepperell website and copies of the survey were provided at the Senior Center, Lawrence Library, and Town Hall at the Conservation Commission office beginning on April 4, 2014. A press release to encourage residents to participate in the survey was published in the Nashoba Valley Voice. All department heads received an email asking them to forward the survey to their respective departments. The Recreation Commission forwarded the survey to the various in-town sports leagues as well as to their email database. The Friends of Pepperell Recreation and the Nashoba Conservation Trust (NCT) placed a link to the survey on their websites. Responses to the survey were due on April 28, but the deadline for responses was then extended two weeks to allow time for additional comments. Survey questionnaires were provided at the polling station for the Town Clerk election on April 28 for residents who had not yet completed the survey. Residents completed 185 surveys, which were then tabulated by Survey Monkey. The results are attached as Appendix B.

The opportunities to gather additional feedback over the past two years included meetings and conversations with State and local land protection organizations and groups including the Squan-a-Tissit Chapter of Trout Unlimited, Pepperell Horse Owner's Association, Nashoba Valley Amateur Radio Club, Boy Scouts, individuals and groups using conservation areas, Friends of Pepperell Recreation, and local sport's teams, including baseball, soccer, football, and lacrosse. These groups not only provided invaluable feedback but most have donated time and money to the protection and maintenance of our open spaces and athletic facilities.

In addition, a mini grant awarded to the Board of Health in 2016 focused on gathering input from adults 65 and older, an age group expected to see increased growth in the coming years. A survey was created by the Board of Health (See Appendix C) and each town department was asked to provide input. Department heads were encouraged to consider Pepperell's aging population in their future decision making responsibilities. An information gathering session with representatives of the Board of Selectmen, Board of Health, and Conservation Commission, led by several representatives of NMCOG, was held at the Pepperell Senior Center on April 22, 2016, with many seniors in attendance. Data collected from the survey, as well as information obtained at the information gathering session, were analyzed to identify how Pepperell can encourage healthy, active lifestyles for older residents. Representatives of NMCOG created both a brochure, with a

map of walking and biking opportunities, and a chapter “Achieving Healthy Living for Older Adults”, which is included in this OSRP in Appendix C.

Discussions at Conservation and Recreation Commission meetings throughout the update process, helped to identify information to be included in the Plan.

**C. Enhanced Outreach and Public Participation**

There are no identified environmental justice populations in Pepperell according to MassGIS data.

### **3. Community Setting**

**A. Regional Context**

**1. Physical location and major watershed address**

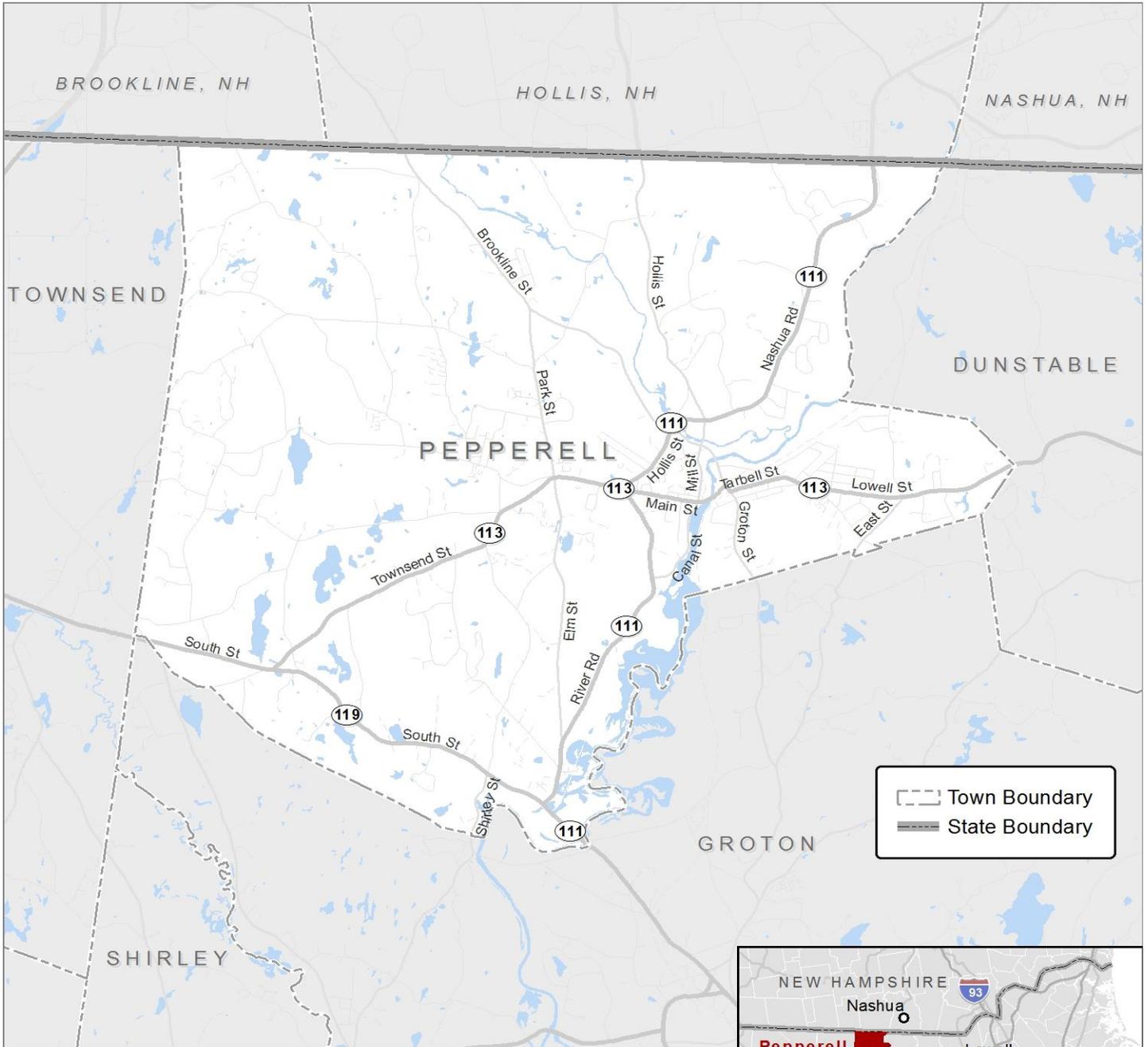
Pepperell is located thirty-five miles northwest of Boston, bordering New Hampshire, in northwestern Middlesex County at the confluence of the Nissitissit and Nashua Rivers as shown on Map 1, Regional Context. The town of Pepperell is characterized by gently rolling hills above the valley formed by the Nashua River. Nashua, Lowell, Fitchburg, and Leominster are nearby, but major transportation routes have bypassed the town, leaving it more isolated and less developed than many other towns in the north central region of Massachusetts.

Pepperell covers 23.2 square miles of land and water of which 22.6 square miles are land and 0.6 square miles are water. Pepperell is within the Nashua River watershed with two major rivers, the Nashua and Nissitissit. There are numerous water bodies in Pepperell including Heald Pond, Coon Tree Pond, and many tributaries to our rivers.

Once a thriving factory and farming town, Pepperell has become predominantly a commuter suburb, with little industrial activity. Pepperell has a small industrial park that has seen a slight increase in the occupation rate over the past few years. Of the numerous 19<sup>th</sup> century shoe factories and paper mills once located in Pepperell, only the Pepperell Braiding Company remains. In 1997 Bemis Bag, long a local landmark, closed its facilities, but a recent purchase and ongoing renovations of this commercial site for office condominiums, will bring back to life a 190,000 square foot building in close proximity to downtown.

The Pepperell Paper Mill ceased operation in 2002. Demolition of the privately-owned paper mill was completed in 2011, leaving a 13.9 acre property in the center of town available for sale. The property is zoned for commercial/industrial and mixed use. Lubricating oil was discovered in the soil during the demolition and the site’s proximity to the Nashua River, which floods portions of the property during high flow events, added an additional challenge but work is underway to redevelop the site. A local business owner has purchased the property with plans to construct a 100,000 square foot office building to support their business operations.

The 1997 Open Space and Recreation Plan stated that there were several large open parcels, including three 150 to 200 acre farms and a privately owned spring water company that should be prioritized for protection. By 2001, the state had purchased



Town Boundary  
 State Boundary



**Northern Middlesex Council of Governments**  
 40 Church Street, Suite 200  
 Lowell, Massachusetts 01852  
 (978) 454-8021 nmcog.org

**Sources:**  
 MassDOT/NMCOG (2013 roads); MassGIS (town boundaries); MassDEP (2009 hydrology); NH GRANIT (NH towns, roads)

Data provided on this map is not sufficient for either boundary determination or regulatory interpretation.

Produced by NMCOG: 4/30/2015



permanent Agricultural Preservation Restrictions (APR) on two of the three farms, which included financial participation from the town. The APR Program works with willing landowners to preserve and protect their agricultural land in perpetuity in exchange for financial compensation. The third farm, Gardner Farm, continues to work with the Massachusetts APR Program to protect their agriculture property in perpetuity. In 2015, almost 70 acres of the Gardner Farm on the west side of River Road, which abuts the Nashua River, were protected under this program.

In December 2005, the 265-acre D.S. Waters of America property, which included a former bottling plant, was purchased by the Trust for Public Land on behalf of the Pepperell Springs Preservation Coalition. A 10-acre envelope was carved out around the former bottling plant and transferred to the Town of Pepperell, with a conservation restriction held by the Nashoba Conservation Trust. Ownership of the remaining 255 acres was transferred to the Town of Pepperell with a conservation restriction held by the Massachusetts Division of Fisheries and Wildlife (DFW).

Pepperell is on the fringe of several population centers, including metropolitan Boston. Residents work, shop, and play in Nashua, Lowell, Fitchburg, the Route 128 area, Boston, and other areas, without any one urban area dominating the community. Newspapers from Lowell, Boston, Nashua, Fitchburg, Ayer, and even Worcester circulate here. The federal government considers Pepperell the western-most part of the Lowell Metropolitan Statistical Area; however, the town is within the jurisdiction of the Southern Middlesex Land Registry (in Cambridge), rather than the Northern District (Lowell). Lawrence Library is part of the State's central library region, with headquarters in Worcester. Pepperell belongs to one of the largest regional school systems in the state with the adjoining towns of Townsend and Ashby, including grades K-12. High school-aged students from Pepperell may opt to attend the Nashoba Valley Technical High School in Westford and students in grades 7-12 may attend the Francis W. Parker Charter Essential School on Devens.

Pepperell has a larger population than any of the towns that border it (Dunstable, Groton, and Townsend, Massachusetts and Brookline and Hollis, New Hampshire). The residents of Pepperell tend to be less affluent than those living in surrounding towns. Its location on the fringe of the built-up portions of the Boston metropolitan area assures Pepperell should continue to experience population growth and development with the improved economy.

In 2015, Pepperell received designation as a Green Community and received its first grant award in the amount of \$152,910 to begin implementing energy efficiency measures and to take advantage of other programs to lower energy use in our municipal offices and buildings and schools.

Pepperell passed a Right to Farm Bylaw at Spring Town Meeting in May 2006. Under the Right to Farm Bylaw, an Agricultural Advisory Board, which is appointed by the Board of Selectmen, acts as an advocate for Pepperell's farming community. The Agricultural



Advisory Board coordinates a Farmer’s Market held on Town Field every Saturday morning during summer and fall.

The town continues its efforts to preserve the rolling farmlands, winding country lanes, and fields lined by stone walls so common in earlier days. Retaining some of the rural feel of Pepperell, especially properties that include farmland, has been the focus of many land protection projects. Pepperell’s residents and those from surrounding communities enjoy the bounty of fresh fruits and vegetables as well as other fresh products and the aesthetic value of open farmlands and meadows. The Trust for Public Land, working with the town and the Nashoba Conservation Trust, purchased over 140 acres from the Keyes family. Approximately 100 acres of the Keyes property was transferred to the Nashoba Conservation Trust with a conservation restriction held by the Town of Pepperell. The remaining 40-acre parcel is owned by the Town of Pepperell Conservation Commission with a conservation restriction held by the Nashoba Conservation Trust. The scenic views of agricultural fields leased to an abutting farmer emphasizes the town’s commitment to protecting the rural character of the community.

## 2. Shared Resources

**Nashua River** – Known for recreational and scenic values, the 36-mile Nashua River provides boating, fishing, and nature observation opportunities. The Nashua River in Pepperell includes Pepperell Pond, a 300-acre impoundment created by the hydro dam at the Eagle Creek Renewable Energy Company, formerly Pepperell/Swift River Hydro, on Main Street. The Nashua River has been powering the hydro plant for almost 160 years. Pepperell Pond is a favorite for bass fishermen who hold tournaments on the river. The Town of Pepperell Conservation Commission continues to partner with the Nashua River Watershed Association (NRWA) to identify land along its banks for protection. To date, over 185



miles of riverfront have been protected. In 1969, the NRWA officially began as a non-profit environmental group. Marion Stoddart, whose vision for a clean river in the 1960’s and others involved in the Nashua River Clean-up Committee, started the nonprofit, which will be celebrating their 50<sup>th</sup> year in 2019. The NRWA is a dedicated organization which supports the 32 cities and towns within the Nashua River watershed with their efforts to protect the river and greenway within these communities. The NRWA, is known for its greatest success story, the cleanup of the Nashua River. Pepperell has two locations for launching canoes and kayaks on the Nashua River, one along Canal Street near the intersection of Main Street on Town of Pepperell Conservation Commission property and the second behind the former Kemp’s horse trotting track on River Road, across from the Town Forest. The DFW offers a canoe and kayak launch area just south of the Rte. 119

Bridge and the Petapawag boat launch in Groton provides a location for launching motor boats. In addition, fishermen can often be seen casting a line from the banks of the river. The formation of a coalition of organizations to address the widespread aquatic invasive plants present in the river, especially water chestnuts (*Trapa natans*), was formed in 2015. This effort is being coordinated by the NRWA, with funding assistance provided by Pepperell Hydro Company, the former owners of the hydro facility. The fast-spreading water chestnuts and other invasives are limiting the recreational opportunities within the river by narrowing boating channels and eliminating access to sections of the river. A \$300,000 grant awarded to the Town and managed by the NRWA, was used in 2007 and 2008 to harvest some of the water chestnuts. When grant funds were exhausted and no new funds available, the water chestnuts continued to spread rapidly. Currently, there are over 90 acres of water chestnuts in Pepperell and Groton.

**Nissitissit River** – A coldwater fishery with headwaters at Lake Potanipo in Brookline, NH, the 10.5 mile Nissitissit River travels from Brookline, NH through Hollis, NH where it enters Pepperell before it empties into the Nashua River in Pepperell just downstream of Pepperell's Covered Bridge on Groton Street. The Nissitissit is used for canoeing and kayaking and nature observation and attracts fishermen, especially fly fishermen, from around the region. Known as one of the cleanest rivers in Massachusetts, groups like the Squan-A-Tissit Chapter of Trout Unlimited have focused their efforts on improvements to the Nissitissit. These efforts include contributing to three-sided or bottomless culverts and financial support for the removal of the Turner Dam on Hollis Street. Much of the land along the river has been protected by the DFW, often working with the Nissitissit River Land Trust, the NRWA, and the Town of Pepperell Conservation Commission. Under the Squannacook and Nissitissit River Sanctuary Act (MGL Chapter 132A, Section 17), the Nissitissit River and associated named tributaries are recognized as Outstanding Resource Waters of the Commonwealth and the Act limits new point-source discharge.

**Nashua River Rail Trail** - A shared resource with the towns of Ayer, Groton, Dunstable, and the City of Nashua, NH, portions of the Department of Conservation and Recreation's paved Nashua River Rail Trail runs through Pepperell. In town, parking for the rail trail is available at the parking lot where the trail crosses Groton Street. The trail is used for bicycling, walking, running, horseback riding, roller skating, wheelchairs, snowshoeing, and cross-country skiing.

**Public Water Supply** - Pepperell has three public municipal water supply well sites. The public well site on Jersey Street has two well heads. One of the well heads on Jersey Street is located approximately 1,000 feet from Groton's Nashua Road area. The second well head on Jersey Street is approximately 2,000 feet from the Groton town line and within the same aquifer. For this reason, in addition to educating Pepperell residents, educating Groton residents about responsible use of pesticides and nitrate loading from septic systems can help prevent groundwater contamination of the two wells in Pepperell. A second well site is located on Bemis Road. This site also includes two well heads. Most of the land to the south of this well site has been protected by Pepperell's Water Division,

Pepperell's Conservation Commission, and the Nashoba Conservation Trust. The third public water supply well site is located off Nashua Road on the Hollis, NH state line. The Town of Pepperell purchased property in Hollis, NH to further protect the well site. Pepperell's residents have a long-standing history of supporting land conservation efforts for the protection of our wells and gave protecting lands surrounding water supplies, wells, and aquifers the highest rating of importance in the Open Space and Recreation Plan Survey. Pepperell's Water Division has posted signage near public drinking water supply wells to alert the public of well protection areas.

**Pepperell Waste Water Treatment Facility** - Through an inter-municipal agreement, the Pepperell Wastewater Treatment Facility treats sewer discharges from Groton as well as Pepperell. The facility releases treated water into the Nashua River.

**State Program/ACEC's** - There are two Areas of Critical Environmental Concern (ACECs) within Pepperell's town boundaries. ACEC's are places in Massachusetts that receive special recognition because of the quality, uniqueness, and significance of their natural and cultural resources. In 2002, 25,630 acres in the Nashua and Merrimack River watersheds in the towns of Ayer, Dunstable, Groton, Pepperell, and Tyngsboro received designation as the Petapawag ACEC. The Petapawag ACEC includes over 2,000 acres in Pepperell. At the same time, 37,450 acres in the Nashua River watershed in the towns of Ashby, Ayer, Groton, Harvard, Lancaster, Lunenburg, Pepperell, Shirley, and Townsend received designation as the Squannassit ACEC. The Squannassit ACEC includes over 6,000 acres in Pepperell.

**Devens Regional Household Hazardous Products Collection Center** - In September 2016, Pepperell became a member of the Devens Regional Household Hazardous Products Collection Center. Fourteen towns now participate in this regional hazardous waste collection disposal service, which provides multiple opportunities for residents and small businesses to dispose of toxic household items and small business waste.

### 3. Regional relationships

Pepperell continues to work with many land protection organizations to evaluate and purchase properties for conservation and resource area protection. By working to connect corridors with abutting towns and across the NH state line for wildlife and people, Pepperell can create trail systems that provide additional recreational opportunities and improved habitat for wildlife. The Nashua River Rail Trail is one example of a successful regional planning project. In addition, organizations like the Nashua River Watershed Association and the Northern Middlesex Council of Governments provide workshops and programs to assist with regional planning.

Pepperell also belongs to the Nashoba Associated Boards of Health, which provides public health services to fifteen area communities. The Nashoba Associated Boards of Health Agent reports to the Pepperell Board of Health and enforces State Sanitary and Environmental Codes and Massachusetts General Codes related to health services.

Pepperell Seniors together with Groton Seniors participate in activities in and around Boston. Trips include transportation and group discounts, which make these opportunities enticing. In addition to providing trips to Boston, the Pepperell Senior Center provides transportation to older residents, Veterans, and the disabled in Pepperell.

Pepperell is a member of the Northern Middlesex Council of Governments (NMCOG). NMCOG provides comprehensive regional planning to the City of Lowell and eight other communities in Northern Middlesex County. In addition, NMCOG provides GIS data and mapping applications. NMCOG arranged a Spring 2014 flyover, which provides improved GIS mapping capabilities to this region.

Pepperell belongs to a regional school district known as North Middlesex Regional. This includes students from Pepperell, Townsend, and Ashby. Pepperell students in kindergarten through grade 8 attend schools located in Pepperell. Students in grades 9 through 12 attend school at the North Middlesex Regional School High School in Townsend. The school district manages all public schools within the three towns.

Nashoba Valley Technical High School is the region's vocational high school. Students from Chelmsford, Groton, Littleton, Pepperell, Shirley, Townsend, and Westford are served by this vocational high school.

The Francis Parker Charter Essential School on Devens is a regional charter school for students in grades 7 through 12 attended by many Pepperell students.

The Pepperell Recreation Commission uses a regional approach to expand the many programs they offer. The Pepperell Ski Club is available to students in grades 6 through 12 (grade 5, if there is room) in Pepperell, Ashby, and Townsend. The Recreation Commission also offers "Trips and Tour", where residents from Pepperell and other communities are provided with opportunities to enjoy bus tours to various destinations.

TAP basketball, North Middlesex Pop Warner football, North Middlesex Youth Lacrosse, and North Middlesex Youth soccer are organized sports organization teams run by non-profit organizations. These programs are available to students in Pepperell, Ashby, and Townsend.

## **B. History of the Community**

Before the arrival of European settlers, the native inhabitants of New England fished and hunted available game, gathered bark, berries and nuts, and farmed areas that they had cleared. Their lifestyle was typically mobile - settlements were moved according to the availability of food, responding to seasonal dictates. The shad, salmon, and alewife fish runs on the Nashua River undoubtedly drew Native Americans to this site in pre-settlement times. Pepperell's location along primary east-west trails, the presence of fording sites on both the Nissitissit and Nashua Rivers, and the wide range of available natural resources make it likely that Nipmuck Native American sites were located on well drained terraces and knolls along both Rivers, especially at confluence points, rifts, and fords. In fact, archaeologists have documented an often-used Native American encampment site on the Nashua River, not far from its confluence with the Nissitissit River.

The land that now makes up Pepperell was included in the original grant of Groton Plantation in 1655, which stretched from present-day Harvard all the way into part of

Nashua. Indian resistance discouraged settlement until after peace was secured in 1713. During the 1720's farmers had begun to settle along the west bank of the Nashua River, and the population increased sufficiently to organize the portion of Groton beyond the Nashua River as the Groton West Parish in 1742. The parish became the District of Pepperell in 1753 and was incorporated as a town in 1775.

Nearly all residents of Pepperell worked the soil until after 1800. Agriculture, formed the economic basis of the community, and several grist and sawmills were established. In the early nineteenth century, a number of enterprises attempted to harness the abundant waterpower of the rapids of the Nashua and Nissitissit Rivers, the most successful and enduring being the establishment of a paper mill on the Nashua River by And Emerson in 1834 or 1835. Through a succession of owners this operation was continued at this site until 2002. A mill village developed along both sides of the Nashua River near the paper mill and became known as East Pepperell. A railroad from Worcester to Nashua was constructed through the village in 1848. Meanwhile, the area around the Meeting House, a mile to the west, saw the construction of many houses by the town's most prosperous professionals and businessmen.

After the Civil War a second major industry came to Pepperell with the construction of a 70-employee shoe factory by Albert Leighton in East Pepperell in 1868. By 1890 several hundred workers were employed in a much larger factory on the original site, and shoes had become even more important to the town's economy than paper. The era of shoes was short-lived. Crippled by a depression after 1893 and by competition from even larger, better-financed factories elsewhere, the shoe factory closed its doors in 1900. Two years later it opened under new management, but then burned to the ground a few months later. The factory was never rebuilt.

The shoe boom had seen Pepperell's population rise from 1,842 in 1870 to 3,701 in 1900. The collapse of that industry left a void in the local economy that would not be filled until long-distance commuting became feasible in the 1920's. Population plummeted to 2,953 in 1910 and 2,468 in 1920. Not until after 1950 would the town have more inhabitants than it did in 1900.

In the 1950's and 1960's Pepperell began to shed its heritage as a factory and farming town when good roads and cheap financing provided by the federal government led to the building of more than 600 new homes, the first new construction of any consequence in town since the 1890's. After 1970, the pace of new construction quickened, with more than 1,000 units of new housing in the 1970's and another 1,000 in the 1980's. Population rose from 3,460 in 1950 to 11,787 in 2013. Nearly all of these new inhabitants worked outside of Pepperell, some in distant communities.

Most of the new construction has taken place outside of areas built up before 1900, on land formerly used for agriculture. The town has two adjacent districts of historical buildings, the first radiating out several blocks in each direction from Town Hall, the second the old mill village of East Pepperell, on both banks of the Nashua River. The Pepperell Historical Commission succeeded in having the former area designated as the "Pepperell Center National Historical Register District" by the Massachusetts Historical Commission in August 1994. In 1995, following an application by the Historical Commission, this area was designated the Pepperell Center National Historic Register

District by the U.S. Department of the Interior. Twice Town Meeting has not approved a Historic District By-Law to protect these areas.

**C. Population Characteristics**

Once a farming and manufacturing town, today Pepperell has become largely a residential community with a small but diverse industrial park. A braiding factory, a collection of small businesses and a handful of operating farms are all that remain of Pepperell’s historic economic base. The Pepperell Paper Company, with its prominent factory buildings on Main Street closed its doors in 2002 and the buildings were razed in 2010. The dam, which was originally used to produce power for the former paper company, is now owned and operated by Eagle Creek Renewable Energy.

1. Population Trends

From 1980 to 2010, Pepperell’s population increased 54% but from 2010 to 2015, Pepperell witnessed a -4.8% decrease to its population. See Table 3.A.

**TABLE 3.A Population Changes for Pepperell**

	1970	1980	1990	2000	2010	2011	2012	2013	2014	2015	2020 (projected)
U.S. Census*	5,887	8,061	10,098	11,142	11,497	N/A	N/A	N/A	N/A	N/A	13,028
Local Census	N/A	7,970	9,660	11,189	12,300	12,108	11,983	11,787	11,649	11,705	

Source: Pepperell Town Clerk’s Office and MISER Populations Projections 2000-2020

\*Note: The U.S. Census is completed every 10 years

Table 3.B shows the changes in age ranges between 1990 to 2010 and 2000 to 2010. Pepperell’s young adults in the 25 to 34 age range saw a steady population decrease from the 1990 Census to the 2010 Census. This was also true of middle-aged residents in the 35 to 44 age range. Those in the age range of 45 to 85+ saw increases between 1990 and 2010. Pepperell is becoming a community of predominantly older residents.

According to the 2014-2018 Pepperell Affordable Housing Production Plan prepared by NMCOG, “Between 2020 and 2035, the 75+ age group is expected to grow the most – increasing by an additional 137%. Residents aged 60 and above are projected to increase by 47% from 2020 to 2035.” This statistic highlights why issues and concerns raised by older residents as part of the 2016 Board of Health Healthy Chapter grant are given serious consideration by town officials when making decisions about the future of Pepperell.

**TABLE 3.B U.S. Census Age Comparison 1990, 2000, and 2010**

Age Range	1990 Census	2000 Census	Change 1990 - 2000	2010 Census	Change 1990 - 2010	Change 2000-2010
0-4	966	867	-99	594	-372	-273
5-9	853	1,021	168	782	-71	-239
10-14	824	990	166	914	90	-76
15-19	727	810	83	916	189	106
20-24	526	406	-120	638	112	232
25-29	791	550	-241	514	-277	-36
30-34	1,177	873	-304	439	-738	-434
35-39	1,119	1,180	61	665	-454	-515
40-44	931	1,079	148	936	5	-143
45-49	606	955	349	1,213	607	258
50-54	305	812	507	1,086	781	274
55-59	326	473	147	936	610	463
60-64	230	294	64	741	511	447
65-69	194	260	66	404	210	144
70-74	185	219	34	247	62	28
75-79	184	160	-24	213	29	53
80-85	87	108	21	135	48	27
85+	67	85	18	124	57	39
<b>Total</b>	<b>10,098</b>	<b>11,142</b>	<b>1,044</b>	<b>11,497</b>	<b>1,399</b>	<b>355</b>

Source: TOP Finance Team Report 5 Year Budget Projection Plan

Data from the U.S. Census for the years 2000 and 2010 show the change in population Pepperell has experienced over that ten-year period in comparison with surrounding towns. Statistics show Pepperell's overall population is staying consistent but there is a significant change to specific age groups.

**TABLE 3.C Population Change Comparison with Surrounding Towns**

Town	2000	2010	% Change
Ashby	2,845	3,074	8.05
Ayer	7,287	7,427	1.92
Dunstable	2,829	3,179	12.37
Groton	9,547	10,646	11.51
Lancaster	7,380	8,055	9.15
Littleton	8,184	8,924	9.04
Lunenburg	9,401	10,086	7.29
<b>Pepperell</b>	<b>11,142</b>	<b>11,497</b>	<b>3.19</b>
Shirley	6,373	7,211	13.15
Townsend	9,198	8,926	-2.96
Tyngsboro	11,081	11,292	1.90

Source: MA 2010 Census

With so many young adults and middle-aged residents leaving Pepperell, the town is looking at future planning to address this downward movement. This includes investigating local zoning regulations; construction of a new high school facility; continuing efforts to maintain our environmental assets; and formation of an Economic Development

Committee, which advises the Board of Selectmen and Planning Board on issues impacting economic growth and the overall quality of life in Pepperell.

The population decrease is reflective in our school census as noted in Table 3.D. Grades 5 through 8 have 621 children where a similar four grade sampling of K to third grades have nearly 19% fewer students when comparing these two age ranges.

**Table 3.D Current Student Enrollment Grades Kindergarten to 8<sup>th</sup> Grade**

Nissitissit Middle School Student Enrollment	Varnum Brook Elementary School Student Enrollment
5 <sup>th</sup> Grade 160	Kindergarten 125
6 <sup>th</sup> Grade 130	1 <sup>st</sup> Grade 126
7 <sup>th</sup> Grade 166	2 <sup>nd</sup> Grade 127
8 <sup>th</sup> Grade 165	3 <sup>rd</sup> Grade 128
Total: 621	4 <sup>th</sup> Grade 161
	Total: 667

Source: New England School Development Council 4/10/2013

Table 3.E provides a history of enrollment rates, by grade, of students in the North Middlesex School Regional School District, from 2002 through 2013. Table 3.F below shows an overall -21.0% decrease in school enrollment during this time period. This decrease can be attributed to fewer residents in the 25 to 40 age range who would typically have children in the school system.

**TABLE 3.E Pepperell, MA Residents North Middlesex Regional School District**

<i>Historical Enrollment by Grade</i>																		
Birth Year	Births	School Year	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	K-12	PK-12
1997	150	2002-03	95	143	185	151	183	176	211	182	184	194	188	142	122	120	2181	2276
1998	187	2003-04	118	160	158	182	155	183	175	218	183	187	155	169	132	119	2176	2294
1999	168	2004-05	124	152	154	176	181	155	174	179	217	182	160	138	165	119	2154	2278
2000	149	2005-06	114	166	151	156	178	171	159	168	168	218	155	140	124	156	2110	2224
2001	144	2006-07	133	117	176	157	154	180	169	160	169	173	173	144	131	122	2025	2158
2002	155	2007-08	0	154	121	173	159	156	172	179	151	175	150	160	139	120	2009	2009
2003	171	2008-09	0	152	157	123	170	155	155	165	179	153	125	145	156	133	1968	1968
2004	115	2009-10	0	129	157	155	122	170	152	153	155	178	108	119	143	143	1884	1884
2005	124	2010-11	0	122	126	160	151	124	170	156	159	161	138	110	125	141	1843	1843
2006	118	2011-12	0	124	121	129	161	150	127	165	151	161	128	135	111	120	1783	1783
2007	111	2012-13	0	131	130	120	129	161	152	126	159	166	102	113	129	105	1723	1723

Source: New England School Development Council 4/10/2013

**TABLE 3.F**

<i>Historical Percentage Changes</i>			
Year	K-12	Diff.	%
2002-03	2181	0	0.0%
2003-04	2176	-5	-0.2%
2004-05	2154	-22	-1.0%
2005-06	2110	-44	-2.0%
2006-07	2025	-85	-4.0%
2007-08	2009	-16	-0.8%
2008-09	1968	-41	-2.0%
2009-10	1884	-84	-4.3%
2010-11	1843	-41	-2.2%
2011-12	1783	-60	-3.3%
2012-13	1723	-60	-3.4%
<b>Change</b>		<b>-458</b>	<b>-21.0%</b>

Source: New England School Development Council 4/10/2013

2. Population Density

Despite the sizeable increase in Pepperell’s population from 5,887 residents in 1970 to 11,497 residents in 2010, Pepperell has a per square mile population density of 495.6 people. The average population density of Massachusetts in 2010 was 840 people. Pepperell’s population density is higher than the abutting towns of Groton, Dunstable, and Townsend, but Pepperell still enjoys the benefits of its rural heritage.

3. Socio-economic Characteristic

IN 2015, of Pepperell’s population age 25 years and over, 94.4% have obtained a high school or higher education, 40.2% have obtained a bachelor’s degree or higher, 15.0% have obtained a graduate or professional degree, and 4.8% are unemployed.

The occupations by median earnings during 2015 were as follow: computer and mathematical occupations 103,259; life, physical, and social science occupations 88,409; architecture and engineering 87,396; management 70,450; business and financial operations 69,718; and installation, maintenance, and repair occupations 65,417.

Most residents in Pepperell have two vehicles per household but many have three. With a lack of public transportation available, 84% of residents drove their own car to work, 8% carpooled, and 5% were able to avoid the commute altogether by working at home. The majority of workers commuted between 30 to 50 minutes to work. Pepperell residents spend a considerable amount of time each day in their vehicles driving to and from work.

Pepperell is a predominantly white community with .43% black, .12% American Indian, 1.16% Asian, .17% other, 1.2% two or more races, and 1.7% Hispanic or Latino.

Pepperell’s residential tax rate of \$16.53 for FY2016 was relatively low among the 351 towns in the state but comparable to the abutting town of Dunstable (\$16.55), but lower than Groton (\$18.78) and Townsend (\$19.80). In summary, relative to many towns in Massachusetts, Pepperell continues to be a community of relatively affordable housing, strong community tradition, but compromised in the ability to provide municipal services at a level consistent with today’s standards.

Both median income and property value per capita remain in the medium range for our region (See Tables 3.G and 3.H). Values of single-family houses have decreased 13.53% since FY09 and house values in Pepperell remain affordable for the region (See Table 3.I).

**TABLE 3.G Income Per Capita**

Groton	\$57,386.00
Dunstable	\$50,766.00
Littleton	\$41,258.00
Tyngsboro	\$36,269.00
Lunenburg	\$32,825.00
<b>Pepperell</b>	<b>\$32,346.00</b>
Townsend	\$29,308.00
Lancaster	\$28,363.00
Ashby	\$26,657.00
Ayer	\$26,154.00
Shirley	\$23,421.00

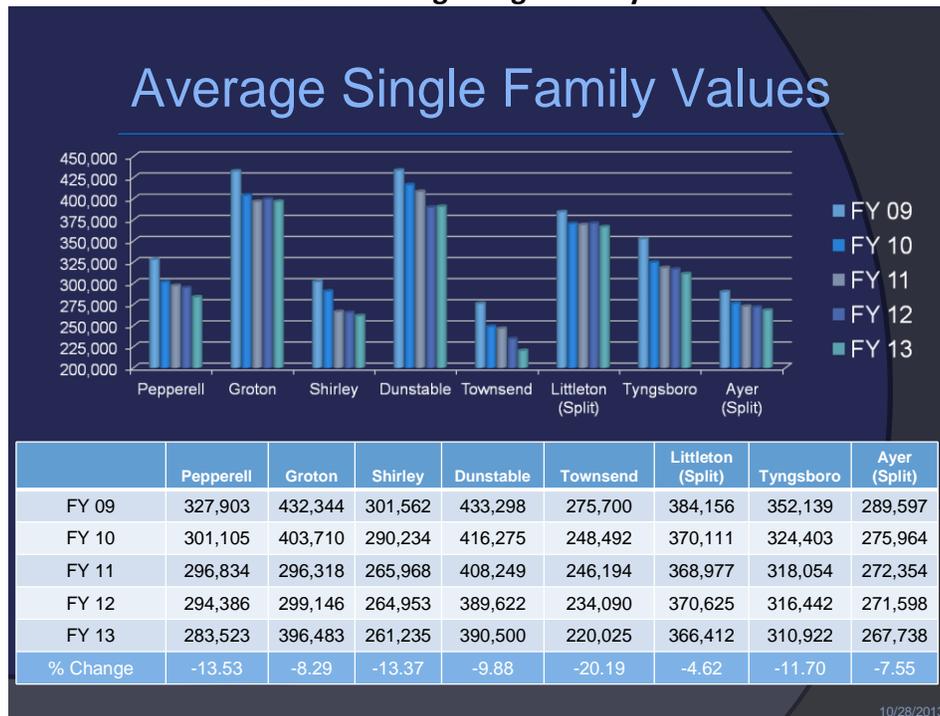
Source: Mass DOR Statistics 2013

**TABLE 3.H Equalized Valuation Per Capita**

Littleton	\$177,133.00
Dunstable	\$153,025.00
Groton	\$148,814.00
Ayer	\$138,814.00
Tyngsboro	\$133,622.00
Lunenburg	\$121,006.00
<b>Pepperell</b>	<b>\$104,572.00</b>
Lancaster	\$104,543.00
Ashby	\$99,375.00
Townsend	\$94,320.00
Shirley	\$84,600.00

Source: Mass DOR Statistics 2013

**TABLE 3.I Average Single-family Values**



Source: Pepperell Board of Assessor's Tax Classification Hearing 2014

**4. Business**

Pepperell is primarily a residential, commuter community, with pockets of commercial and industrial development. Table 3.J compares the number of establishments, average monthly employment, and average weekly wage in Pepperell with surrounding communities and the State for the fourth quarters of 2010 and 2016. According to the State Department of Labor and Workforce Development (EOLWD), Pepperell reported 248 establishments in Q4 of 2010 and 260 establishments in Q4 of 2016, an increase of 4.8%.

Pepperell also witnessed an increase in average monthly employment and average weekly wage during that time period. In the fourth quarter of 2016, Pepperell ranked sixth in average weekly wages, behind Littleton, Shirley, Ayer, Groton, and Tyngsboro.

Pepperell's average weekly wage was 69% of the State's average weekly wage during that same time period.

**TABLE 3.J Establishments, Employment, and Wages**

Community	Establishments		Average Monthly Employment		Average Weekly Wage	
	2010 (Q4)	2016 (Q4)	2010 (Q4)	2016 (Q4)	2010 (Q4)	2016 (Q4)
Ashby	82	78	274	375	\$696	\$754
Ayer	355	321	8,191	4,670	\$1,227	\$1,072
Dunstable	67	78	254	298	\$747	\$879
Groton	269	277	3,185	3,686	\$944	\$984
Lancaster	194	190	2,284	2,246	\$727	\$820
Littleton	347	382	4,824	7,999	\$1,411	\$1,717
Lunenburg	225	269	2,237	2,497	\$790	\$882
<b>Pepperell</b>	<b>248</b>	<b>260</b>	<b>1,416</b>	<b>1,522</b>	<b>\$739</b>	<b>\$937</b>
Shirley	155	167	2,497	3,030	\$1,107	\$1,306
Townsend	184	200	1,992	2,045	\$672	\$856
Tyngsboro	37	392	4,336	4,792	\$866	\$945
	9					
<b>State</b>	<b>221,723</b>	<b>249,802</b>	<b>3,191,502</b>	<b>3,537,447</b>	<b>\$1,219</b>	<b>\$1,352</b>

Source: ES202- Reports

During the second quarter of 2017, the Town of Pepperell had 268 establishments. Table 3.K lists the number of establishments, total wages, average monthly employment, and average weekly wages for the second quarter of 2017. Pepperell experienced an overall growth of 2.1% in average monthly employment from April 2017 to June 2017. The industries with the largest increases were Natural Resources and Mining (this includes agriculture) with 160%, Professional Services with 6.2%, and Construction with 3.1%. Keep in mind that the statistics for Natural Resources and Mining coincide with the beginning of the growing season and an influx of seasonal workers. Over the last few years, Pepperell has seen a significant number of people starting small businesses and working from their homes, explaining the increase in Professional Services. Like other regions in the state, Pepperell is currently experiencing increased growth in new residential construction and maintenance, shown by the 3.1% increase in the number of Construction employees.

**TABLE 3.K Industry Composition for the Town of Pepperell**

(Second Quarter of 2017)

Description	No. of Establishments	Apr 2017 Emp	May 2017 Emp	Jun 2017 Emp	Total Wages	Average Monthly Employment	Average Weekly Wages
<b>Total, all industries</b>	268	1,637	1,673	1,672	\$18,935,175	1,661	\$877
<b>Natural Resources and Mining</b>	3	10	15	26	\$91,133	17	\$412
Agriculture, Forestry, Fishing & Hunting	3	10	15	26	\$91,133	17	\$412
<b>Construction</b>	65	256	260	264	\$3,331,837	260	\$986
Construction	65	256	260	264	\$3,331,837	260	\$986
Construction of buildings	23	22	21	20	\$274,437	21	\$1,005
Residential building construction	23	22	21	20	\$274,437	21	\$1,005
Specialty trade contractors	41	198	202	216	\$2,513,095	205	\$943
Building equipment contractors	17	98	104	107	\$1,247,344	103	\$932
Building finishing contractors	15	59	59	59	\$771,411	59	\$1,006
Other specialty trade contractors	6	30	30	32	\$418,986	31	\$1,040
<b>Manufacturing</b>	12	116	113	113	\$1,331,937	114	\$899
Manufacturing	12	116	113	113	\$1,331,937	114	\$899
Durable Goods Manufacturing	9	96	94	94	\$1,077,617	95	\$873
Fabricated metal product manufacturing	4	66	64	65	\$786,154	65	\$930
Machine shops & threaded product mfg.	3	44	42	42	\$466,555	43	\$835
<b>Trade, Transportation and Utilities</b>	34	262	259	269	\$2,289,363	263	\$670
Wholesale Trade	12	57	56	57	\$685,527	57	\$925
Merchant wholesalers, durable goods	5	28	28	28	\$325,160	28	\$893
Electronic markets and agents and brokers	6	12	12	9	\$173,955	11	\$1,216
Electronic markets and agents and brokers	6	12	12	9	\$173,955	11	\$1,216
Retail Trade	15	145	139	140	\$952,386	141	\$520
Motor vehicle and parts dealers	3	21	19	21	\$208,884	20	\$803
Food and beverage stores	5	52	50	52	\$232,733	51	\$351
Beer, wine, and liquor stores	3	7	4	4	\$17,868	5	\$275
Transportation and Warehousing	7	60	64	72	\$651,450	65	\$771
General freight trucking	3	3	3	3	\$26,550	3	\$681
<b>Information</b>	5	35	37	32	\$296,187	35	\$651
Information	5	35	37	32	\$296,187	35	\$651

<b>Financial Activities</b>	14	37	37	38	\$350,408	37	\$728
Finance and Insurance	6	21	22	20	\$181,415	21	\$665
Credit intermediation & related	3	17	17	15	\$150,146	16	\$722
Insurance carriers and related	3	4	5	5	\$31,269	5	\$481
Insurance agencies and brokerages	3	4	5	5	\$31,269	5	\$481
Real Estate and Rental and Leasing	8	16	15	18	\$168,993	16	\$812
Real estate	8	16	15	18	\$168,993	16	\$812
Offices of R.E. agents & brokers	4	8	7	8	\$107,281	8	\$1,032
Activities related to real estate	3	6	6	8	\$52,612	7	\$578
<b>Professional and Business Services</b>	47	258	266	274	\$4,508,567	266	\$1,304
Professional and Technical Services	28	187	186	188	\$3,715,586	187	\$1,528
Professional and technical services	28	187	186	188	\$3,715,586	187	\$1,528
Mgmt & tech. consulting services	10	7	6	6	\$143,567	6	\$1,841
Administrative and Waste Services	19	71	80	86	\$792,981	79	\$772
Administrative and support services	19	71	80	86	\$792,981	79	\$772
Services to buildings and dwellings	13	50	61	65	\$557,029	59	\$726
<b>Education and Health Services</b>	49	373	387	381	\$4,667,804	380	\$945
Health Care and Social Assistance	40	155	158	149	\$1,293,277	154	\$646
Ambulatory health care services	9	79	76	72	\$914,698	76	\$926
Offices of dentists	3	20	20	20	\$180,565	20	\$694
Offices of other health practitioners	3	6	6	7	\$49,793	6	\$638
Social assistance	31	76	82	77	\$378,579	78	\$373
Individual and family services	28	42	45	43	\$158,690	43	\$284
Child day care services	3	34	37	34	\$219,889	35	\$483
<b>Leisure and Hospitality</b>	12	133	139	137	\$464,273	136	\$263
Accommodation and Food Services	11	129	135	134	\$454,580	133	\$263
Food services and drinking places	10	128	133	132	\$446,580	131	\$262
Restaurants and other eating places	9	118	121	121	\$418,622	120	\$268
<b>Other Services</b>	21	71	72	72	\$652,622	72	\$697
Other Services, Except Public Admin	21	71	72	72	\$652,622	72	\$697
Repair and maintenance	14	50	49	48	\$528,419	49	\$830
Automotive repair and maintenance	10	43	42	41	\$441,738	42	\$809
Comm. machinery repair & maint.	3	7	7	7	\$86,681	7	\$953
Personal and laundry services	5	13	15	16	\$63,962	15	\$328

Source: ES-202 Reports

## **D. Growth and Development Patterns**

### **1. Patterns and Trends**

By the end of the nineteenth century, Pepperell consisted of a mill village along the banks of the Nashua River (East Pepperell) and a residential district along streets radiating out from the town's center, a mile to the west. Throughout the nineteenth century the mill village steadily expanded westward while the residential district pushed eastward, until the two joined. The rest of the town consisted of farms and some wooded hills. Before 1957 only a few new subdivisions were built, the largest being the Pines (east of the mill village and north of Lowell Road) with over 100 homes. Other early subdivisions were built south of Lowell Road, off of Heald Street (the Plains), off of Brookline Street, and off of East Street. Most residential development, primarily since 1950, has consisted of frontage lots along existing roads.

The Pepperell Planning Board accepted the Subdivision Control Law on September 1, 1957, and zoning was enacted in 1968. Most of the early subdivisions, listed above, consisted of quarter-acre lots. One-acre (40,000 square feet) lots became the minimum in 1968, increasing to two acres (80,000 square feet) in the Rural Residence areas in 1974, and in all parts of the town except in the mill village and east of the Nashua River by 1984. Developers have adapted to these changing requirements by constructing larger and more expensive houses to go on larger (and more expensive) lots. Most of Pepperell is zoned for residential development and no part of town has been left out of the building boom.

The 2005 Land Use Map, see Map 2, shows that residential growth has continued to sprawl primarily in the rural parts of the town that are distant from town services.

The number one characteristic that citizens wish to see maintained continues to be that of a family-oriented community with an abundance of open space and sensitive natural resources and rural character. Open space and farmlands are encouraged through Open Space Residential Developments and preservation of agricultural uses in the rural areas of town and through mixed-use development and multi-family development in the more urban areas of the town.

The Town of Pepperell has a long history of active protection and preservation of its natural resources. Since 1969, the Open Space and Recreation Plan has served as a planning tool when it considers current and future growth. The Master Plan continues to highlight the ongoing efforts and accomplishments of the Conservation Commission and further to reiterate the importance of the action plan.

The goals outlined in the Master Plan to aid the town in preserving the rural character, scenic landscapes, agricultural lands, and natural resources are outlined to include the following:

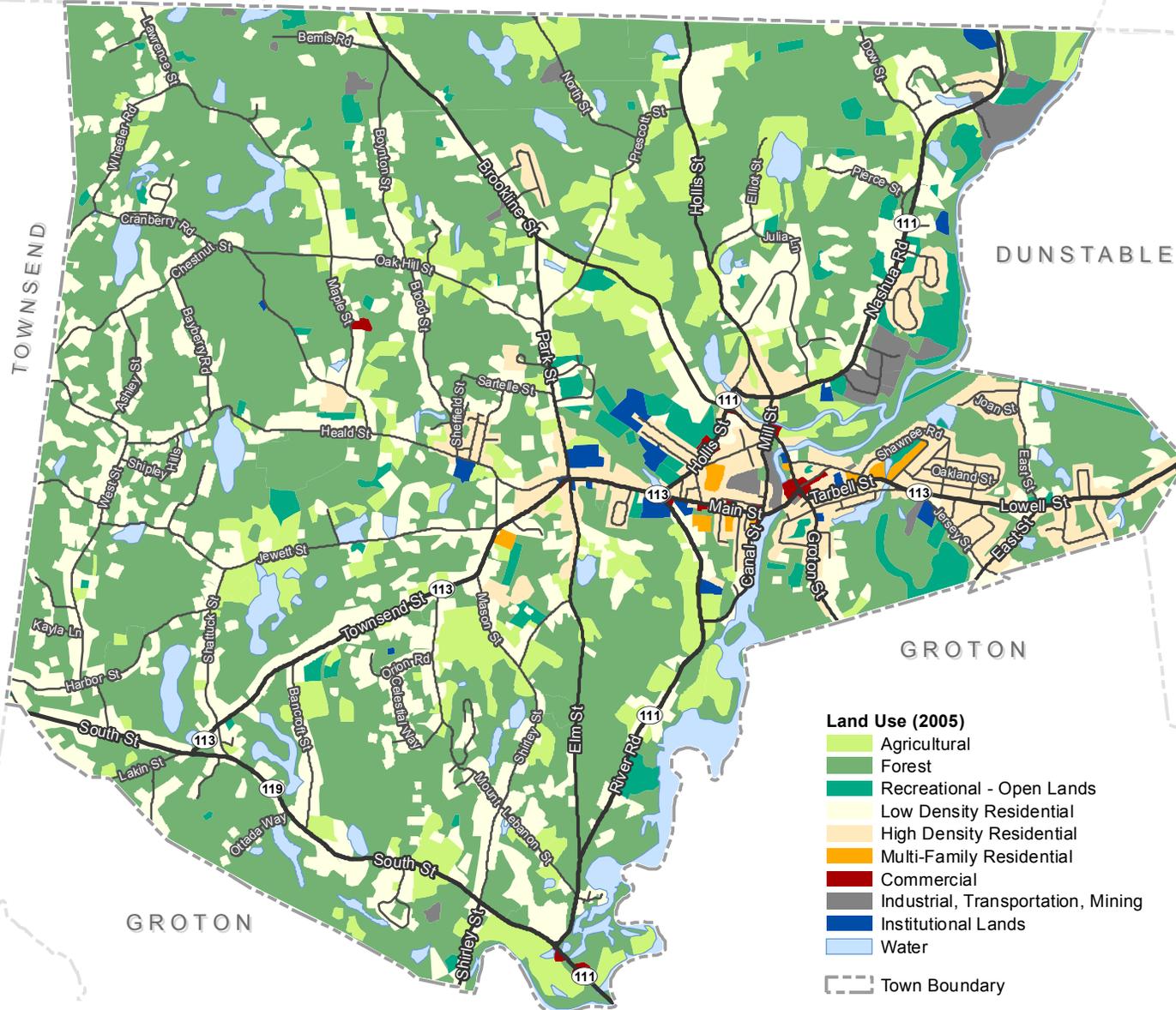
- Preserving public and private water supplies,
- Protecting sensitive resources,
- Protecting rural character,
- Protecting agricultural land,
- Providing long-term sustainability of all protection and recreation efforts,
- Increasing access, and
- Adopting cooperative and regional approaches to open space and recreation planning.

# Pepperell Land Use (2005)

Land use classification is based on the MacConnell twenty-one category classification system and generalized into ten major categories. NMCOG updated the MassGIS 1999 land use data based on 2005 orthophotos.

Brookline, NH

Hollis, NH



**Land Use (2005)**

- Agricultural
- Forest
- Recreational - Open Lands
- Low Density Residential
- High Density Residential
- Multi-Family Residential
- Commercial
- Industrial, Transportation, Mining
- Institutional Lands
- Water

Town Boundary

**Sources:**  
 NMCOG/MassGIS (2005 land use);  
 MassDOT/NMCOG (2013 roads); MassGIS  
 (town boundaries)

Data provided on this map is not sufficient  
 for either boundary determination or  
 regulatory interpretation.

Produced by NMCOG: 5/12/2015



**Northern Middlesex  
 Council of Governments**  
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## 2. Infrastructure

**Transportation** - The most visible aspect of Pepperell's infrastructure is the town road system, consisting of approximately 80 miles of mostly paved surfaces. A state highway (Route 119) adds another nearly four miles of roadway within the town. Nearly all of the town's roads, more than half a mile in length, were already built by 1900, as shown on the 1870's map (See Map 3). Many of these were formerly farm roads dating from the eighteenth century. All of Pepperell's roads have officially been designated as scenic, with the exception of Routes 111, 113, and 119. Alterations along these scenic roads, such as the removal of trees or stone walls, require a hearing before the Planning Board under the Scenic Roads By-Law. This provides some protection for the town's "streetscape." Current zoning, however, requires that new sub-division roads must connect to existing roads on both ends, if possible, tending to maximize the length of new roads and to encourage the development of interior open space.

Railroads once provided transportation in this region, but the town's last rail line was abandoned early in the 1980's. In 2002, the Nashua River Rail Trail, a paved path for bicycles, horses, and pedestrians, was completed by the Department of Conservation and Recreation (DCR), formerly the Department of Environmental Management (DEM), along an abandoned rail line on the east side of the Nashua River. The trail is approximately 12.5 miles long, connecting Ayer, Groton, Pepperell, and Dunstable, to south Nashua. While the Rail Trail is used by many bicyclists, including many families enjoying the safety of off-road riding with children, the trail is also used by residents for commuting and walking groups. In addition, the Rail Trail is stimulating visits to Pepperell's downtown area from non-residents.

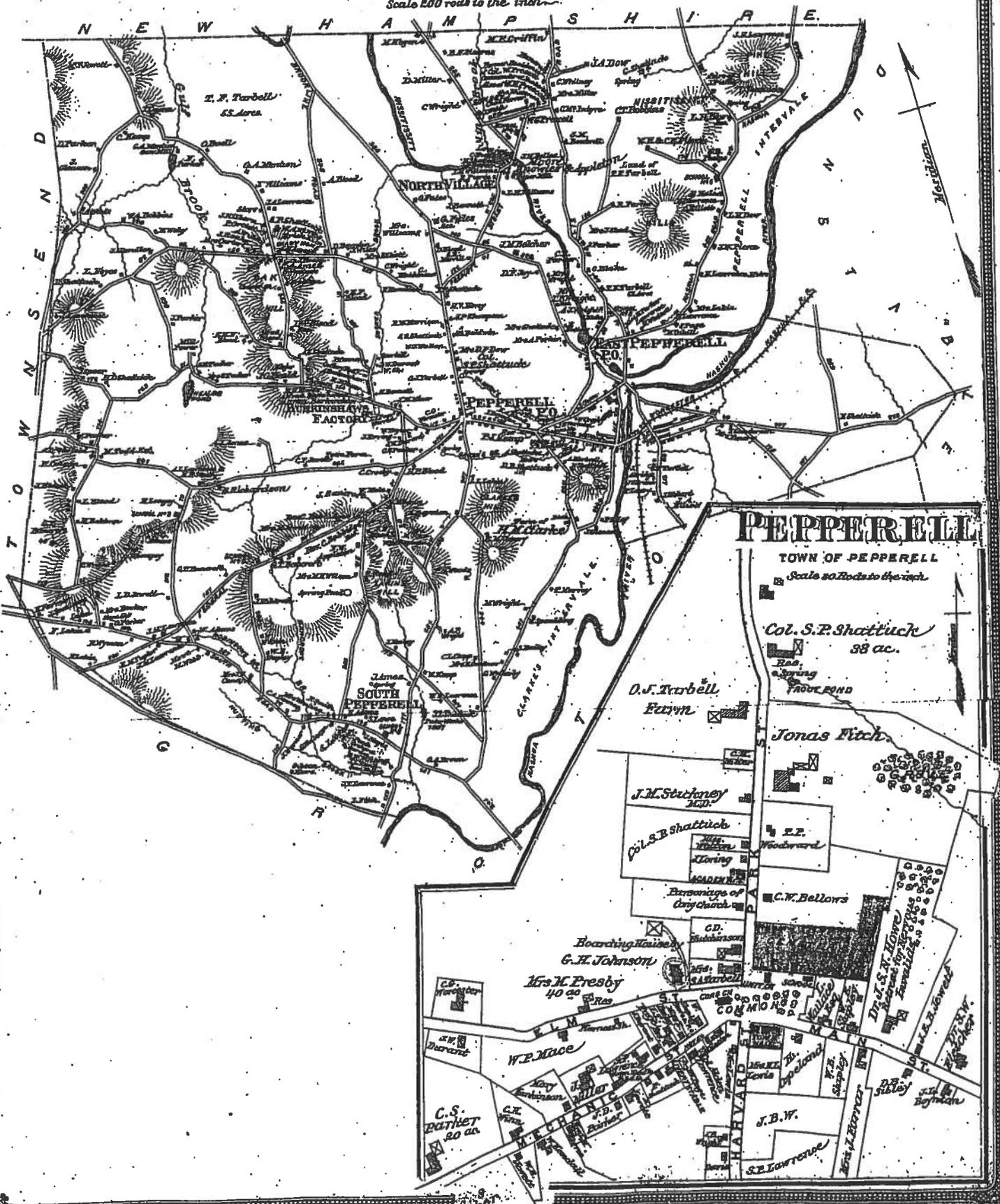
With very limited public transportation options, most residents rely on automobiles as their primary means of transportation, but Pepperell maintains 11.5 miles of sidewalks, primarily focused in the downtown section of town. Sidewalks also extend along portions of Rte. 113 from Pepperell Town Hall almost to Dunstable. Bicyclists are often seen riding along the roadway, many on their way to the Nashua River Rail Trail but "teams" of racing bicyclists often chose the backroads of Pepperell for their practice rides while enjoying the picturesque landscapes.

To provide additional off-road pedestrian options, efforts to connect Pepperell's trail system continues, often times extending into neighboring towns or across the state line into New Hampshire. Creating and updating Pepperell's Trail Guide, which is available online or in hardcopy, provides non-motorized vehicle trail opportunities for those seeking pedestrian and bicycle options. By ensuring "Complete Streets" are incorporated into future planning efforts by the town, connectivity between neighborhoods and recreational facilities and conservation properties will be improved. In response to a request from older residents, additional benches are being added along trails and in the downtown section of Pepperell, thereby encouraging older residents to walk to their destinations. An ADA-accessible trail is under construction behind the Lawrence Library on Main Street, which also provides trail use opportunities to a wider group of users, especially those confined to wheelchairs or those who are visually impaired. Benches, provided by an Eagle Scout, have also been included along this trail, which indicates the town's commitment to support the requests of our older residents, as well as providing a

# PEPPERRELL

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Scale 200 rods to the inch.



peaceful, quiet place to sit and read, or reflect. A new ADA-accessible walking trail is in the early stages of planning for the Senior Center property. The proposal includes benches and workout stations. By creating the trail on the Senior Center property, staff is close by if someone should require medical attention.

There is no commercial air transport in town. A small airport in the northern part of town serves only light private airplanes and is used primarily as a skydiving center, which attracts people from across New England. Currently, no commercial navigation takes place on either the Nashua or Nissitissit Rivers, although both are popular recreational destinations. Limited public transportation for seniors or individuals with disabilities is available through the Lowell Regional Transit Authority/Pepperell Road Runner service, through which eligible people can schedule transportation for medical services, shopping, or trips to the Senior Center. There is no other public transportation available in town.

**Water Supply** - Pepperell depends on groundwater as a source of water for both private and public wells. The town's municipal water system dates back to 1908. Five gravel-packed wells provide the potable water for the town, all of which are located within the town limits. Two wells are located in the northwest section of town, two in the southeast section, and the newest well, which was brought online in 2012, is in the northeast section on the New Hampshire border. The Town has three pump and treat facilities, two booster stations and three storage tanks. Approximately 80% of the residents are served by the Water Division. Regulatory mandates affect the amount the Town is allowed to withdraw from the aquifers and future limits on water supplies are unlikely to be imposed on the Town. The United States Geological Survey (USGS) has identified a high-yield aquifer in the area of Stewart Brook and several medium-yield aquifers along Sucker Brook and the Nissitissit River.

**Wastewater Treatment** - The town's sewer system, which dates back to 1979, was built to service East Pepperell Village in order to reduce pollution of the Nashua River. It has been expanded steadily until it approached its effective capacity in 2003, serving 30% of the town, approximately 1,500 households. The flow is tributary to the 1.1 million gallon per day Wastewater Treatment Facility via five pumping stations, 35.9 miles of sewer pipe, and 800 manhole structures. Since 1989, the Pepperell Wastewater Treatment Plant has contracted through an inter-municipal agreement with the Town of Groton, to provide sewer service to a portion of Groton households. In 2003, Pepperell began construction of an expansion to the treatment plant, increasing its capacity from 705,000 gallons per day to the 1,100,000 gallons per day, with up to 25% of the capacity reserved for Groton. The Wastewater Treatment Plant also treats about 1.0 million gallons of septage from surrounding communities.

Sewer service can protect local waterways by allowing for the abandonment of failing septic systems by connection to the sewer lines. However, in areas prone to new development within open space, sewerage may not be encouraged in order to preserve ground water levels, since sewerage does not recharge ground water as do septic systems. The wastewater infrastructure allows the densest possible development of parcels of

land, which otherwise could not support septic systems. In general the convenience of wastewater, “exports” ground water (withdrawn from the wells) out of the watershed. The establishment of the sewer district, by the Board of Public Works (BPW) limited access to sewer to previously developed urban areas. This was deemed essential to protect water supplies and to discourage maximum development on marginal soils and can help to redirect growth to infill and redevelopment in the town center, rather than to open space on the periphery. Although the Board of Public Works adopted a map to define the limits of a Sewer District in 2005, at the Annual Town Meeting the vote to designate it as a Zoning Overlay District did not pass. The map does remain the DPW’s policy about the future location of sewer lines.

3. Long-term development patterns

Historically, Pepperell was a rural community consisting of a small village developed around the paper mill with farmlands and vast tracts of open space. The rural landscape is declining due to housing developments mostly outside the municipal and business centers of the town. New growth continues to be directed through planning and zoning with concentrations on village center areas. Open space developments are encouraged to protect resources, especially in the rural areas outside the Sewer Overlay District.

Pepperell, in the past, was known as predominantly a factory and farming town. In recent years it has become mostly a “bedroom community” with very little commercial or industrial development. The costs of development are best maintained with encouragement for new businesses that are compatible to Pepperell’s rural nature.

**Zoning** – Map 4, Pepperell Zoning Districts, shows current zoning. Most of Pepperell is zoned for single-family residential development, with a minimum lot size of two acres and a minimum frontage of 150 feet (200 feet in one district). The only exceptions are in the built-up portions of East Pepperell, known as the Plains, and in the relatively small part of the town east of the Nashua River where one-acre lots are permitted.

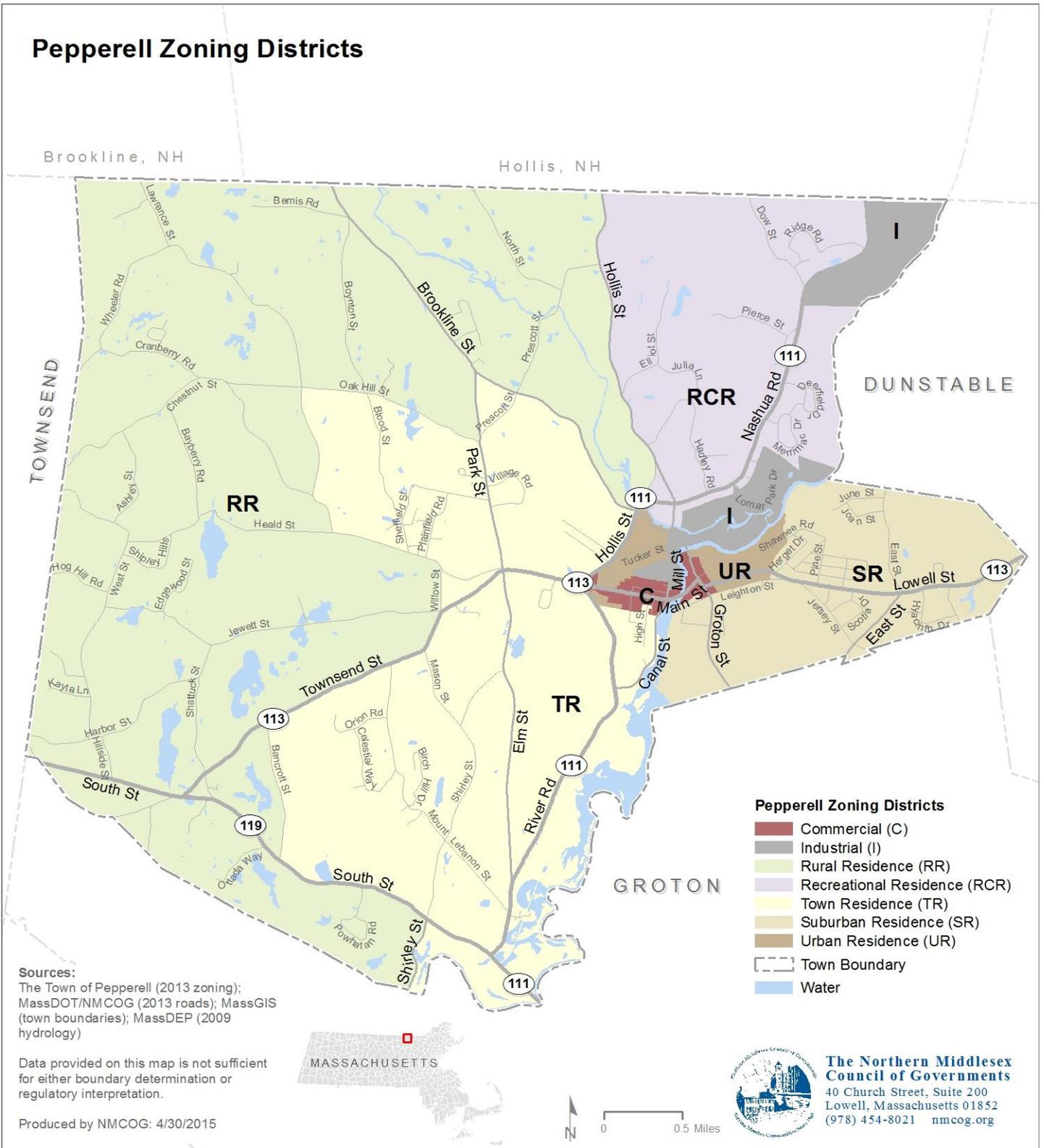
There are two industrial districts and one commercial district. Recent and projected expansions and changes to both districts will work to expand commercial and industrial development within the town. These types of changes to the zoning landscape enhance the economic growth of the town. This, in addition to many existing home based and agricultural businesses that require little or no permitting should follow along or surpass the residential development in order to make a more sustainable community.

In addition to the base zoning districts identified on Map 4, Pepperell has the following overlay districts: (See Map 5, Pepperell Zoning Overlay Districts)

- Water Resources Protection Overlay District (WRPOD)

Pepperell’s WRPOD consists of three sub-districts for protecting the municipal well sites at Jersey Street (two wells), Bemis Road (two wells), and Nashua Road (one well). The Aquifer-Watershed Protection Zone (AWPZ) is the DEP required Zone 1 within 400’ of the wellhead. The Well Protection Zone (WPZ) is Zone 2, which contributes water to the well under severe pumping and recharge. The Water Source Protection Zone (WPZ) is Zone 3,

# Pepperell Zoning Districts



- Pepperell Zoning Districts**
- Commercial (C)
  - Industrial (I)
  - Rural Residence (RR)
  - Recreational Residence (RCR)
  - Town Residence (TR)
  - Suburban Residence (SR)
  - Urban Residence (UR)
  - Town Boundary
  - Water

**Sources:**  
 The Town of Pepperell (2013 zoning);  
 MassDOT/NMCOG (2013 roads); MassGIS  
 (town boundaries); MassDEP (2009  
 hydrology)

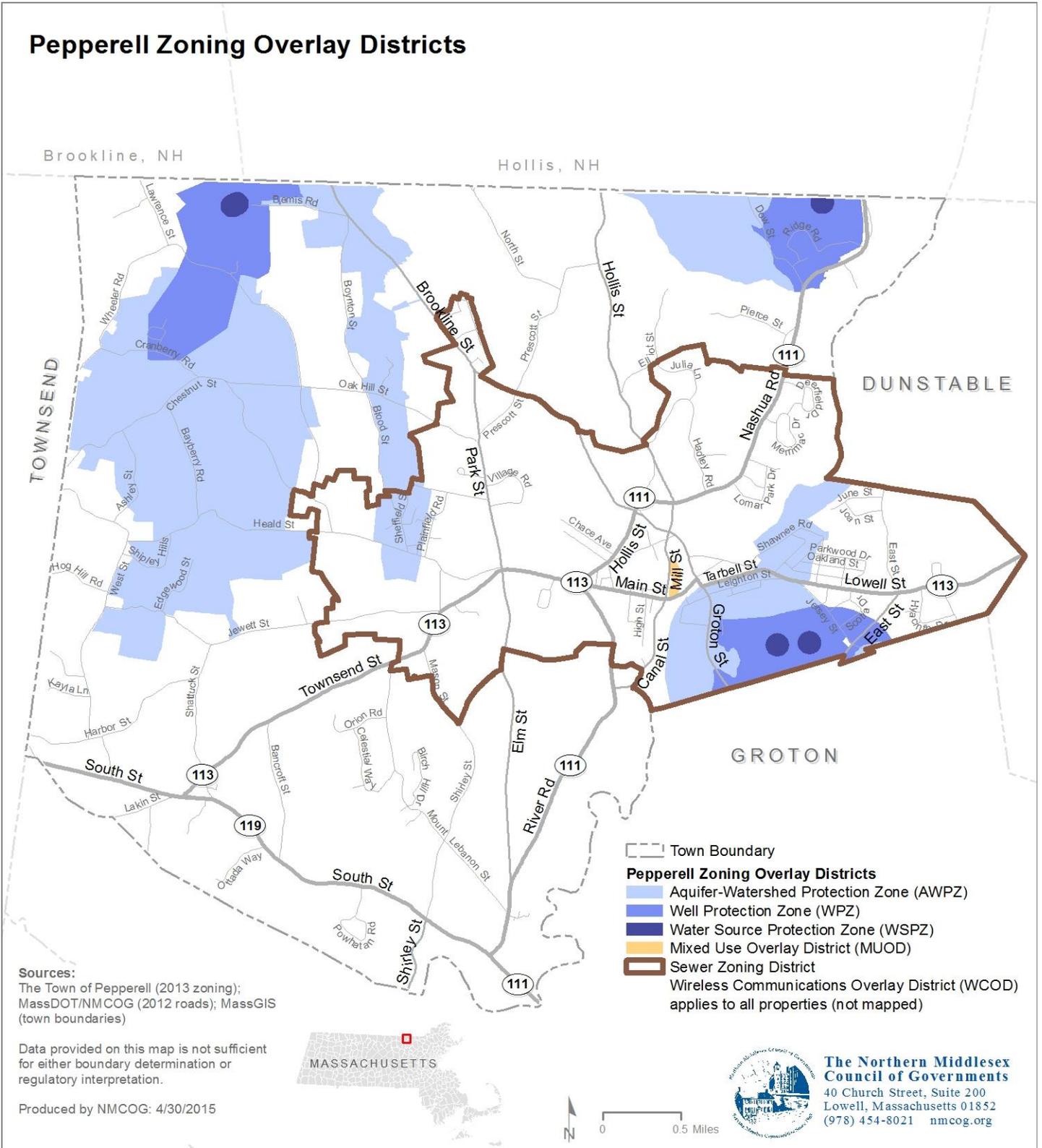
Data provided on this map is not sufficient  
 for either boundary determination or  
 regulatory interpretation.

Produced by NMCOG: 4/30/2015



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# Pepperell Zoning Overlay Districts



**Sources:**  
 The Town of Pepperell (2013 zoning);  
 MassDOT/NMCOG (2012 roads); MassGIS  
 (town boundaries)

Data provided on this map is not sufficient  
 for either boundary determination or  
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which is the area outside of Zone 2 from which surface water and ground water drain into Zone 2.

- Mixed Use Overlay District (MUOD)

The Mixed Use Overlay District allows a Special Permit from the Planning Board an alternative pattern of land development to the pattern normally permitted.

- Sewer Zoning District

The portion of the Town which sewer service is provided or may be planned to be provided in the future.

- Wireless Communications Overlay District (WCOD)

The Wireless Communications Overlay District applies to all properties in Pepperell. The WCOD insures for safe and appropriate siting of wireless communications facilities and minimal visual impacts.

**Build Out** - Since 1980, the town has permitted Open Space Residential Developments (OSRD), which reduces lot sizes in exchange for the permanent preservation of open space. The developer can gain additional lots through this type of development and can potentially save a considerable amount on the cost for infrastructure. While many conventional subdivisions have been approved and constructed over the past several years. The trends seem to be coming back to the open space developments due to the economic downturns of recent years.

Additionally, the availability of frontage lots along the public ways and by the provision for reduced-frontage lots of not less than forty feet continues to be an alternative to conventional subdivisions in Pepperell. These lots, which can be shaped deep and narrow, must be four acres, but they enable back lands to be developed without the need to build subdivision roads and enables protection of more open space. Subdivision roads and the associated infrastructure are costly, both for the developer and for the town, which eventually must maintain them. The Protective Zoning Bylaws also provide for permitting construction of a private common driveway which can serve as access to up to five lots, but cannot become an accepted public way.

The pace of residential development had been slow in Pepperell due to the economic downturn but by the end of FY2015, several projects for single-family houses were added to the cue and several projects resurrected. Conventional subdivision Hadley Estates, which includes Hadley Road, Julia Lane, and Beaver Creek Circle has been completed and the roadways accepted by the town. The roadways at North Village Estates, off of Park Street, which includes Village Road and Pond Circle, have been accepted by the Town and construction of the last four houses on Pond Circle are nearing completion. The 28-lot subdivision known as Reedy Meadow Estates, which includes 17 houses nearing completion in Pepperell and 11 lots in Groton, where construction is just beginning, is progressing quickly. Several streets away, Heritage Estates on Bacon Street is also moving forward, after sitting dormant for several years. Five house lots on Spaulding Lane, which is off River Road, are also under construction. A previously approved subdivision, DMA Estates, went from a conventional subdivision to a Comprehensive Permit subdivision of 56 lots off Nashua Road, which is nearing completion. This project

will ask for town acceptance of the roadway and provide open space for the town. Other construction projects for single-family houses are scattered throughout town.

From 2005 through 2014 a total of 166 permits were issued for single-family homes and ten building permits were issued for homes for two families or more. The improving economy is evident in the 44 permits for single-family permits issued over the 22 month period from 2015 and October 6, 2016, with 32 of those permits being issued in the first nine months of 2016.

After 2006, with the Rate of Development Bylaw no longer in effect, no new conventional subdivisions were presented to the Town for approval. An Open Space Residential Development (OSRD) of 19 lots on River Road at the site of the former Kemp's Horse Trotting Track and an 11-lot OSRD on Hollis Street are the most recent developments approved. Except for one single-family home building permit issued for River Road, the remaining 29 lots are in a cue of approved house lots.

## **4. Environmental Inventory and Analysis**

### **A. Geology, Soils, and Topography**

#### **1. Geology and Topography**

The "Bedrock Geologic Map of Massachusetts" shows that Pepperell is entirely within the Nashoba Zone of the Merrimack Belt. There are three major bedrock units that underlay the soils in town. Moving from east to west these are: Oakdale, (a siltstone and muscovite schist), Worcester (consisting of phyllites and slates), and Paxton (consisting of granofels and sulfur schists).

A striking geologic feature in Pepperell is Gulf Brook Ravine, the most visible remnant of a normal prehistoric fault, known as the Wekepeke Fault, which runs from central Massachusetts to southern New Hampshire. Technically, it is a "resequent fault scarp". Time, glaciers, and erosion have combined efforts to cause the original fault line to recede leaving a deep, steep-sided ravine, which provides a cool microclimate more typical of sites in northern New England.

Low broad ridges with intervening river and stream drainages and wide valleys characterize the topography of Pepperell. The ridges are the remnants of a former peneplain, a flat plateau uplifted in the mid to late Cenozoic era (2 to 35 million years ago) which covered most of southern and central New England. The peneplain was subsequently dissected by the erosional action of streams and rivers. Through geologic time, this cycle of uplift, glacial, and fluvial deposition, and erosional processes may have been repeated numerous times.

Approximately 2 million years ago, in the Pleistocene Ice Age, earth began to experience a period of alternating cooling and warming (lasting until about 12,000 years ago) of cooling which led to the formation of continental glaciers and the lowering of sea levels. The most recent glaciation was the Wisconsin glacial stage, which began between 60,000 and 40,000 years ago and was characterized by many advances and retreats in the continental ice sheet that covered the New England states and terminated at end moraines forming Long Island, New York, Block Island, Rhode Island, and Nantucket, Massachusetts. There is evidence of at least two periods of glaciation in Pepperell -

distinctive differences in till layers have been identified in the drumlin known as Mt. Lebanon on the street of that same name.

The Ice Age left its mark on Pepperell in the form of eskers, kettle holes, drumlins, kame terraces and deltas, and an assortment (from sand sized particles all the way to boulders) of glacially deposited sediment called till. The Nissitissit Hills are actually two drumlins, Mt. Lebanon forms another (at 500 feet the highest point in town), and the small hill between Elm and Shirley Streets known as Scotch Pine Hill is also a drumlin, all formed from till which the glacier molded during its south-southeastward advance. As the ice melted (retreated) from Pepperell, evidence of two former ice bound streams that tunneled through the glacier became apparent. These glacial forms are known as eskers. There is one located in the northwest corner of town, segments of which wind through the countryside for about two miles skirting first Stewart Brook and then Gulf Brook. The Reedy Meadow esker parallels the brook of that same name. Because the particles that settled out of the streams reflect the velocity of the current (the swifter the water the larger the rock particle that will be carried), eskers tend to be a present-day source of sand and gravel.

With warming temperatures, stagnant ice and meltwater deposits closed in two glacial lakes in Pepperell. Glacial Lake Nashua covered most of East Pepperell with the exception of an island in the center of town looking south from the present-day dam for about a mile. The elevation of a delta near Jersey Street was 250' at the time of deposition giving the shoreline of this ancient lake at one point. The extent of glacial Lake Nashua steadily diminished as new drainage outlets developed first in Ayer, then in Groton, Dunstable, Nashua, New Hampshire, and finally into Glacial Lake Merrimack about two miles east of Pepperell. The shores of the lake are easily recognized today as terraces west of Nashua Road along the foot of the Nissitissit Hills. In the quiet water of the lake, fine sand and silt settled to the bottom, creating the flat sandy landscape we see north of Lowell Road and along River Road. Before vegetation could be established in these areas, wind-blown sand created two dunes in the area now known as Bacon and Idal Streets.

Glacial Lake Nissitissit would have bordered Brookline Street. Its outlet is shown as about 1,000 feet north of present-day Pork Barrel Pond. Also a large lake, its northernmost boundary extended seven miles into Milford, New Hampshire. In general, the deposits laid down in the meltwaters of this lake are younger in the south and east, again created by successive meltwater streams as the glacier retreated.

Blocks of ice broken off from the main ice sheet formed kettle holes. The blocks melted in place, leaving a fine deposit of rock flour and dust that sealed the bottom of small depressions with no inlet or outlet. These depressions subsequently filled with water, forming a series of small seasonal ponds east of Hollis Street.

Glacial till covers the largest area of Pepperell's land surface, sometimes in very thin layers plastered on bedrock. Stonewalls abound in the western section of town, many built of the rounded-off erratics transported by the glacier and others reflecting the layering characteristics typical of the underlying siltstone and phyllite bedrock. While neighboring towns have much granite bedrock, Pepperell has only one small exposure of granite in the extreme northwest corner of town. When resourceful old-timers needed granite for construction, they often quarried one of the large boulders delivered by the

glacier; today's hikers ponder over these one-rock quarries scattered throughout the woods.

The surficial geological map indicates that deposits laid down in the Sucker Brook area probably occurred in marginal lakes restricted by ice on the north and controlled by an outlet now known as the Varnum Brook. This lake was subsequently filled in with meltwater sediments. A second outlet formed in the north valley of Twin Valley Farm located near the intersection of Brookline and Prescott Streets. The precursor to the small stream that runs through this present-day landscape was a fast flowing river of glacial meltwaters during the Ice Age.

## 2. Soils

In the intervening time since 12,000 to 14,000 years ago, and under the influence of climate, topography, erosion, and vegetation, Pepperell's soils developed from the glacial tills and outwash deposits. Most of the weathering processes are evident only in the top two feet of the well-drained soils. The Middlesex Conservation District lists about 12.7% of the soils of the town as prime agricultural soils. Drumlins and other till deposits generally have a compact hardpan layer with slow permeability in the sub-stratum. Each named soil type has an accompanying number identified in the following map. Typical associations on hills are Bernardston (221)/Paxton (122) on the top, Montauk (222), Woodbridge (81, 82, 83) on the sides, and Ridgebury (32) in the poorly drained pockets between uplands. At the end of glaciation the water-deposited sediments in lakes in Pepperell were typically Hinckley (35) and Windsor (67), sandy soils which are excessively drained and have rapid permeability. Fine clay particles that usually settle out in quiet lake waters were mostly washed away because of the rapid movement of waters during glacial times or the short life of the various stages and substages of marginal ice lakes.

Shallow to bedrock soil complexes such as Charlton-Hollis-rock outcrop (7), Hollis-Rock outcrop-Charlton (8), and Rock outcrop-Hollis complex (9) form another major component of Pepperell's land surface, and this is particularly evident in the western portion of the town where bedrock exposures are more common. Hydric soils may actually have ponding on them or may have groundwater within 1.5 feet of the surface for a considerable portion of the growing season. Hydric soils abound adjacent to Pepperell's many waterways - Scarboro (40), Freetown (46, 99), Wareham (139), and Ridgebury (32) are the most common soil units here. According to the Soil Survey, Pepperell's wetland soil types total 2,718 acres or 18% of the land surface.

Those same soils that would be good agricultural land sometimes pose limitations for on-site septic system design. For instance, Paxton is listed as a prime agricultural soil but, because of its hardpan layer at 15" to 38" with very slow permeability, a more extensive leach field would be required for a building site. Also some prime agricultural lands are in the floodplain where periodic saturation would present obvious problems for development.

In *Soil Potential Ratings for Septic Absorption Fields* prepared by the USDA Soil Conservation Service for Middlesex and Essex Counties, Massachusetts, a numerical rating has been assigned according to the following standards:

## Soil Potential Rating Classes (Potential for Septic Absorption)

**Very high potential** - Performance is at or above "standard" because soil conditions are exceptionally favorable. Installation costs are low and there are no continuing limitations. (315-311 numerical rating value)

**High potential** - Performance is at or above the "standard". Cost of measures for overcoming limitations are judged locally to be favorable in relation to the expected performance. Continuing limitations do not detract appreciably from environmental quality. (310-294 numerical rating)

**Medium potential** - Performance is somewhat below "standard". Costs of corrective measures are high. Continuing limitations detract from environmental quality. (293-274 numerical rating value)

**Low potential** - Performance is significantly below "standard". Corrective measures are costly. Continuing limitations detract appreciably from environmental quality. (273-215 numerical rating value)

**Very low potential** - Performance is much below "standard". Corrective measures are very costly. Continuing limitations seriously detract from environmental quality. (215-0 numerical rating value)

Map 6, Soils and Geologic Features, provides an overview of soil types and limitations within Pepperell. The white areas on the map are soils that fall in an intermediate stage - neither favorable nor unfavorable for farming or development. Some soils, such as Rock outcrop-Hollis complex (9), are not rated at all because of the prominence of bedrock exposures in that soil type. Much of the prime agricultural land could also serve as a prime building site, especially in those areas that are already cleared for farming. Some prime agricultural soils, Bernardston (221), Montauk (222), and Pittstown (281), pose difficulties for building site development due to wetness.

### **B. Landscape Character**

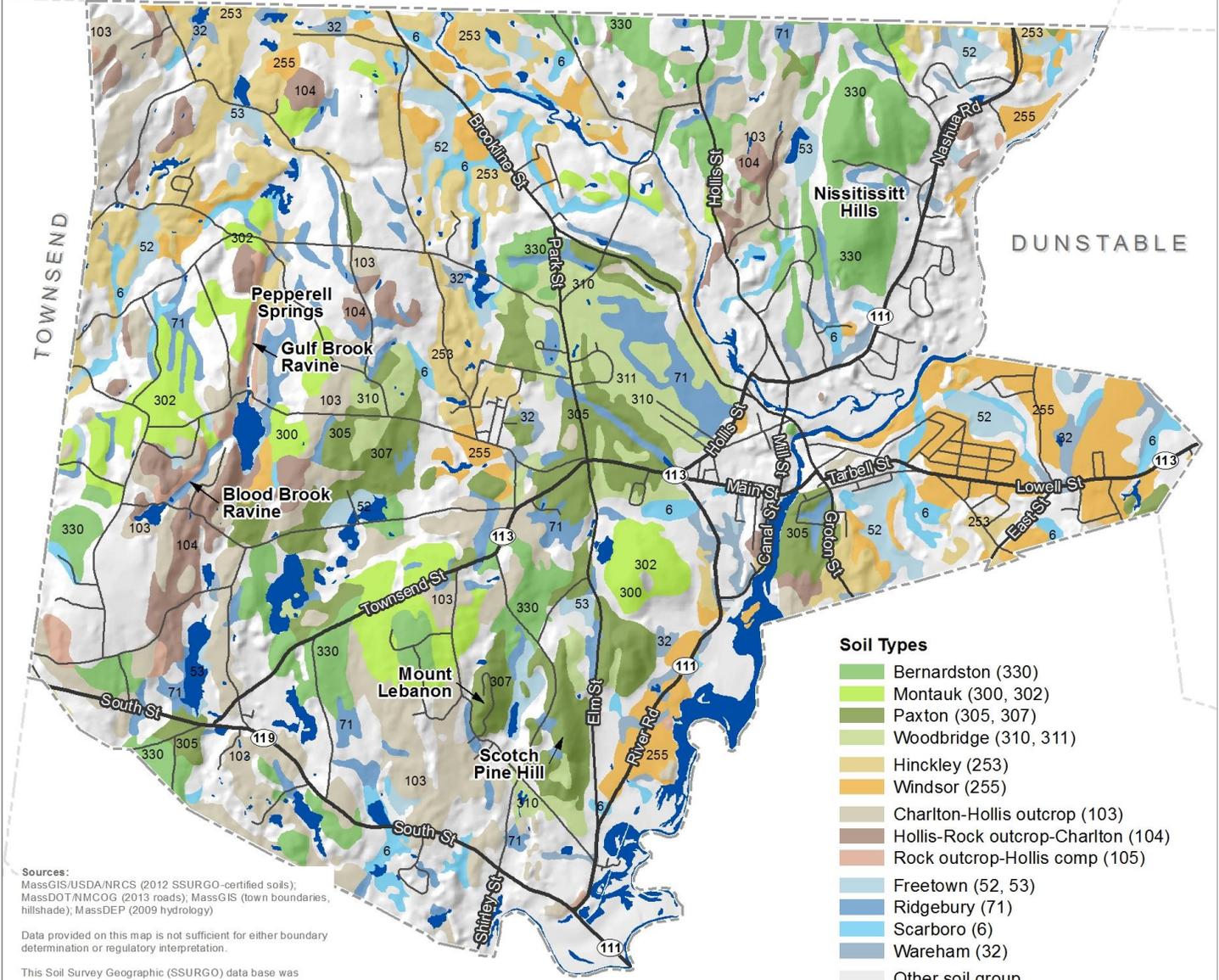
Residential development interspersed with farms and forested wetlands and uplands lend a decidedly rural character to Pepperell. Some of the land that was formerly cleared for farming has now succeeded to second growth forests. But many of these agricultural fields have also become the sites of residential development. The gently rolling hills give way to two major rivers in the town, and this feature has influenced the pattern of commercial and residential development as noted in the "History of the Community" section.

The Main Street corridor from the rotary crossing over the Nashua River and through Railroad Square provides much of the business area of the town. Smaller defined areas of commerce exist along Tarbell Street and Hollis Street with the majority of the

# Pepperell Soils

Brookline, NH

Hollis, NH



### Soil Types

- Bernardston (330)
- Montauk (300, 302)
- Paxton (305, 307)
- Woodbridge (310, 311)
- Hinckley (253)
- Windsor (255)
- Charlton-Hollis outcrop (103)
- Hollis-Rock outcrop-Charlton (104)
- Rock outcrop-Hollis comp (105)
- Freetown (52, 53)
- Ridgebury (71)
- Scarboro (6)
- Wareham (32)
- Other soil group
- Town Boundary
- Open Water

**Sources:**  
 MassGIS/USDA/NRCS (2012 SSURGO-certified soils);  
 MassDOT/NMCOG (2013 roads); MassGIS (town boundaries,  
 hillshade); MassDEP (2009 hydrology)

Data provided on this map is not sufficient for either boundary  
 determination or regulatory interpretation.

This Soil Survey Geographic (SSURGO) data base was  
 produced by the U.S. Department of Agriculture, Natural  
 Resources Conservation Service and cooperating agencies for  
 the Soil Survey of Middlesex County, Massachusetts. The soils  
 were mapped at a scale of 1:12,000 with a three acre  
 minimum size delineation. Enlargement of these maps to  
 scales greater than that at which they were originally mapped  
 can cause misunderstanding of the detail of mapping. If  
 enlarged, maps do not show the small areas of contrasting soil  
 that could have been shown at a larger scale. The depicted  
 soil boundaries and interpretations derived from them do not  
 eliminate the need of onsite sampling, testing, and detailed  
 study of specific sites for intensive uses. Thus, this map and  
 its interpretations are intended for planning purposes only.  
 Digital data files are periodically updated. Files are dated, and  
 users are responsible for obtaining the latest version of the  
 data.

Produced by NMCOG: 6/25/2015



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manufacturing and industrial areas focused at the Lomar Park area off Nashua Road. Typical areas of multi-family housing are prominent near the commercial areas of town and small single-family homes produced during the boom of the mills round out these areas. Many of the open farming areas and undisturbed forested areas tend to be located away from the business areas at the outskirts of the town.

The colonial farmer often found that he raised more than crops in the stony soils for the cycle of freezing and thawing in New England winters tends to produce a new crop of stones each spring. Stonewalls, however discontinuous, convey a sense of Pepperell's farming heritage throughout west and north Pepperell, often winding through densely forested areas that once were pastures and fields. The landscape surrounding both Heald and Coon Tree Ponds is unique in that it remains almost completely open, providing broad vistas of meadow, pond, and forest.

### C. Water Resources

Civilization is a stream with banks. The stream is sometimes filled with blood from people killing, shouting, and doing things historians usually record, while on the banks, unnoticed, people building homes, make love, raise children, sing songs, write poetry and even whittle statues. The story of civilization is the story of what happened on the banks. Historians ...ignore the banks of the river.

(Will Durant)

#### 1. Rivers and Brooks

Pepperell lies entirely within the watershed of the north-flowing Nashua River, with almost eight miles of river frontage. Pepperell's largest water body, Pepperell Pond, is an impoundment of the Nashua River between the dam where Main Street crosses the River and South Road (Route 119). The segment of the Nashua River running through Pepperell is classified by the Massachusetts Department of Environmental Management as a Category 5 "impaired" water. The classification for all surface waterbodies falls under the federal Clean Water Act and requires that waterbodies be evaluated for their ability to support certain uses, including aquatic life support, fish and shellfish consumption, and as a drinking water supply. When specific pollutants are present within Category 5 waterbodies, a Total Maximum Daily Load (TMDL) is assigned to the pollutant(s) and a restriction is placed on future releases of that pollutant into the waterbody. Indicators of impaired waterbodies include aquatic macroinvertebrate bioassessments, presence of mercury in fish, total phosphorus (Total), and nutrient/eutrophication biological indicators.

In 2008 and 2009, a \$300,000 grant obtained by the Pepperell Conservation Commission and managed by the Nashua River Watershed Association was used to begin removal of 50 acres of the invasive water chestnut (*Trapa natans*) from Pepperell Pond, but funds ran out. Today, more than 90 acres of water chestnuts are visible, which is limiting recreational opportunities on the river and may have other impacts on wildlife and water quality. The Nashua River has been nominated for designation as a Wild and Scenic River in 2012 (excluding a segment in Pepperell near the hydroelectric plant on Main Street). The Nashua River Wild and Scenic River Study Act was signed into law by

President Obama after being passed by the House and Senate in December 2014. A Study Committee was formed in 2015 to explore whether a portion of the Nashua River and two of its tributaries, the Squannacook and Nissitissit Rivers, should receive this federal protection designation. Conservation efforts along the Nashua River may be eligible for federal funds once the designation is finalized, if approved.

The north branch of the Nashua arises in Westminster, Ashburnham, and Fitchburg. Wachusett Reservoir in Clinton is in the headwaters of the south branch. Joining in Lancaster, the combined branches flow 35 miles northward through a broad, flat floodplain at low stream velocities, with many oxbow lakes and marshes along the course, finally discharging into the Merrimack River in Nashua, New Hampshire. The total watershed drains 538 square miles of Middlesex and Worcester Counties. Two major tributaries, the cold and fast-flowing Squannacook and Nissitissit Rivers, are protected by a special sanctuary act of the Massachusetts legislature (MGL Chap. 132A, § 17) which precludes the development of any further point-source discharges into those rivers, as well as several named stream tributaries.

Many of Pepperell's streams have been identified as coldwater fish resources (CFRs) by DFW. CFRs provide critical habitat for native cold water fish and the properties along these CFRs are focus areas for protection.

Pepperell has four miles of frontage on the Nissitissit River after it crosses the Hollis town line in its southeast course from Potanipo Pond in Brookline, New Hampshire. Its confluence with the Nashua River is approximately one river mile north of the East Pepperell dam, near the covered bridge. The Nissitissit is classified as a Class B river; because of its status under the "Squannacook and Nissitissit Rivers Sanctuary Act" noted above, the River and its tributaries are listed as Outstanding Resource Waters in the state.

The courses of these two rivers superimpose a broad "Y" on the map of Pepperell, and it is convenient to describe Pepperell's surface water resources in terms of the two rivers and their tributaries, starting at the southern boundary of town, where the Nashua River enters from Groton at an elevation of about 200' above sea level.

Robinson Brook and Nutting Brook enter the Nashua River in Pepperell just north of the Groton-Pepperell town line. Draining the area between Groton's Throne Hill and South Road (Route 119), Robinson Brook features a small pond and waterfall in its lower reaches. Its major tributary, Bancroft Brook, arises north of Route 113 near its intersection with Route 119 in a large marsh (sometimes referred to as "Quosopanagon Meadow") between Harbor and Shattuck Streets; beavers have dammed Bancroft Brook at several points along its course in recent years. Nutting Brook collects from the flanks of Mt. Lebanon and runs south parallel to Shirley Street, filling several small ponds along its course.

North of Route 119 the Nashua River broadens into Pepperell Pond, locally called "The Moat", where oxbows, islands, and a sinuous shoreline create excellent wildlife habitat and choice scenery. The town line roughly splits the upper (southerly) portion of Pepperell Pond; on the Groton (east) side is the 300-acre J. Harry Rich State Forest, purchased in 1982 by the Massachusetts Department of Environmental Management to demonstrate proper forest management techniques. Much of the westerly shore of the river is now under the protection of the State DCR and the Town. Approximately 45 acres

along the river, known as the Walent property, was purchased in 2002 by the DCR as an addition to the J. Harry Rich State Forest. Another adjacent parcel containing an abandoned railroad right-of-way was also purchased at that time by the Town as conservation land. These acquisitions, added to the many small, disconnected parcels gained over the years through gifts and tax takings help to maintain the quality of the river biome and provides a connection in a trail system.

About three miles downstream from Route 119, a constriction in the bedrock, once known as Babbitassit Falls, provided a ready-made location for a dam. During the early decades of the century, the paper mill enlarged a pre-existing dam here to a height of 20 feet and span of 250 feet, creating the present pond. In 2016, Eagle Creek Renewable Energy purchased the hydro dam and powerhouse from Pepperell/Swift River Hydro Operations Company, which had purchased the dam and powerhouse in 2004. In late 2012 and early 2013, extensive renovations and repairs, including replacement of the old wooden penstock with a steel penstock and work on the dam and powerhouse, were completed. In late 2012, Pepperell/Swift River Hydro applied for their Federal Energy Regulatory Commission (FERC) license which was required due to the increase in power generated at the hydro plant from the renovations. These renovations changed the classification of the hydro plant from non-jurisdictional to jurisdictional under FERC's regulations. From the Main Street Bridge there is an interesting view of the dam, penstock, and powerhouse. In the flood of March 1936, the bridge at this location collapsed as its underpinnings were battered away by blocks of ice charging over the dam.

Green's Brook enters the Nashua River from the mill yard, carrying drainage from the flood prone area between Main Street and River Road, the north flank of Wooltop, and from ponds on both sides of Elm Street. Varnum Brook joins Green's Brook behind the Pepperell Communications Center, having crossed under the traffic rotary to deliver runoff from both sides of Park Street. The area drained by Green's and Varnum Brooks is more than 600 acres in size.

Just downstream from the old powerhouse, the U.S.G.S. maintains a gauging station; average flow at this point is 546 cubic feet per second. Continuing downstream, the River passes under Groton Street's picturesque Covered Bridge, rebuilt in 1963 and then most recently in 2010. There has been a covered bridge at this location since about 1725.

Looking downstream from the covered bridge, the left (west) bank is "The Land between the Rivers", a finger of flood prone land, under the control of the Selectmen and currently leased for agricultural use, separating the Nashua and Nissitissit Rivers for more than one-half mile upstream from their confluence. On the opposite bank of the Nashua, Reedy Meadow Brook discharges. In the area where these three major watercourses come together, the complex flood dynamics are inadequately understood. The Jersey Street town wells are located in the aquifer associated with Reedy Meadow Brook, which originates in the north central part of Groton.

Downstream the banks of the Nashua are high. The Nashua River Rail Trail, constructed by Mass DCR in 2001-2002 on an abandoned railroad right-of-way, runs parallel to the River along its east side. A marshy-swampy basin bounded by East Street and Lowell Road detains runoff from a watershed of more than 300 acres. A small culvert

through the railroad embankment meters the flow toward the Nashua River; in flood stage, the River backs through this culvert, compounding the flood picture. Beaver activity in this area has caused extensive impoundment of water, flooding buried sewer manholes and street storm drainage lines. A beaver deceiver was installed in 2012 to address the flooding issues and there have been no reported incidents of flooding since.

Northward, the Pepperell/Dunstable town line splits the River. On the Pepperell side, additional drainage enters from the twin Nissitissit Hills. The River exits Pepperell at 168 feet above sea level, having dropped 30 feet since entering at the Groton town line, just eight river miles south.

The celebrated Nissitissit River is altogether different in character from the Nashua. Fast flowing and classified as a coldwater fishery, it sustains a population of trout *and* avid fishermen, and is cherished by kayakers and canoeists as well. Paralleling the Nissitissit River and the secret of its successful and relatively pristine shore is the abandoned railroad, over which, in the days before refrigeration, two daily shipments of ice were transported from Potanipo Pond in Brookline, New Hampshire to Boston. Through purchases and donations, much of the land and the abandoned railroad right-of-way abutting the Nissitissit River have come under the control of the Massachusetts Division of Fisheries and Wildlife, the Pepperell Conservation Commission, the Nissitissit River Land Trust, and other conservation organizations, assuring fishermen access to the river banks for a considerable part of its course. In 2016, the DFW purchased the fee interest on two lots totaling just over two acres that were part of a 13-lot OSRD on Hollis Street abutting the Nissitissit River, reducing the build out of the OSRD to 11 lots. Ownership of the 6.39 acres required as part of the OSRD was transferred to DFW, which owns the abutting 17+/- acre former Millie Turner property at the intersection of Rte. 111 and Hollis Street. Purchase of the Turner property excluded the 110' dam, which was owned by David Babin, but with the removal of the dam in 2015, DFW will now take ownership of the .47 acre dam parcel. In 2013, the dam was selected by the Division of Ecological Restorations as one of six priority projects and efforts to remove the high-hazard dam were completed in September 2015. Land protection efforts along the river continue and both State and Federal agencies continue to support and encourage efforts to improve the ecology of the river.

Two large agricultural properties, Kimball Fruit Farm and Twin Valley Farm, are located in the watershed of the Nissitissit River. Both of these properties were protected under the Agricultural Preservation Restriction (APR) Program in 2001 from development when purchased by the State, with participation from the Town. Gardner Farm on River Road has become the third APR property in Pepperell to participate in the Program. Although approval of the Gardner Farm APR was given by the Board of Selectmen, this APR did not receive funding support from the Town due to the Town's financial situation at the time the project was proposed.

Gulf Brook and Sucker Brook are important tributaries of the Nissitissit. One of Pepperell's municipal drinking water well is located on Gulf Brook, which has a total watershed of about 2,000 acres and headwaters in Stewart and Blood Brook. Blood Brook

empties into Heald Pond. A 22-acre enlarged Great Pond, Heald Pond was formed by a dam across Gulf Brook at its northernmost end. Gulf Brook has historically been dammed in several other spots along its course. Mention's Pond, between Oak Hill and Lawrence Streets, which drained in April 1993, was a former millpond created by an enormous earthen berm. The pond is gone, but its former location is evident today in the remaining



landscape. Also within the Gulf Brook watershed is a 265-acre parcel of protected conservation land known as Pepperell Springs, formerly a commercial water bottling operation, which contains several improved springs along Gulf Brook off of Chestnut Street. Sucker Brook arises in Coon Tree Pond as well as several other small pond/wetlands off of Jewett Street and fills Burkenshaw Pond and Sucker Pond before emptying into the Nissitissit River.

## 2. Ponds

Pepperell is richly endowed with natural and man-made ponds, most of them replete with local tradition. Many of the larger ponds were mentioned above in connection with streams. Another type of pond common in Pepperell is the vernal pond (typically the aforementioned "kettle hole"). These temporary isolated depressions capture snowmelt and rainwater through the winter and spring seasons, but usually dry up by midsummer due to evaporation and percolation. They provide important breeding habitat for salamanders, frogs, and various invertebrates.

## 3. Wetlands

Most of our present day wetlands (meadows, marshes, bogs, and swamps) were left to us in the form of lakes by the retreating ice sheets, only to have become filled in by siltation and plant growth during the intervening 10,000 or so years. Beavers account for certain recent wetlands, and along meandering sections of the Nashua and Nissitissit River, cut-off oxbows have become marshes.

The terms marsh, meadow, swamp, and bog are commonly used interchangeably. In fact these wetland types often intergrade and overlap, but each is sufficiently distinct to be defined:

**Marsh:** frequently or continually inundated wetland with emergent vegetation. Usually beginning and ending in a flowing stream, marshes have four inches to four feet of water on the surface. Marsh soil is soft, black, organic muck, formed from vegetation decaying in the presence of abundant oxygen. In Pepperell marshes expect to see cattails, bulrushes, blue flag, pickerelweed, smartweed, purple loosestrife, spatterdock, jewelweed, Joe Pye weed, and buttonbush. Marshes provide abundant food, water, and shelter for wildlife, and usually are teeming with furred, feathered, and finned tenants and transients.

**Swamp:** wetland dominated by shrubs or trees. Through the years, an aging marsh grows up with shrubs, commonly a mixture of alders, swamp azaleas, buttonbush, winterberry,

sweet pepperbush, elderberry, and willows. In more acid situations overlying sandy deposits, sweet gale, leatherleaf, highbush blueberry, and mountain holly are found. Saplings of red maple, ash, elm, and hemlock growing tall in a shrub swamp eventually shade out the shrubs. Skunk cabbage, false hellebore, marsh marigold, nodding trillium, royal fern, and sphagnum moss are typical as well. Less acidic shrub swamps have poison sumac and spice bush. Trees in swamps have very shallow roots and may be blown over in heavy winds, creating openings with open water where the swamp/marsh cycle may repeat cyclically. Upland edges are often dense with ferns. Mosquitoes are abundant, forming a basic element of the food chain.

**Wet Meadow:** grassland with waters at or near the surface most of year, but usually no standing water. Farmers value their wet meadows as drought insurance: "In a dry summer, that's the only hay we get." Look for sedges, rushes, reed canary grass, blue flag, vervaine, Joe Pye weed, loosestrife, willow herb, smartweed, marsh fern, and sensitive fern with blue-joint grass at the upland edges.

**Bog:** a peat-accumulating wetland, lacking inflow or outflow. In the cold, acid, stagnant water of bogs, vegetation decays slowly, due to lack of oxygen, and settles to the bottom as peat deposits. Sphagnum moss, leatherleaf, sedges, cranberries, sundews, and highbush blueberries are typical. In Pepperell, rhodora is mixed with sheep laurel and other heath species in bog habitats. Bog vegetation is often surrounded by richer open water that supports shrub swamp vegetation next to upland species.

The Massachusetts Wetlands Protection Act classifies wetlands by the type of vegetation in the area, noting a close correlation between certain soil types and the presence of wetland vegetation. Pepperell's wetland soils have been mapped by the USDA Soil Conservation Service, now Natural Resources Conservation Services (NRCS), as noted on the soils map; wetlands, as described above, have been mapped in the USGS topographical sheets for Pepperell and Townsend and the National Wetlands Inventory. Because of the small scale of these maps (1:25,000 and 1:80,000 respectively) many of the smaller (<5 acres) wetlands will not appear, although linear wetlands such as rivers and streams are readily apparent. Further, Massachusetts Geographical Information System (MassGIS) has generated maps of potential wetlands and vernal pools. This data is made available online at MassGIS by the state. While these online wetland maps are useful for planning, it is critical that on-the-ground identification and confirmation be used to regulate wetlands.

Of the several important functions of wetlands, the easiest to observe is the way in which they limit flood damage by soaking up stormwater runoff. The stored water is discharged gradually during dry seasons, maintaining stream flow and groundwater levels. In addition to filtering sediment out of runoff, wetland vegetation can absorb the nitrates and phosphates that commonly over-enrich surface water bodies, causing toxic algae blooms that decrease the oxygen supply for aquatic organisms. Wetland soils provide low-cost water purification by capturing heavy metals and other toxic pollutants, services of special value in association with water supply aquifers. Especially where connected as corridors along waterways, wetlands provide habitat for many kinds of wildlife. To

preserve the ability of wetlands to deliver these benefits, we need to avoid overtaxing their capacity and to protect them from detrimental uses.

An early Massachusetts statute called for reclaiming "wet, rotten and spongy lands for better uses". However, enlightened modern legislators recognized that wetlands play a unique role in maintaining environmental quality and, in 1965 (and periodically updated), enacted the Wetlands Protection Act (MGL Chapter 131, Section 40) in the interests of water supply and groundwater protection, flood control, prevention of pollution and storm damage, and protection of fisheries and wildlife habitat, and most recently, the "riverfront area", implemented August 7, 1996. Map 7, Surface Waters, Wetlands, and Potential Vernal Pools, provides a visual overview of Pepperell's water resources.

#### 4. Aquifer Recharge Areas

Pepperell has three municipal well sites, with two of the three well sites each having two wellheads. The newest municipal well, located in the northeast section of town abutting Hollis, New Hampshire, came online in 2012. Since 1977, the town has required that preliminary subdivision plans comply with MassDEP's Stormwater Management Policies, to address suspended solids and to require systems that will recharge groundwater. Additionally, in 1985, Pepperell passed the Water Resource Protection Overlay District (WRPOD) Bylaw. Maps were created to identify the recharge areas around each well site (See Map 5, Pepperell Zoning Overlay District). WRPOD Bylaw regulations include the 400' area around each wellhead (Zone I), as well as Zone II and Zone III, which are areas that contribute to recharge. Uses/activities that could have a negative impact on the wellhead, as well as restricting the amount of impervious surfaces allowed on each lot within the WRPOD, helps to protect the quality of the drinking water as well as to ensure recharge of the aquifer. The Town has made a substantial financial investment by purchasing and protecting land identified in the Zone II and Zone III well recharge areas, thereby preserving undisturbed forests and wetlands, which capture and help to purify the Town's drinking water.

#### 5. Floodplains

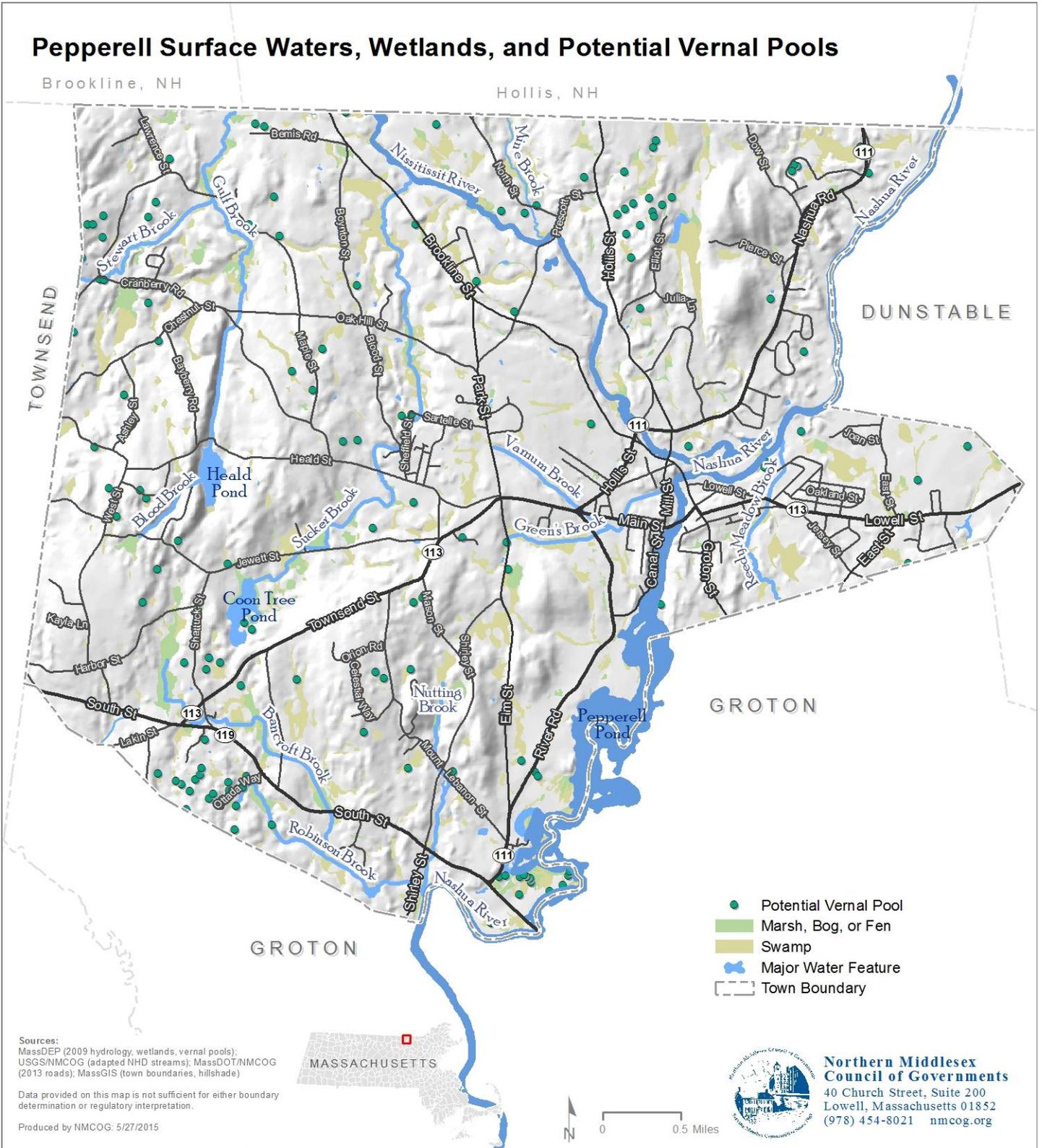
Bordering each stream or river is its floodplain, periodically flooded lowland made up of sediments carried by the river and deposited during flooding. Floodplains serve to carry off floodwater harmlessly, so care must be taken not to obstruct the movement of floodwaters or to diminish the capacity of these emergency channels. Floodplains may have wide fluctuations of the water table, with standing water periodically, but in late summer the sandy soils may become droughty.

Since the town's early beginnings, activity has concentrated around east Pepperell on the banks of the Nashua River, so that portions of the floodplain of the Nashua and its tributaries have been developed residentially, commercially, and industrially. Low-lying areas of Pepperell Center are subject to periodic flooding caused by the overflow of the Nashua and Nissitissit Rivers and Reedy Meadow Brook.

# Pepperell Surface Waters, Wetlands, and Potential Vernal Pools

Brookline, NH

Hollis, NH



The most severe flooding in recent years occurred in March 2010. Bridges on Routes 119 and 225 were closed causing major traffic delays for several days. Prior to that, the most extensive damage along the Nashua River occurred in March 1936. This flood resulted from the interaction between separate weather events: above average snowfall with cold temperatures and frozen ground, followed by a storm that brought thawing and successive days of rain, resulting in intense runoff and massive flooding. Roads were awash; bridges collapsed; factories and homes were inundated. The peak flow during the March, 1936 flood, as recorded by the USGS gaging station, was 20,900 cubic feet per second (cfs) compared with an average flow of 546 cfs. Structural damage occurred in Nashua River floods of May 1850; December 1878; July 1897; February 1900; March 1900; March 1936; September 1938; March 1968; and April 1987.

There are no flood control works on the rivers and streams in the town of Pepperell. The Main Street or Pepperell Pond Dam on the Nashua River offers no flood protection. In recent years, the state has sought to limit storm and flood damage by regulating floodplain development under the Wetlands Protection Act. In 1974, Pepperell entered the National Flood Insurance Program, making residents eligible to buy subsidized flood insurance. Under that program a comprehensive local flood management ordinance is being developed.

In June 2010, the Federal Emergency Management Agency (FEMA) published updated flood maps for the town of Pepperell. Though little was changed on these updated maps, the Town continues to also utilize the 1936 Nashua River flood elevations as shown by Raytheon Company's mapping of U. S. Army Corps of Engineers flood data. Wherever applicable, these actual flood records provide the base flood elevation for local regulatory purposes. Map 8, Pepperell Public Water Supply and Flood Hazard Zones, outlines the areas of the Nashua River, the Nissitissit River, and the lower sections of the Reedy Meadow Brook in Pepperell that are prone to flooding. The town of Pepperell does not currently have a zoning bylaw for controlling construction in floodplain areas but consideration is being given to establish a bylaw that would address this. FEMA is in the process of gathering data, as part of a five-year study, to create new flood elevation maps that would more accurately identify flood levels along the Nashua River.

#### **D. Vegetation**

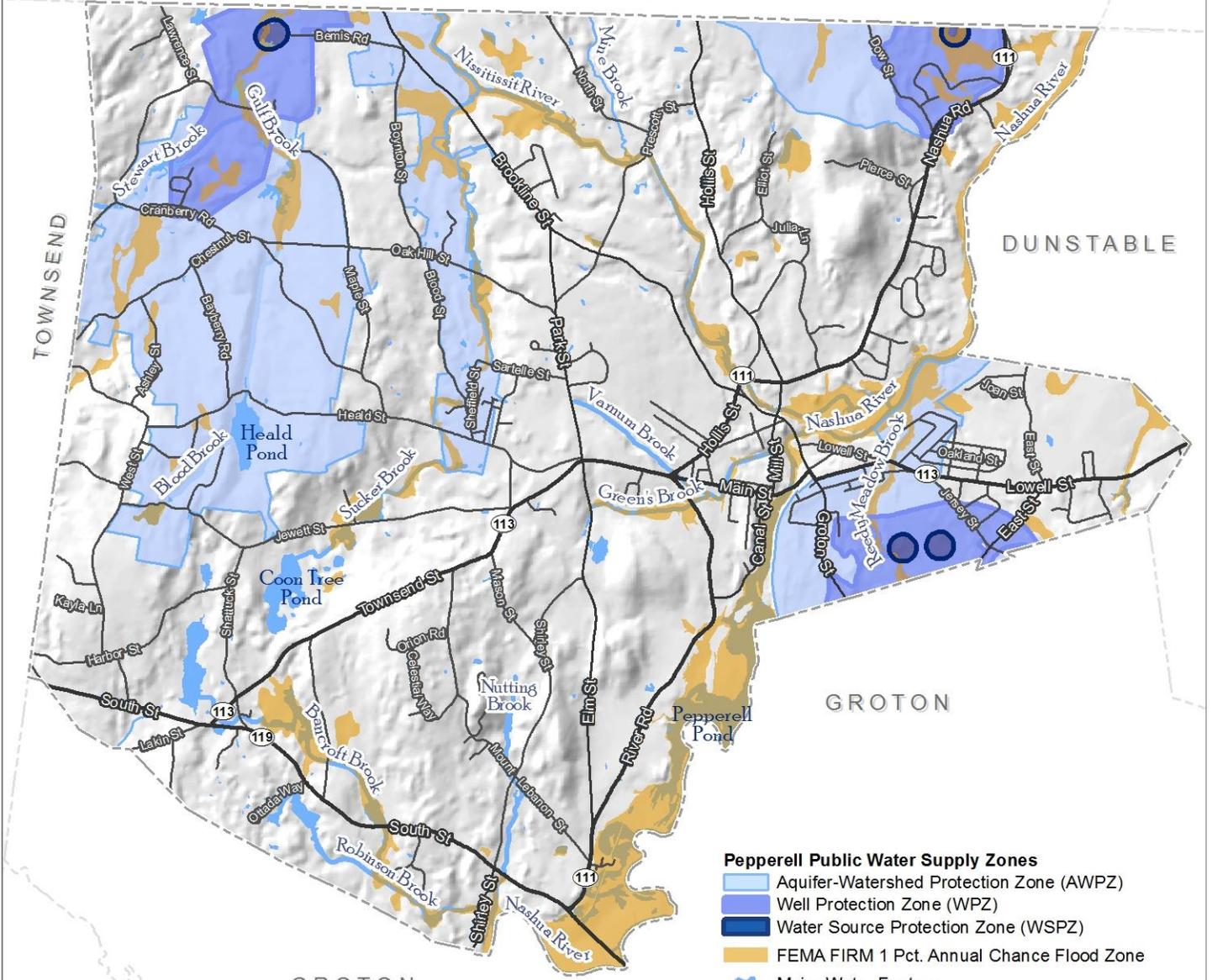
##### **1. General Inventory**

Pepperell is on the eastern edge of the transition zone between northern and more southern central hardwood forest, identified by the Society of American Foresters as the transition hardwoods - white pine - hemlock area. Lowell, just to the east, is in the Central hardwoods – hemlock - white pine (oak - hickory) area. The southern extent of the northern hardwoods – hemlock - white pine area is just three towns west of Pepperell. The proximity of the different forest types is reflected in the mix that occurs in Pepperell. Within the general forest types, local soils (and the geology that gives rise to them), topography, and land use history affect what is actually found. Sometimes the difference can be seen on opposite sides of a single hill: the dry, sunny south exposure supporting a mixture of hickory, aspen, and oak while the cooler, moister northern exposure may support sugar maple, hemlock, and paper birch.

# Pepperell Public Water Supply and Flood Hazard Zones

Brookline, NH

Hollis, NH



### Pepperell Public Water Supply Zones

- Aquifer-Watershed Protection Zone (AWPZ)
- Well Protection Zone (WPZ)
- Water Source Protection Zone (WSPZ)
- FEMA FIRM 1 Pct. Annual Chance Flood Zone
- Major Water Feature
- Town Boundary

Sources:  
 The Town of Pepperell (zoning overlay districts);  
 FEMA/MassGIS (flood hazard zones); MassDEP (2009 hydrology); USGS/NMCOG (adapted NHD streams); MassDOT/NMCOG (2013 roads); MassGIS (town boundaries, hillshade)

Data provided on this map is not sufficient for either boundary determination or regulatory interpretation.



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Along some of the Nashua River, and much of the Nissitissit River as well, floodplain forest-types form a narrow band, probably wider in the past before land clearance, fill, dams, and building changed the character of the land. Other streams have streamside vegetation that is also subject to flooding. Some of these have herb and shrub layers that reflect the flooding, but the dominant trees are less characteristic of the occasional wet conditions. Native species of disturbance such as poison ivy and nettles often dominate the understory of floodplains, with marsh species occurring in the less drastically disturbed areas. Sycamore, silver maple, willow and elm trees are typical of different types of floodplains. Hemlocks occur in streamside flood areas or headwaters that receive some seep from surrounding uplands.

The wetland vegetation of Pepperell is described more specifically in the section on wetlands. Many wetlands are dominated by red maples. As in the uplands, the specific types of wetlands typically contain a mix of southern and northern species: bogs, which tend to have a northern type of vegetation, include more southern species of rhodora, which flowers beautifully in May. Swamp azaleas and high-bush blueberries surround the small areas of bog vegetation, as they do in shrub swamps.

At the time of settlement the region was covered with a mixed forest in which the American chestnut was a dominant species. Within a few generations, 75 - 80% of the forest had been cleared for farmland, and there was a sawmill on every brook but the unsuitability of shallow, rocky soils for agriculture soon became apparent, and by the mid-1800's, many farmers had abandoned their hard-scrabble plots and moved west in search of better soil. The abandoned farms were quickly reclaimed by forest, often by unmixed stands of white pine, which invades open sunny sites, or by mixed aspen, black cherry, scrub oak, and gray birch. Junipers (grazers tend to stay away from their prickly stems) often invaded pastures first. Many second growth hardwoods have been cut over repeatedly, soon to grow up again from stump sprouts. Only the ubiquitous stone walls and scattered foundation holes throughout the woods testify that our town was mostly cleared and farmed a few generations back. The abundance of white pine in the woods continues to reflect the historical land clearing. The hurricane of 1938 flattened much mature second growth forest in Pepperell. More recently our woodlots came under pressure to produce firewood, and many trees suitable for lumber went up in smoke. The most recent impact to our forests was from the Halloween storm of 2011 that caused extensive damage to oak species and ornamental trees when heavy, wet snow weighed down branches that had not yet dropped their leaves.

Home construction was responsible for the loss of many of our forested areas. Even areas left wooded near homes reflect the past and current levels of human disturbance with a large number of exotic species becoming established in the woods and swamps of the area, often changing the character and habitat of the forest as they become a part of it. Wetlands seem to be particularly susceptible to invasion by non-native species such as purple loosestrife, bush honeysuckles, and European buckthorn which may dominate the shrub layers, gill-over-ground or creeping Charlie which forms large patches in many floodplains, or European yew which is increasingly common in woods. Some of the species of disturbance are native successional species that provide enjoyment for human and wildlife alike: blueberries, raspberries, and blackberries are

abundant in some areas of town where trees have been removed such as along power lines and in old fields on sand. As Pepperell continues to experience the invasion of many non-native plant species, it has been able to avoid the introduction of invasive insects such as Asian long-horned beetles and emerald ash borers but the hemlock woolly adelgid is present in town and threatens the beautiful hemlock that shade many of our streams and wetlands. The NRWA is working with local communities by providing leaf-feeding (*Galerucella pusilla*) beetles to control purple loosestrife. Wetlands where the beetles have been released have been successful in controlling the loosestrife.

On the sandy soils of East Pepperell, species of the pitch pine/scrub oak plant community are mixed with the predominant white pine/tree oak community and dominate in small sandy areas. Plants of openings in the pitch pine/scrub oak community, such as goat's rue, wild indigo, New Jersey tea, and little blue stem grass, occur in both natural and manmade dry, sandy areas along the east side of the Nashua River. West Pepperell has some areas of rich mesic forest on less acidic soils; these forests, dominated by sugar maple, basswood, yellow birch, and white ash, are characterized by a diversity of spring flowers that bloom before the overstory trees leaf out and disappear quickly as summer progresses. Most of the town is not so distinct, and white pine dominates most upland forests. The acidic soils help maintain the pine and some areas have succeeded to a mix of pine and oak, with mountain laurel or other species of dry, acidic conditions in the understory.

## 2. Forest Land

BioMap2 (See Appendix D) has identified two large, intact forested areas in Pepperell that are core forest habitat. They are critical habitat for species, especially bird species, which are sensitive to roads and development and that require these large, intact, unfragmented forested areas.

One of Pepperell's largest tracts of forestland begins along Blood Brook ravine on Town of Pepperell conservation land and continues to land owned by the Nashoba Conservation Trust and then through the Pepperell Springs property along Gulf Brook to Hollis, NH. This tract of forest, together with protected land in Hollis, NH accounts for more than 2,000 contiguous acres. A Sugar Maple – Oak – Hickory Forest (formerly classified as Circumneutral Talus Forest) is located within this forested tract.

Pepperell's Town Forest is approximately 100 acres. Pepperell's Town Forest includes 82.8 acres between River Road and Elm Street and 9.3 acres between Heald and Jewett Streets. This is a small Town Forest when compared to Townsend and Groton, who own hundreds and hundreds of acres of protected forested property. Pepperell's Town Forest on River Road and Elm Street is predominately white pine with equal portions of red and black oak and a scattering of hardwood species. This area was once agriculture land until 1925 when the State offered 5,000 white pine seedlings to any city or town who purchased at least 100 acres to create a Town Forest. The trees were not harvested until 2012, and the selective harvest has been favorably received. Funds from the harvest have been used to purchase three ADA-accessible picnic tables for the Town Picnic Area on River Road and to create a fire road, which has become a favorite for hikers and mountain

bikers, as well as access gates, to prevent motorized vehicles and illegal dumping. See General Inventory for additional information.

3. Public Shade Trees

In 1980, a Scenic Roads Bylaw was adopted to preserve the “qualities and character” of Pepperell’s town ways. Roads other than Rte. 111, Rte. 113, and Rte. 119, have been designated as scenic roads. Any work on scenic roads requiring the cutting or removal of trees or the removal or destruction of stone walls, requires Planning Board approval. Tree work along public ways requires the review of Pepperell’s Tree Warden.

4. Agricultural Land

Pepperell has many farms in addition to three large Agricultural Preservation Restriction (APR) properties. Kimball Fruit Farm produces crops for sale at their local farm stand, a farmer’s market in Boston, and Boston restaurants. Twin Valley Farm produces hay for the beef they raise and crops that are sold at the local Farmer’s Market and their roadside farm stand. Gardner Farm is a dairy farm. Pepperell’s Board of Selectmen lease 36 acres of town-owned property to a local farmer, who sells organic produce. There are two local farms that sell beef products and a dairy farm. Coon Tree Farm, now known as Clover Luck Farm, is once again an active farm, where pigs are bred, raised, and sold. Milking cows support the availability of raw milk, sold on the farm. In addition, with over 400 horses, there are many horse farms in Pepperell. Our agricultural lands are appreciated by those driving through town who enjoy the scenic views of rolling meadows, farm animals grazing, and many opportunities for pick your own fruits.

5. Wetland vegetation

The wetland vegetation in Pepperell was discussed in General Inventory above.

6. Rare species

Pepperell has one vascular plant, the Fogg’s Goosefoot (*Chenopodium foggii*) listed as endangered. This extremely rare plant which inhabits open, dry habitats was last seen in 1966. This type of habitat has declined and has been replaced by forests.

A herbaceous species of special concern, the Showy Lady's Slipper (*Cypripedium reginae* Walter), which was previously known to exist in Pepperell, has not been seen for many years, according to the Massachusetts Natural Heritage Program.

7. Unique Natural Resources

Pepperell’s wetlands include 45 certified vernal pools and 132 potential vernal pools. Several locations include vernal pools that are clustered, which improves the habitat the pool offers by insuring if something happens to one pool, there are other pools available. *BioMap2* has identified a cluster of vernal pools with state-wide significance that extend into Groton near Robinson’s Brook. In addition, there are two additional clusters of vernal pools that were not selected as *BioMap2* cores but are still significant to the species that rely on them.

8. Vegetation Mapping Projects

*BioMap2* was designed to identify the most critical areas that should be the focus of land protection and stewardship in Massachusetts over the next ten years. *BioMap2* identifies the 2.1 million acres of core habitat and critical natural landscapes of which 1.2 million areas are unprotected. These 1.2 million acres should be the focus of every community in Massachusetts to conserve biodiversity.

E. **Fisheries and Wildlife**

1. Inventory

Because of its diverse landscapes, Pepperell enjoys a relatively rich variety of animal species. Contiguous forested areas provide breeding habitat for such normally secretive species as the northern goshawk and pileated woodpecker. The Massachusetts Division of Fisheries and Wildlife advises humans not to eat fish from the Nashua River due to elevated mercury levels, but osprey, great blue herons, and belted kingfishers ignore the warning. Nesting boxes have been placed on several conservation area parcels as well as private parcels, in an effort to reestablish viable populations of bluebirds and wood ducks. The lack of nesting cavities in standing dead trees has been a limiting factor for these species in the past. Nesting is also interrupted for the eastern meadowlark, grasshopper sparrow, and bobolinks when fields are hayed early (June) in the season. Efforts by the Conservation Commission to delay haying on town-owned conservation properties until after August 1 and removing 18 acres of apple trees to create a meadow at the Heald Street Orchard has been beneficial to nesting birds. Habitat alteration, destruction, and fragmentation remain the greatest threats to wildlife in Pepperell.

Of the fur-bearing mammals, raccoon, striped skunk, and opossum are not very selective about their living requirements and find food, cover, and water easily; all three species are commonly sighted near human habitation. In recent years, increased reports of coyotes, bear, and bobcat in backyards have left some people uncomfortable. Education is key and information about living with these large mammals is available on the MassWildlife website. Pepperell's legacy of poultry farming probably accounts for today's thriving red and gray fox populations. Fisher, too, have staged a comeback, perhaps due to less trapping of the species and increasing forested areas which provide ample habitat for their favored prey - squirrels and porcupines. Beavers, extirpated during colonial times, have made the most dramatic impact on the environment in recent years. An active and prolific population has found suitable habitat in many of Pepperell's existing waterways. When food supplies have been exhausted in one area, the beaver develops, through its engineering talents, a new wetland where it can readily access new food sources. These traits have not endeared the beaver to homeowners near floodplains nor to the Pepperell Highway Department, which has devoted many man-hours to unplugging roadway culverts.

On a state-wide basis, the Division of Fisheries and Wildlife generally notes that the fisher, coyote, beaver, and river otter populations tend to be increasing while the mink, weasel, fox, and bobcat populations remain stable. The Division does not document the occurrence of the different species, but does note the existence of habitats that are suitable to a given species. Bear are often sighted within Pepperell and an occasional

moose as well. Attracted by bird feeders, bear are becoming regular visitors to many backyards. If the number of deer shot by hunters or killed by automobiles within town limits is any indication, the deer population is on the increase. The deer population has also contributed to the rise in tick-infected diseases.

Pepperell's population of bats, including the northern long-eared bat (*Myotis septentrionalis*), which is a species listed as threatened by the U.S. Fish and Wildlife Service and endangered under the Massachusetts Endangered Species Act (MESA) has plummeted due to white-nose syndrome. This fungal infection has killed millions of bats in North America and can be spread easily to other bats sharing a hibernaculum. Pepperell has a large hibernaculum on one of the Town's conservation properties, which is monitored to prevent further disturbance to the already compromised population of bats present.

Hunting is currently allowed in Pepperell, in accordance with state hunting regulations. The Conservation Commission has enacted rules governing hunting on conservation areas in town, which are posted on the Town's website.

The Nissitissit River is considered one of the best trout streams in the eastern part of the state. The Nashua River, Unkety Brook, Gulf Brook, Sucker Brook, and Heald Pond are other favored fishing spots. The Division of Fisheries and Wildlife stocks brook trout in the Nissitissit River, Unkety Brook, and Sucker Brook. The Nashua River is a popular destination for bass fishermen, many of whom practice a catch and release policy.

## 2. Vernal Pools

There are 45 certified vernal pools and 132 potential vernal pools in Pepperell. Vernal pools, also called vernal ponds or ephemeral pools, are temporary pools of water that provide habitat for specific plants and animals. Many species of invertebrates and amphibians use vernal pools for part of their life cycle. Wood frogs, mole salamanders, and fairy shrimp are examples of fauna that rely on vernal pools. Most vernal pools are dry during the summer months but some may have water all year. The pools fill with water during late fall and winter. During both the wet and dry seasons, these pools support various flora and fauna. In Massachusetts, the chorus of wood frogs and spring peepers in vernal pools is a welcome sound in early Spring, though those collecting syrup from maple trees know this means the syrup will soon stop running.

## 3. Corridors for Wildlife Migration

MassDEP has created a document *Mass Wildlife Habitat Protection Guidance for Inland Wetlands*, which emphasizes the importance of wildlife migration corridors for wildlife migration routes, whether from wetland to upland, or corridors which connect multiple parcels. Wildlife corridors include riparian corridors of which the Nissitissit River is an important one. As a coldwater fishery and a focus area of so many land protection organizations, many properties along the Nissitissit River are protected, thereby creating the unfragmented corridor necessary for wildlife to migrate.

With the help of the NRWA, MA DFW, Nissitissit River Land Trust, Nashoba Conservation Trust, and other land protection organizations, the Town of Pepperell has identified corridors that are critical and focus on properties within these corridors,

especially properties along the Nashua River, Nissitissit River, and our streams and brooks. These contiguous parcels are valuable for biodiversity and the species that use them. Habitat fragmentation negatively impacts many species. Often times, wildlife corridors are used by people who enjoy walking wildlife trails.

In northwest Pepperell, there is a large tract of forested land, which follows Gulf Brook that has been protected. Many properties along the Nissitissit and the Nashua River have also been protected.

#### 4. Rare Species and Significant Natural Communities

Pepperell has 17 rare species that are endangered, threatened, or of special concern (See Appendix D, Species List). Two of the species are mussels, two birds, one amphibian, one vascular plant, two reptiles, two mammals, three reptiles, and four dragonfly/damselflies.

Some of the rarer members of Pepperell's flora and fauna include the endangered Brook Floater or Swollen Wedge Mussel (*Alasmidonta varicosa*), endangered Showy Lady's Slipper (*Cypripedium reginae*), threatened Marbled Salamander (*Ambystoma opacum*), threatened Grasshopper Sparrow (*Ammodramus savannarum*), and threatened Blanding's Turtle (*Emydoidea blandingii*). Pepperell's *BioMap2*, also included in Appendix D, is a summary of the most critical wildlife habitat in Town. Appendix D contains correspondence from the Division of Fisheries and Wildlife's Natural Heritage & Endangered Species Program with further information about habitats deserving special consideration and fact sheets about the individual endangered, threatened, and species of concern in Pepperell.

Priority Types of Natural Communities are communities which are uncommon and considered to be a priority for conservation. Pepperell's has a Sugar Maple – Oak – Hickory Forest community, which is a priority type of Natural Community, along Gulf Brook. This community is considered to be in very good condition because there are no exotic invasive species and a variety of species. The forest in Pepperell is on conservation land, which further protects this sensitive community.

#### F. **Scenic Resources and Unique Environments**

**Scenic landscapes include notable areas such as hilltops, stream corridors, open meadows, agriculture landscapes, scenic views, and scenic roads. Visit**

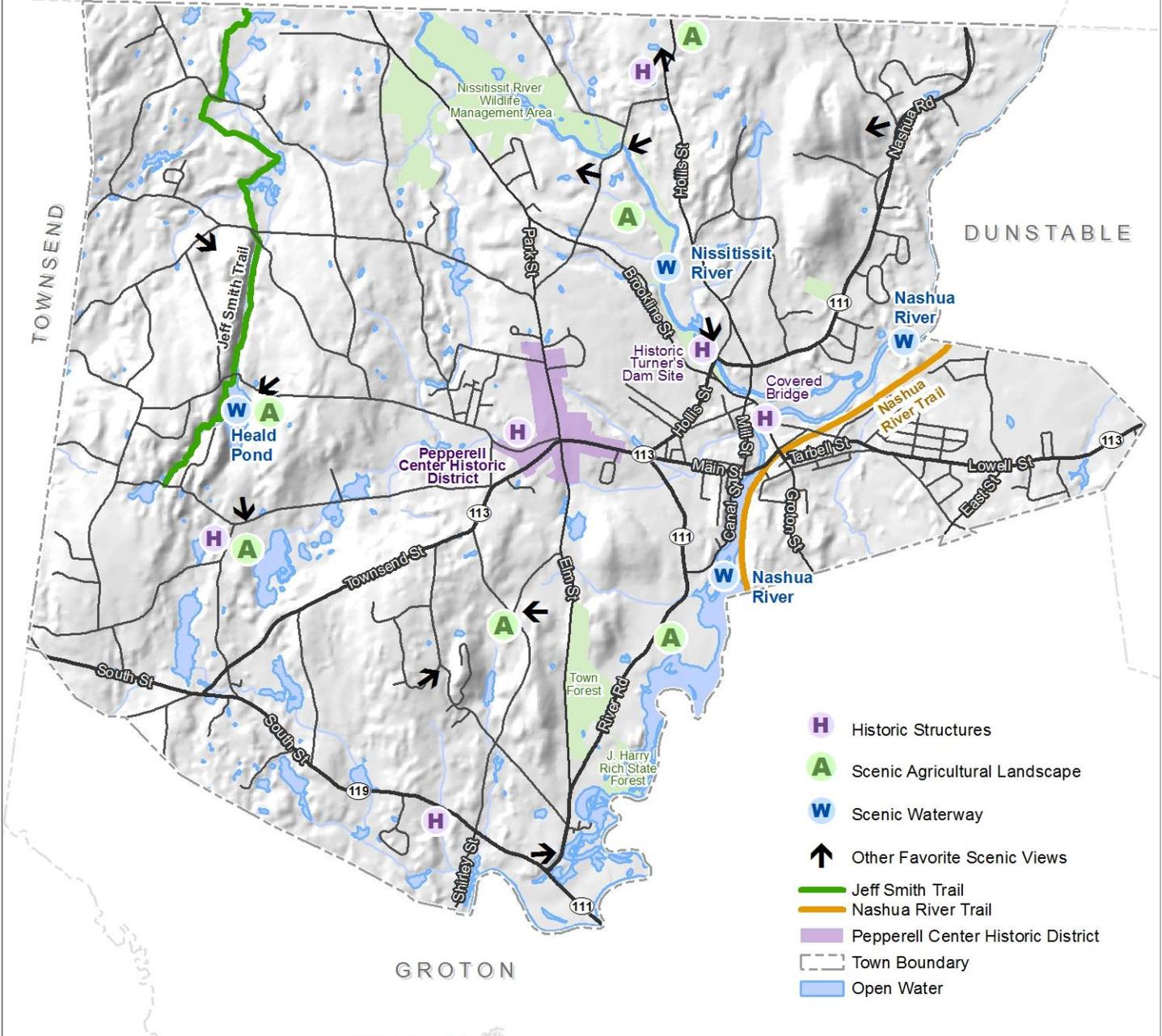
**[www.mass.gov/dcr/stewardship/histland/landSureys.htm](http://www.mass.gov/dcr/stewardship/histland/landSureys.htm)**

The Department of Environmental Management (DEM), now known as Department of Conservation and Recreation (DCR), completed the Massachusetts Landscape Inventory in 1982 to identify, locate, and help preserve the state's important scenic features. Three classes of scenic quality were used: Distinctive, highest visual quality, making up about 4% of the Commonwealth's land; Noteworthy, important visual quality, about 5% and; Common, the remaining 91%. Pepperell, which is included in the Inventory in the Lower Nashua Valley Unit, has many Distinctive and Noteworthy areas, as described below and shown on Map 9, Scenic, Historic, and Cultural Features. In previous Open Space and Recreation Plan surveys, when respondents were asked to name their favorite scenic view in town, most of these areas were frequently named. The Landscape

# Pepperell Scenic, Historic, and Cultural Features

Brookline, NH

Hollis, NH



Sources:  
 The Town of Pepperell (unique features); MassDOT/NMCOG (2013 roads); MassGIS (town boundaries, hillshade; open space); MassGIS/Mass Historic Commission (2014 MACRIS historic districts/sites); MassDEP (2009 hydrology)

Data provided on this map is not sufficient for either boundary determination or regulatory interpretation.

Produced by NMCOG: 5/26/2015



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Inventory in 1982 warned that “a large area in Pepperell which, a few years ago, would have merited inclusion in this unit has been lost to suburban development.” This warning should alert us to the need to protect Pepperell’s remaining scenic resources for future generations.

In 2002, the Secretary of Energy and Environmental Affairs designated over 8,000 acres in Pepperell to be included in the Petapawag and Squannassit ACECs. These ACECs, with over 63,000 acres, receive special recognition because of the significance of their natural and cultural resources.

The Natural Heritage and Endangered Species Program (NHESP) *BioMap2* project provides guidance to communities by identifying critical areas for conservation that should be the focus of land protection efforts.

### 1. Gulf Brook Watershed

Heald Pond, Heald Street Apple Orchard, Blood’s Brook Ravine, and Gulf Brook Ravine are considered by most residents as some of Pepperell’s most scenic features, and these areas were rated as Distinctive in Massachusetts Landscape Inventory. Heald Pond, a large pond surrounded by woodlands with striking ravines both to the north and south, is also a recreational asset for canoeing, fishing, swimming, ice-skating, and snowshoeing. The Orchard, most of the shore of the Pond, and a majority of the land along Gulf Brook has been protected through acquisition (with Town funds and matching state Self-Help (LANDS) grants) and private donations. There are many scenic trails throughout the area that allow exploration and enjoyment of the unique scenery, wildlife habitats, and plant life.

For 15 years, the Heald Street Apple Orchard was managed for the Town by a private orchardist under contract. Because of low apple prices, the orchardist stopped renewing the contract after the 1999 growing season, and since that time the Orchard has not been managed for apple production. Over time, this will mean a change in the views. In 2008, a Wildlife Habitat Improvement



Program (WHIP) grant was received to create and implement a Management Plan for the Orchard. In 2009, 18 of the 80 acres of apple trees at the Orchard were removed, creating a meadow for grassland birds and other wildlife.

In 2012, a savannah was created on four acres, leaving a few select trees and shrubs within an area of grasslands, to attract other species of wildlife.

Beginning in 2002, a limited number of bow hunting permits were issued, in a trial season, for deer hunting within the Orchard, providing recreation and wildlife management. Today 12 permits are issued annually. Hunters who have been issued permits are allowed to bow hunt for the entire deer season.

The “Jeff Smith Trail” begins on dirt Jewett Street and terminates in Hollis, New Hampshire, following the course of the Gulf Brook watershed. Described in the *Appalachian Mountain Club Trail Guide*, this Trail follows Blood’s Brook, circles the west shore of Heald Pond, and follows the course of Gulf Brook after it exits the Pond to the



north. The trail passes through the Gulf Brook Ravine area, a unique geological feature, listed as “Outstanding” in the DEM Inventory.

Approximately 265 acres of open land, known as Pepperell Springs, containing most of this ravine and surrounding forests, were protected in 2005. The Pepperell Springs Preservation Coalition, which included representatives from the Trust for Public Land, the Town of Pepperell, the Nashoba Conservation Trust, the Nissitissit River Land Trust, and the Nashua River Watershed

Association, worked countless hours to raise the funds necessary to protect this unique property, which preserved wildlife habitat, protected a municipal water supply, expanded a 3,000 acre contiguous protected forest landscape, provided expanded recreational opportunities, and saved a site of historical significance to the town. With numerous trails, including the Jeff Smith Trail, the Pepperell Springs property offers various recreational opportunities in addition to bird watching and wildlife viewing.

## 2. Sucker Brook Watershed

Sucker Brook, which has its headwaters in Coon Tree Pond on Jewett Street, is a Noteworthy feature according to the Landscape Inventory. As seen in the “Water Resources” section, there is a medium yield aquifer that follows the course of Sucker Brook as it flows north into the Nissitissit River. The Keyes Conservation Area on Oak Hill Street, which was renamed Keyes and Parker Conservation Areas in 2014 after Richard Parker donated approximately 20 acres to the Town of Pepperell Conservation Commission, provides public access to this scenic resource. These two parcels of almost 70 acres encompasses a mosaic of pastoral scenes interspersed with the brook and its associated wetlands, a pond, upland conifer and hardwood forests, stone walls, and hayed fields.

## 3. The Nashua River

The Nashua River, Nashua River Islands, and Pepperell Pond are all rated as Distinctive, providing excellent river scenery that is particularly enjoyed by boat or canoe. The 11 mile Nashua River Rail Trail, which runs along the eastern side of the Nashua River (approximately two miles in Pepperell) allows bikers, rollerbladers, horseback riders, hikers, cross-country skiers, and snowshoers the opportunity to enjoy this area of the river. Two parcels of land along the west side of the river including the Walent property, purchased by DEM, and an adjoining railroad corridor, purchased by the Town of Pepperell, have increased availability of scenic areas along the opposite side of Nashua River. In addition, several islands and a number of small lots in the vicinity are protected.

The J. Harry Rich State Forest is located directly across the river from the Walent property in Groton.

4. *The Nissitissit River*

The Nissitissit River is designated as an Outstanding Resource Water (ORW) under the Massachusetts Surface Water Quality Standards of 1995. More than 450 acres of land have been permanently protected along the Nissitissit River through the joint efforts of the Massachusetts Division of Fisheries and Wildlife, the Nissitissit River Land Trust, and the Pepperell Conservation Commission. This is an area of Noteworthy scenic quality. Trails on North Street wind through the woodlands to the clean, fast-moving Nissitissit River. Fly-fishing only is the rule for a section of the River approached from Brookline Street.

In addition to their aesthetic values, both the Nashua and Nissitissit offer excellent recreational opportunities and wildlife habitat. With the removal of the Turner Dam in 2014, categorized as a high-hazard dam due to years of continued deterioration, the DFW purchased the property, thereby allowing public access to this historic site. The historic Millie Turner house and barn were dismantled in 2011 with plans to reconstruct it elsewhere at a later date. The former Turner property to this day contains reminders of the historic Blake Brothers Machine Shop that operated during the mid 1800's. The historic sluiceway remains but now serves as a pathway to the river. A short distance from the former Turner Dam location and just below the confluence of the Nissitissit and Nashua Rivers is Pepperell's Covered Bridge, a scenic, historic attraction that many tourists photograph each year. The Covered Bridge has been rebuilt multiple times since about 1740, when it was first constructed. The Covered Bridge, in desperate need of repair, was closed in 2008, demolished, rebuilt, and reopened in 2010. The Covered Bridge is one of only three covered bridges on public roadways in Massachusetts that allow vehicular traffic.

5. *Agricultural Landscapes*

The combination of winding country lanes, massive trees, and stone walls, as well as the proximity of many of Pepperell's wetland resources, offers a glimpse of a bygone era in many areas of Pepperell. Noteworthy views of barns, ponds, tree-lined pastures, and fields can be appreciated by driving along Lawrence Street, Shirley/Mason Streets, Jewett/Shattuck Streets, Hollis Street, and the Brookline and Prescott Street area of North Pepperell. Prescott Street also has several historic structures, including the Colonel William Prescott home and "the old schoolhouse". The "Land between the Rivers" on Groton and Nashua Roads is an area of farmland, rich in soil and history. With development replacing many farms in this area, Pepperell is fortunate to have three farms who have participated in the State's Agricultural Preservation Restriction program. Together Kimball's Fruit Farm on Hollis Street, Twin Valley Farm on Brookline and Prescott Streets, and Gardner Farms have protected almost 400 acres of agricultural land through this program. In addition, the Town has signed an agreement to place an APR on the Town-owned agricultural land formerly known as the Adamowitch property or "Land

Between the Rivers', which was purchased in 2000. In all, more than 36 acres of Town-owned land is leased out for agriculture.

6. Open Meadows

Pepperell's open meadows add to the rural character and agrarian past of the Town. While some open meadows are hayed early to provide crops necessary for local farms, the haying of others is delayed to allow Bobolinks and Eastern Meadowlarks the opportunity for their offspring to fledge. The open meadows provide excellent habitat for wildlife. The beauty of these open, rolling meadows can be seen while traveling on North Street, Prescott Street, Mason Street, South Road, Oak Hill Street, Shattuck and Jewett Streets, and at the Pepperell Airport.

7. Forests

Since its purchase in 1925, Pepperell's 90-acre Town Forest on River Road and Elm Street remained largely undisturbed. Ninety acres of predominantly white pine have provided habitat for various species of wildlife and trails for recreation. The 90-acres were once fields for agriculture but communities were encourage to reforest farmlands and the Commonwealth provided free white pine seedlings for this purpose. In 2012, the Town Forest Committee received a grant from the Department of Conservation and Recreation to prepare of a ten-year Forest Management Plan. The Town Forest Committee, working with local Consulting Forester Gary Gouldrup, identified goals for the Plan and pursued a selective cut of the Town Forest. The funds raised from the cutting project are managed by the Town Forest Committee and a portion of the funds were recently used to construct a fire road and to install access gates. The fire road connects to a trail system at the former Walent property on River Road, now owned by DCR, and continues to a trail system on Elm Street through the former Scotch Pine Farm, which continues to Shirley Street. Previously, three ADA-accessible picnic tables were purchased for the Town Picnic Area at the Town Forest with proceeds from the harvest.

8. Hilltops

Pepperell has noteworthy drumlins, or hilltops formed during the last period of glaciation. The two Nissitissit Hills form one of Pepperell's highest areas, but can only be viewed from the road as they are in private ownership, zoned for Recreation Residence. Privately owned pastoral views and vistas occur along Mt. Lebanon Street, leading up the Mt. Lebanon, the highest point in Pepperell. There are trails at the base of Mt. Lebanon, on land owned by the Nashoba Conservation Trust, where the public can enjoy the scenic beauty.

9. Cultural, archeological, and historic areas

In 1994, the Pepperell Center Historic District was added to the National Register of Historic Places by the U.S. Department of Interior. The area around Town Hall including many of the historic homes, the Lawrence Library, the Community Church, the Prescott Grange, the Town's oldest cemetery, and the war memorials are all included in the Historic District.

## **G. Environmental Challenges**

### **1. Hazardous waste and brownfield sites**

Since 1987, there have been 37 reported incidents involving waste releases in Pepperell (See Appendix E, Hazardous Waste Sites and Spills). All of the reported incidents have been remediated or are in the review process. DEP provides a 24-hour emergency response notification line to report releases of hazardous waste.

A major spill discovered in March 2015, included the release of over 9,000 gallons of diesel fuel from Shattuck Oil Company. Aggressive efforts by the owners of Shattuck Oil, under the direction of a Licensed Site Professional and MA DEP, prevented the spill from reaching the Nissitissit River. Large quantities of contaminated soil were removed from the site and a new containment structure was engineered and installed to prevent any similar reoccurrence.

During demolition of the former privately-owned Pepperell Paper Mill in 2011, a petroleum product was released from the 10.4 acre site into the Nashua River. The Massachusetts Department of Environmental Protection (Mass DEP) was contacted, a Release Tracking Number assigned, and remedial activities were started. GZA GeoEnvironmental of Norwood was hired by the privately-owned paper mill and GZA submitted a Release Abatement Measure (RAM) plan to continue the maintenance activities and to monitor the surface water in the Nashua River. As a result of testing on site, which determined a small areal extent of the oil, it was determined, the residual contamination will be reduced to background conditions within five years so a Class C-1 RAO (Temporary Solution) has been implemented for this site and will be revisited within five years.

Historically, the area between the North Nissitissit Hill and the Nissitissit Hill Peaks was used for farming. In 1965, plans for a ski hill were developed. The former Indian Head Ski Area was located on Nashua Road by Dow Street. In 1977, the town gave a zoning variance to expand the ski area using construction demolition materials to fill the valley. As the landfill was being constructed, the Department of Environmental Quality Engineering (now the Department of Environmental Protection or DEP) issued an order to the owner to stop the operation due to reports of leachate running from the landfill as well as erosion problems. In 1978, the landfill was capped and trenches were created to handle surface water runoff that is directed into intermittent streams. In 1981, DEP inspected the site in response to reports of continued leachate seepage from the northern slope of the landfill. Tests conducted at this site in 1981 found elevated levels of some organic compounds and some metals were present. In 1984, some metals were detected in groundwater monitoring wells on Dow Street. All tests to date have found these elements to be well below EPA's regulatory limit. As of February 1992, the site has been recommended for continued EPA investigation and possible evaluation in the Superfund Site Assessment process.

### **2. Landfill**

Until June 1996, Pepperell operated a sanitary landfill off Boynton Street on approximately 66 acres to dispose of the town's trash. Twelve and a half acres were site-

assigned and used as an unlined sanitary landfill since June 1975. According to the town's records and town officials, the sources of refuse over the years include only household and business refuse generated in Pepperell. The major industries located in town, which used the sanitary landfill, are the Pepperell Paper Co. (formerly James River) and Bemis Bag Co. There are no known hazardous wastes stored or buried on site.

At the same time that the "dump" closed, a new Transfer Station came on line on the Boynton Street property. The former landfill is now capped and monitored. Recycling is carried out nearby on the same parcel. The landfill continues to be monitored through a third party consulting firm, which requires testing be completed until 2027.

For the past twelve years, the Town of Pepperell Board of Health has conducted a well-received hazardous waste collection day, with the intent of keeping hazardous material out of the landfill/transfer station. A subcontractor collects the hazardous waste and disposes of it properly. As of September of 2016, Pepperell joined the Devens Regional Household Hazardous Waste Products Collection Center, which will provide multiple opportunities each year for residents, and qualified businesses, to dispose of their hazardous waste products.

To the northwest of the landfill site is the Bemis Road municipal well field, which supplies drinking water to between 50 and 55% of those currently on the Pepperell water supply system. The distance between the landfill and the well is .6 miles. The well field is located hydrologically upgradient from the landfill, and there is a large natural deposit of clay material between the well field and the landfill. To date there has been no impact on the well field from the landfill. The Bemis Road well has a 400' radial protection zone surround the actual well site. In addition, Pepperell's Water Division post signs to alert neighbors near our public water supply wells asking for their support in protecting our drinking water and posts information on their webpage cautioning of the improper use of lawn chemicals and other negative impacts to our drinking water wells.

### 3. Erosion

There are no significant erosion issues in Pepperell. Projects that take place near wetland resource areas are reviewed by the Conservation Commission and erosion control devices are required while work is being completed and left in place until the work area has been satisfactorily re-vegetated. Pepperell passed a Soil Removal Bylaw in 2000, which was revised in April 2003. The Building Inspector is responsible for insuring construction on site does not exceed the amount displaced by the building foundation and subsurface sewerage system. Soil removal greater than 1000 cubic yards requires a Special Permit from the Board of Selectmen. In addition, to controlling erosion, Pepperell's zoning regulations require site design, materials, and construction processes be designed to avoid erosion damage, sedimentation, or uncontrolled surface water runoff. Forestry projects can increase erosion if Best Management Practices are not implemented.

### 4. Septic System Failures

The Massachusetts Environmental Code, Title 310 CMR 15.000, has undergone some revisions in 2006 and more recently in January 2014. The majority of septic system

failures are caught when a dwelling is being sold, which requires an inspection under the revised Title V regulations. With the final implementation of the Town of Pepperell sewer district in 2010, failed systems can tie directly into town sewer, or if they are located out of the sewer district, a repair is required. Newer technology for failed septic systems has emerged with more products on the market. Some make claims that the effluent is almost as clear as tap water, thus less of an impact to ground (source) pollution.

The most frequently cited reasons for failure of a system tend to be improper siting, installation, or maintenance. Much of Pepperell's housing stock is aging, and many of the septic systems for houses built in the 1970's are now reaching the end of their lives. There is currently no mechanism in place for dealing with septic failures, since many of them go undetected unless the property is on the market. Systems can operate in groundwater allowing contaminants, pathogens, and excessive nitrogen and phosphorous to leach freely into the water table, eventually entering wetlands, lakes, ponds, or streams. In some situations, the homeowner is aware of a problem, such as when breakout or septic effluent horizontally leaches out or ponds on the surface. There is no requirement that a septic failure be reported to the Board of Health. Under state law, septic systems need only be located 50 feet from a wetland area. This measure generally protects human health, but does not prevent high nutrient loads from entering wetland areas, impacting both wildlife habitat and water quality.

#### 5. Flood Problems and Flood Protection Measures

In June 2010, the Federal Emergency Management Agency (FEMA) updated the 1993 flood maps for the Town of Pepperell. These maps improve the accuracy of the delineation of the floodplain in areas such as the Varnum and Greens Brooks and the confluence of the Nissitissit and Nashua Rivers with Reedy Meadow Brook. At the June 1993 Town Meeting, Warrant Article 32 was passed, establishing a flood control district for any new construction in Pepperell. The Building Inspector oversees building in this district.

A number of other potential flooding problems remain. There continues to be a proliferation of auto body-type industries within the floodplain of the Nashua River on Rte. 119 at its intersection with Rte. 111 (River Road). A cluster of small private roads, in a densely populated area using septic systems, is within the floodplain. These include Dartmouth Lane, Princeton Lane, Yale Road, Brown Lane, Harvard Lane, and 168 to 184 River Road. In addition, two of Pepperell's industrially zoned areas abuts the Nashua River. In 2010, heavy rains caused extensive flooding which required the closing of many major roadways leading into and out of Pepperell. Sections of Rte. 119, when entering Pepperell from Groton, are in a floodplain and this stretch of roadway is often closed when the Nashua River tops its banks and floods Rte. 119.

Pepperell has seen an increase in the number of beavers present due to a change in State regulations regarding trapping. With so many wetland resource areas in Pepperell, flooding of roadways, septic systems, and private wells, are concerns. The Board of Health offers beaver and muskrat permits to alleviate the potential impacts of flooding. The Conservation Commission is part of the permitting process by insuring any

work completed under the Board of Health permit will conform to the Massachusetts Wetlands Protection Act regulations.

6. Sedimentation

Stormwater Management is a critical component of any development projects. Disturbance of soils can increase runoff, which can lead to sedimentation and erosion. The Massachusetts Association of Conservation Commissioners offers a handbook, *Erosion and Sedimentation Control*. This handbook assists Conservation Commissions by insuring Best Management Practices are followed to reduce the negative impacts of erosion and sediment from reaching natural resources and degrading habitat when soils are disturbed. In 1996, MA DEP issued its Stormwater Management Policy. Projects near wetlands or even projects near catch basins that empty into wetlands, must include sedimentation and erosion control devices to prevent sediment from the site from being transported into our wetland resource areas. When erosion and sedimentation control devices are not properly used, the runoff from a construction site can carry with it contaminants. Sediment is often a primary reason for surface water quality issues. Sediment is recognized as a nonpoint source pollutant and preventing sediment from reaching wetland resource areas is critical. Check dams with rip rap or sediment barriers are two methods used frequently to address sedimentation. The Town of Pepperell follows best management practices by sweeping streets and cleaning catch basins as part of their annual maintenance responsibilities. This helps to reduce the amount of the sedimentation that collects along our roadways in Pepperell from reaching our water resource areas. Bottom-feeding aquatic wildlife species are negatively impacted especially if sediment is contaminated.

A newly-revised Forestry Best Management Practices Manual was published in 2013, which not only brings awareness of the spread of exotic-invasive plants and insects but advises on the use of new sediment-control structures to prevent erosion during forest cutting projects. Forestry cutting projects use heavy equipment that can disturb soils and result in overland flow that can carry sediment. The intent of these sediment-control structures is to reduce the overland speed and volume of water from reaching wetland resource areas.

Sediment from runoff of agricultural fields can severely impact wetlands. Agriculture fields near wetland resource areas are often tilled and fertilized and these open fields, especially fields along riverfront corridors that are prone to flooding, deposit significant amounts of sediment into surrounding wetlands. By working with farmers that insure best management practices are followed, some of the contaminated sediment that is deposited into our wetlands can be eliminated. Suggesting that a buffer be maintained between agriculture fields and riverfront areas is critical but not always possible when farmers who have been farming for centuries are not willing to change their methods of farming. Livestock grazing in close proximity to wetlands can destroy stream banks and vegetation which can increase the risk of unfiltered runoff. This sediment often contains manure.

7. Ground and surface water pollution, including both point and Non-Point Source Pollution

The process of construction and continuing development and urbanization of the town of Pepperell can have an impact on water quality throughout the community. Contamination of private wells can occur along major roadways from road treatments. This often results in the Commonwealth of Massachusetts' involvement that includes drilling a new well for the homeowner. To prevent pollution, the Highway Department has had in place, for years, a program of regular maintenance that includes annual cleaning of catch basin sumps as well as annual street sweeping. These preventive measures help reduce the pollution loads to Pepperell waterways. An example of the results of improper maintenance occurred at "Shattuck Estates" where the developer had not properly maintained the drainage systems on these three roads. Before accepting the roads in 2001, the Town observed that accumulated silt had filled drainage outfalls. This allowed pollutants to enter the adjacent wetlands and required a significant cleanup.

Our rivers and streams are impacted by stormwater runoff when it is discharged, without treatment, to our municipal separate storm sewer systems (MS4s). The impacts of stormwater runoff are the leading cause of water quality impairments in the Commonwealth. While many communities in Massachusetts have been required to comply with the 2003 National Pollutant Discharge Elimination System (NPDES) Permit, Pepperell had been operating under a waiver. Pepperell is now required to file a Notice of Intent (NOI) for coverage under the April 2016 NPDES Phase II MS4 Permit, for the discharge of point source discharges. Compliance with the permit includes public education and outreach, illicit discharge detection and elimination, pollution prevention and good housekeeping practices, and construction site Stormwater best management practices.

8. New development

Since 1997, the Town Engineer has required subdivision preliminary plans to comply with the requirements of the Department of Environmental Protection's (DEP) Stormwater Management Policies, which emphasize both the removal of suspended solids and systems that recharge groundwater. In WRPOD areas, additional water quality structures are required to be included in the drainage systems. These multi-compartment structures serve not only to reduce suspended solids, but also prevent oils and grease that accumulate on paved surfaces from entering the groundwater. These structures have been installed at Cranberry Woods, Walgreens Pharmacy, and Primrose Park, and will be required at Hampshire Estates and Reedy Meadow Subdivisions, all in WRPOD Zones. Additional structures have been installed where it is deemed necessary to prevent clogging of infiltration systems.

A plan for the use of salt in sensitive areas has not been formally adopted, but such a policy is in place. The Highway Department consciously minimizes the use of salt near the Bemis and Jersey well sites using only sand when winter conditions allow, and a light salt/sand mix when needed. The use of magnesium chloride, which is known by the brand name Ice-Be-Gone, has shown to be "environmentally friendly" and also reduces the use of salt. The effect of the use of winter sand is minimized by the annual street

sweeping in early Spring. The need to dump removed snow has also been lessened with the use of a snow blower.

The pending upgrade and expansion of the wastewater treatment plant from 705,000 GPD to 1,100,000 GPD will allow more properties within the Sewer District to connect to the sewer system thereby reducing the impact on waterways from poorly designed or maintained septic systems.

Proposed Composting Facility Adjacent to the Pepperell Airport - A composting facility had been proposed for an area adjacent to the Pepperell Airport near the Nashua River. The proposed facility had been designed to compost organic waste material in compliance with the Massachusetts Department of Environmental Protection Bureau of Waste Prevention. Local permitting for the project was in effect until February 2016, at which time the Planning Board denied extending the permit.

#### 9. Impaired Water Bodies

The Federal Clean Water Act requires the State to evaluate the quality of all surface waterbodies. Water bodies classified as Category 5, are the most serious. The 2012 waterbody report for the Nissitissit River lists the section of the Nissitissit River from the New Hampshire state line to the confluence of the Nashua River in Pepperell as impaired for lack of coldwater fish assemblage. While there are no reasons provided in the report for these findings, many agree that removing the Turner Dam on the Nissitissit River will improve coldwater fish assemblage on the River. The impoundment of the dam has creates warmer water temperatures and sediment is trapped behind the dam.

#### 10. Environmental Equity

Pepperell's Community Center, located near the center of town, includes Pepperell's Town Field. The Town Field includes a bandstand, playing fields, and a playground. Activities such as the Farmer's Market (held during Summer and Fall), carnivals, an Easter egg hunt, a car show, a Fall Festival, and a variety of other community organizations use this centrally-located venue for many community events. The Community Center is a meeting location for local scout troops and nonprofits as well as the many classes offered by the Recreation Commission. Additional playing fields are located at the elementary and middle schools, just outside the center of town, with the exception of Bartelson Fields, which is located on the outskirts of town near the abutting town of Groton. Protected open spaces are scattered throughout the town, especially in areas near municipal wellheads to protect aquifers or along the two major rivers in town, the Nashua and Nissitissit Rivers. Aquifer protection is always the top priority for protecting open spaces but wildlife habitat, specifically protecting corridors for wildlife, which often provides trail opportunities for people, is critical. Protecting our coldwater fish resources and land abutting both the Nashua and Nissitissit Rivers is strongly supported at Town Meeting. While there are no Environmental Justice populations identified in Pepperell, the proximity of protected open spaces and recreational facilities to most neighborhoods, provides opportunities for many residents to enjoy open spaces within walking distance to where they live.

11. Invasive Species

The Town's most visible occurrence of invasive species in the 90 plus acres of water chestnuts on the Nashua River. The expansive coverage of these plants on the surface of the river has become an impedance for boaters, including those in kayaks and canoes. Yearly "pulls" by volunteers organized by the Nashua River Watershed Association have kept the invasives from spreading in some of the inlets and oxbows. A regional aquatic invasives committee has formed under the direction of the Nashua River Watershed Association with representatives from Pepperell, Groton, and Nashua, NH. With funding provided by Pepperell Hydro, an Invasives Species Management Plan is being created to address not only the water chestnuts but the other aquatic invasives present in the river. In 2008 and 2009, a \$300,000 grant, which was received by the Town of Pepperell and managed by the Nashua River Watershed Association, was used to harvest the water chestnuts. The 60 plus acres of water chestnuts at that time have now grown to over 90 acres. Representatives from several organizations viewed the river recently by boat and discussions involving grants and even consideration for requesting a legislative earmark were discussed.

Pepperell has no record to date of the invasive Asian long-horned beetle and Emerald ash borer but the hemlock woolly adelgid has been found in our forests and has killed some trees along Heald Pond. Invasive insects are always a threat as they often hitchhike on birds or can be found in firewood that people carelessly transport.

## **5. Inventory of Lands of Conservation and Recreation Interest**

The following listing of lands of conservation and recreation interest in Pepperell includes several categories of ownership and levels of protection. Some parcels are under the ownership of the Town and managed by the Pepperell Conservation Commission or the Pepperell Water Division. These lands are protected in perpetuity for conservation or water protection values but it is important to note that some municipally-owned lands are not protected and could be sold in the future and/or developed for other uses.

Lands owned and managed by private, non-profit land trusts such as the Nissitissit River Land Trust (NRLT) and Nashoba Conservation Trust (NCT) are protected in perpetuity if they include a conservation restriction. In addition, lands owned by the Commonwealth of Massachusetts, under management by either the Division of Fisheries & Wildlife (DFW) or the Department of Conservation and Recreation (DCR), are protected in perpetuity. Parcels identified under "Conservation Restrictions" are protected from development in perpetuity. Map 10, Open Space Ownership Categories, provides a clear snapshot of Pepperell's protected open spaces and ownership of each parcel. Table 5.A identifies ownership, management, and public access status for each protected parcel.

Pepperell's Open Space Inventory Map 11 adds Chapter 61 properties and highlights these large open, unprotected parcels and their proximity to protected land.



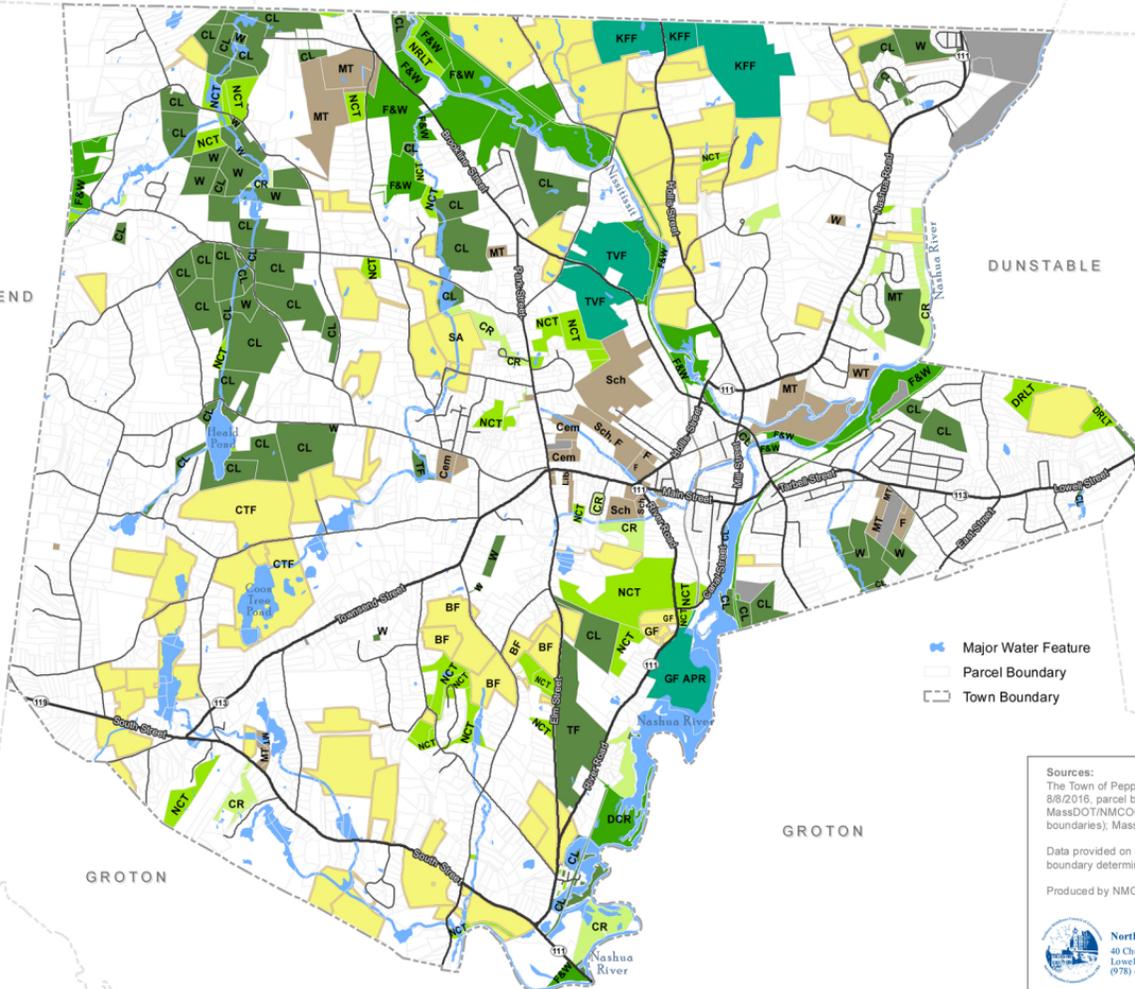
# Pepperell Open Space Inventory

TOWNSEND

DUNSTABLE

GROTON

GROTON



## Open Space Lands by Ownership

- Town Land, Permanently Protected
- CL - Conservation Commission Land
- TF - Town Forest
- W - Water Department
- Town Land, Unprotected
- Cem - Cemetery
- F - Field (recreation)
- Lib - Library
- MT - Miscellaneous Town Uses
- Sch - School
- WT - Water Treatment Plant
- State Land, Permanently Protected
- DCR - Department of Conservation & Recreation
- F&W - Division of Fisheries and Wildlife
- Land Trust, Permanently Protected
- DRLT - Dunstable Rural Land Trust
- NCT - Nashoba Conservation Trust
- NRLT - Nissitissit River Land Trust

## Private Land - Permanently Protected

- Agricultural Preservation Restriction (APR)
- GF APR - Gardner Farm APR
- KFF - Kimball Fruit Farm APR
- TVF - Twin Valley Farm APR
- Conservation Restriction (CR)

## Private Land - Temporary Protection or Unprotected

- Land Under Chapter 61, 61A, or 61B
- Other Unprotected Private Land
- BF - Blood Farm
- GF - Gardner Farm (unprotected parcels)
- CTF - Coon Tree Farm
- SA - Sartelle

- Major Water Feature
- Parcel Boundary
- Town Boundary

### Sources:

The Town of Pepperell (open space inventory 8/8/2016, parcel boundaries 2015);  
MassDOT/NMCOG (2013 roads); MassGIS (town boundaries); MassDEP (2009 hydrology)

Data provided on this map is not sufficient for either boundary determination or regulatory interpretation.

Produced by NMCOG 11/4/2016



Northern Middlesex Council of Governments  
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Lowell, Massachusetts 01852-2686  
(978) 454-8021 nmco.org



0 2,000 Feet

Many of these properties are of interest for future land protection consideration. Table 5.B is a list of each protected parcel and includes ownership, manager responsible for each property, condition, whether the property has recreation potential, the degree of protection, and other details about each parcels. Table 5.C includes a list of unprotected parcels while Table 5.D includes ownership data and other details for all Chapter 61 properties.

Privately owned land is not considered protected unless it is covered by a conservation restriction. Some privately owned land may have temporary protection under Massachusetts Chapter 61 for the period of time the land is kept in forestry, agricultural use, or recreational use. They are of interest as open land, but they are eminently developable.

There are over 2,800 acres of land protected in Pepperell. Since 2005, a total of 47 parcels of over 775 acres have been protected. Several larger properties including Pepperell Springs and Keyes Farm are now permanently protected. The DFW has added to their inventory by purchasing property from Patenaude on Hollis Street, Babin on Hollis Street, Darling on Cranberry Street, Levi on Wheeler Street, and Griffis on Prescott Street. In addition, the Nashoba Conservation Trust purchased 16.11 acres that is contiguous to the Town Forest and Keyes Farm. The town received a generous donation by Richard Parker of 19.8 acres between Keyes and Parker Conservation Areas and other protected areas in 2010.



**TABLE 5.A Summary of Protected Land**

<b>Owner</b>	<b>Acreage</b>
Town of Pepperell Conservation Commission	965.362
Town of Pepperell Water Division	205.750
Town of Pepperell Board of Selectmen	68.297
Town of Pepperell Town Forest Committee	92.1
Massachusetts Division of Fisheries and Wildlife	477.354
Massachusetts Department of Conservation and Recreation	63.547
Nashoba Conservation Trust, Inc.	402.952
Dunstable Rural Land Trust	31.990
Nissitissit River Land Trust	21.0
Agriculture Preservation Restrictions	381.018
Private	167.236
<b>TOTAL ACRES OF PROTECTED LAND</b>	<b>2,876.606</b>

**Table 5.B Pepperell Open Space Inventory - Protected Parcels**

Map-Block-Lot	Site Name	Owner	Manager	Acres	Zoning	Current Use	Public Access	Condition	ADA Access	Protection Type	Recreation Potential	Grant Source
2-8-0	Bemis Road Well	Pepperell Town Of	PCC	19.900	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	Self-Help # 4
2-9-0, 2-10-0	Gulf Brook - Stewart Brook (Day Woods)	NCT	NCT	15.000	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes		No	Land Trust	Passive	
2-16-0	Stewart Brook	Pepperell Town Of	PCC	13.900	RUR	Wildlife habitat, recreation, wetlands, vernalpool	Yes	Good	No	Article 97	Passive	Self-Help #11
2-19-0	Gulf Brook - Stewart Brook	NCT	NCT	2.800	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes		No	Land Trust	Passive	
2-20-0	Mention's Pond	Pepperell Town Of	Water	1.600	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	ALA
2-21-0	Gulf Brook - Stewart Brook	NCT	NCT	11.900	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes		No	Land Trust	Passive	
2-22-0	Stewart Brook	Pepperell Town Of	PCC	28.900	RUR	Wildlife habitat, recreation, wetlands, WRPOD, vernalpool	Yes	Good	No	Article 97	Passive	Self-Help #11
3-1-0	Bemis Road Well	Pepperell Town Of	PCC	11.100	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	
3-2-0	Bemis Road Well	Pepperell Town Of	Water	3.000	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Limited	Good	No	Article 97	None	
3-3-0, 3-27-0	Bemis Road Well	Pepperell Town Of	PCC	41.200	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	
3-4-0	Bemis Road Sand Pit	Pepperell Town Of	PCC	30.920	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	Self-Help #5
3-6-0	Nissitissit River Land Trust	NRLT	NRLT	4.200	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes		No	Land Trust	Passive	
3-7-0	Nissitissit River Land Trust	NRLT	NRLT	1.100	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes		No	Land Trust	Passive	
3-8-0	Burnham Lot	NCT	NCT	11.000	RUR	Wildlife habitat, recreation	Yes		No	Land Trust	Passive	
3-13-0	Nissitissit River	Pepperell Town Of	PCC	11.700	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	Purchase
3-14-0	Nissitissit River Land Trust	NRLT	NRLT	4.400	RUR	Wildlife habitat, recreation, wetlands	Yes		No	Land Trust	Passive	

**Table 5.B Pepperell Open Space Inventory - Protected Parcels**

Map-Block-Lot	Site Name	Owner	Manager	Acres	Zoning	Current Use	Public Access	Condition	ADA Access	Protection Type	Recreation Potential	Grant Source
3-15-0	DF & W	MA	DF & W	15.500	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes		No	Article 97	Passive	
3-20-0	DF & W	MA	DF & W	52.200	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes		No	Article 97	Passive	
3-24-0	Bemis Road Sand Pit	Pepperell Town Of	PCC	5.300	RUR	Wildlife habitat, recreation, wetlands	Yes	Good	No	Article 97	Passive	Self-Help #5 1977
3-28-0	Gulf Brook - Stewart Brook (Day Woods)	NCT	NCT	17.900	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes		No	Land Trust	Passive	
3-39-0	DF & W	MA	DF & W	7.100	RUR	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	
3-42-0	Mention's Pond	Pepperell Town Of	Water	1.880	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	ALA
4-1-0	DF & W	MA	DF & W	22.600	RUR	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	
4-25-0	DF & W	MA	DF & W	12.300	RUR	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	
4-33-0	Nissitissit River Land Trust	NRLT	NRLT	11.300	RUR	Wildlife habitat, recreation, wetlands	Yes		No	Land Trust	Passive	
5-1-0	Kimball Fruit Farm	Hill Carl B	APR	50.597	RUR	Agriculture - APR	No		No	Article 97	None	
5-2-0	Kimball Fruit Farm	Hills Carl B	APR	20.797	RCR	Agriculture - APR	No		No	Article 97	None	
5-11-0	Kimball Fruit Farm	Hills Carl B	APR	102.500	RCR	Agriculture - APR	No		No	Article 97	None	
6-4-0	Shattuck Estates Donation	Pepperell Town Of	PCC	19.350	RCR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Fair	No	Article 97	Open Space	Gift 2001 Deed 33043-592 for 5 parcels
6-11-57	Emerson Village	Pepperell Town Of	Water	27.470	RCR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	
6-37-0	Shattuck Estates Donation	Pepperell Town Of	PCC	0.846	RCR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Fair	No	Article 97	Open Space	Gift
6-38-0	Shattuck Estates Donation	Pepperell Town Of	PCC	0.672	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Fair	No	Article 97	Open Space	Gift
6-60-0	Shattuck Estates Donation	Pepperell Town Of	PCC	6.810	RCR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Fair	No	Article 97	Open Space	Gift

**Table 5.B Pepperell Open Space Inventory - Protected Parcels**

Map-Block-Lot	Site Name	Owner	Manager	Acres	Zoning	Current Use	Public Access	Condition	ADA Access	Protection Type	Recreation Potential	Grant Source
7-1-1	South	MA	DF & W	14.340	RUR	Wildlife habitat, recreation, wetlands, vernal pool	Yes		No	Article 97	Passive	
7-1-2	South	MA	DF & W	6.391	RUR	Wildlife habitat, recreation, wetlands, vernal pool	Yes		No	Article 97	Passive	
7-5-1	Levi Backland	MA	DF & W	13.380	RUR	Wildlife habitat, recreation, wetlands, vernal pool	Yes		No	Article 97	Passive	
7-9-A	Cranberry St.	(Private)	(Private)	2.03	RUR		Yes		No	CR - PCC	None	
7-11-0	Cranberry Woods	Pepperell Town Of	PCC	0.997	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	Gift, DeCarolis
7-12-0	Gulf Brook/Steward Brook Watershed	Pepperell Town Of	Water	10.300	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	ALA
7-13-0	Gulf Brook/Steward Brook Watershed	Pepperell Town Of	Water	15.400	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	ALA
7-14-0	Gulf Brook	Pepperell Town Of	PCC	6.300	RUR	Wildlife habitat, recreation, WRPOD	Yes	Good	No	Article 97	Passive	Self-Help #7
7-25-0	Levi Lot	NCT	NCT	3.500	RUR	Wildlife habitat, wetlands, recreation	Yes		No	Land Trust	Passive	
7-33-0	Pepperell Springs	Pepperell Town Of	PCC	14.600	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	Self-Help #17
7-34-0	Pepperell Springs	Pepperell Town Of	PCC	15.200	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	Self-Help #17
7-43-0	Darling	MA	DF & W	0.880	RUR	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	
7-63-0	Cranberry Woods	Pepperell Town Of	PCC	4.760	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Fair	No	Article 97	Passive	Gift, DeCarolis
8-1-0	Mention's Pond	Pepperell Town Of	Water	23.400	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Fair	No	Article 97	Passive	ALA
8-2-0	Babin/Abele	(Private)	(Private)	8	RUR		Yes		No	Article 97	None	

**Table 5.B Pepperell Open Space Inventory - Protected Parcels**

Map-Block-Lot	Site Name	Owner	Manager	Acres	Zoning	Current Use	Public Access	Condition	ADA Access	Protection Type	Recreation Potential	Grant Source
8-2-A	Homoleski	Pepperell Town Of	Selectmen (Ag)	11.797	RUR	Agriculture	No	Good	No	Article 97	None	
8-2-F	Gulf Brook/Steward Brook Watershed	Pepperell Town Of	Water	20.000	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	ALA
8-10-0	DF & W	MA	DF & W	28.750	RUR	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	
8-11-0	Burnham Lot	NCT	NCT	14.500	RUR	Wildlife habitat, wetlands, recreation	Yes		No	Land Trust	Passive	
8-18-0	Gulf Brook area	Pepperell Town Of	Water	19.490	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	
8-20-0	Gulf Brook	Pepperell Town Of	PCC	43.900	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	Self-Help #7
8-40-0	Merrill Lot	NCT	NCT	7.200	TNR	Wildlife habitat, wetlands, recreation	Yes		No	Land Trust	Passive	
8-45-0	Pepperell Springs	Pepperell Town Of	PCC	31.300	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	Self-Help #17
8-46-0	Pepperell Springs	Pepperell Town Of	PCC	4.100	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	Self-Help #17
8-47-0	Pepperell Springs	Pepperell Town Of	PCC	26.900	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	Self-Help #17
8-48-0	Pepperell Springs	Pepperell Town Of	PCC	7.600	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	Self-Help #17
8-91-0	Babin/Abele	(Private)	(Private)	See 8-2-0	RUR		Yes		No	CR - PCC	None	
8-92-0	Babin/Abele	(Private)	(Private)	See 8-2-0	RUR		Yes		No	CR - PCC	None	

**Table 5.B Pepperell Open Space Inventory - Protected Parcels**

Map-Block-Lot	Site Name	Owner	Manager	Acres	Zoning	Current Use	Public Access	Condition	ADA Access	Protection Type	Recreation Potential	Grant Source
9-7-0, 4-5-0, 4-6-0, 4-14-0, 4-15-0, 4-16-0, 4-23-0, 4-24-0	DF & W	MA	DF & W	175.672	RUR	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	
9-48-0	Twin Valley Farm	(Private)	APR	58.567	TNR	Agriculture - APR	No		No	Article 97	None	
9-52-0	Sucker Brook	Pepperell Town Of	PCC	4.430	RUR	Wildlife habitat, recreation, wetlands	Yes	Good	No	Article 97	Passive	Gift, Eaton
9-53-0	Eaton Lot	NCT	NCT	3.000	RUR	Wildlife habitat, wetlands, recreation, WRPOD	Yes		No	Land Trust	Passive	
9-82-0	Nissitissit Meadows	Pepperell Town Of	PCC	62.000	RUR	Wildlife habitat, recreation, wetlands, vernalpool	Yes	Good	No	Article 97	Passive	
9-119-0	Griffis	MA	DF & W	0.900	RUR	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	
9-120-0	Griffis	MA	DF & W	0.550	RUR	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	
9-131-0	Keyes Parker	Pepperell Town Of	PCC	19.800	RUR	Wildlife habitat, recreation, wetlands	Yes	Good	No	Article 97	Passive	Gift, Parker
9-152-1	Twohig	Pepperell Town Of	PCC	11.960	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	
9-153-0	Nissitissit Meadows	Pepperell Town Of	PCC	0.480	RUR	Wildlife habitat, recreation, wetlands	Yes	Good	No	Article 97	Passive	
9-154-0	Twin Valley Farm	Kaiser Jon E	APR	1.305	TNR	Agriculture - APR	No		No	Article 97	None	
9-163-0	Sucker Brook	Pepperell Town Of	PCC	50.200	RUR	Wildlife habitat, recreation, wetlands, vernalpool	Yes	Good	No	Article 97	Passive	Self-Help #10
9-179-0	Twin Valley Farm	Kaiser Jon E	APR	77.322	RUR	Agriculture - APR	No		No	Article 97	None	

**Table 5.B Pepperell Open Space Inventory - Protected Parcels**

Map-Block-Lot	Site Name	Owner	Manager	Acres	Zoning	Current Use	Public Access	Condition	ADA Access	Protection Type	Recreation Potential	Grant Source
10-16-26	Beaver Creek	(Private)	(Private)	10.4	RCR		No		No	CR - PCC	CR - PCC	
10-24-0	DF & W	MA	DF & W	12.000	RUR	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	
10-37-0	Holmes Donation	NCT	NCT	3.917	RUR	Wildlife habitat, recreation, wetlands, vernalpool	Yes		No	Land Trust	Open Space	
10-38-0	Holmes Donation	NCT	NCT	3.117	RUR	Wildlife habitat, recreation, wetlands, vernalpool	Yes		No	Land Trust	Open Space	
10-43-0	DF & W	MA	DF & W	1.840	RUR	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	
10-44-0	DF & W	MA	DF & W	5.700	RUR	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	
10-45-0	DF & W	MA	DF & W	12.300	RUR	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	
11-4-0	Shattuck	NCT	NCT	1.840	RUR	Wildlife habitat, recreation	Yes		No	Land Trust	Open Space	
11-15-0	Merrimac	Pepperell Town Of	Selectmen	49.4	RUR	Recreation	Yes	Good	No	CR	Passive & Active	
11-15-0	Merrimac	Pepperell Selectmen	NRWA	7.1	RUR		Yes	Good	No	CR	Passive & Active	
11-26-0	Merrimac	(Private)	(Private)	2.3	RUR		No		No	CR - PCC	CR - PCC	
11-27-0	Merrimac	(Private)	(Private)	7.1	RUR		No		No	CR - PCC	CR - PCC	
11-54-0	Nursery	(Private)	(Private)	3.2	RUR		No		No	CR - PCC	CR - PCC	
11-60-0	Nursery	(Private)	(Private)	3.8	RUR		No		No	CR - PCC	CR - PCC	
11-157-0	Merrimac	(Private)	(Private)	7.61	RUR	Recreation - foot and horseback	Yes		No	CR	Passive	
11-158-0	Merrimac	(Private)	(Private)	See 11-157-0	RUR	Recreation - foot and horseback	Yes		No	CR	Passive	

**Table 5.B Pepperell Open Space Inventory - Protected Parcels**

Map-Block-Lot	Site Name	Owner	Manager	Acres	Zoning	Current Use	Public Access	Condition	ADA Access	Protection Type	Recreation Potential	Grant Source
11-159-0	Merrimac	(Private)	(Private)	See 11-157-0	RUR	Recreation - foot and horseback	Yes		No	CR	Passive	
11-160-0	Merrimac	(Private)	(Private)	See 11-157-0	RUR	Recreation - foot and horseback	Yes		No	CR	Passive	
11-161-0	Merrimac	(Private)	(Private)	See 11-157-0	RUR	Recreation - foot and horseback	Yes		No	CR	Passive	
11-162-0	Merrimac	(Private)	(Private)	See 11-157-0	RUR	Recreation - foot and horseback	Yes		No	CR	Passive	
11-163-0	Merrimac	(Private)	(Private)	See 11-157-0	RUR	Recreation - foot and horseback	Yes		No	CR	Passive	
11-164-0	Merrimac	(Private)	(Private)	See 11-157-0	RUR	Recreation - foot and horseback	Yes		No	CR	Unknown	
12-10-0	Pepperell Springs	Pepperell Town Of	PCC	30.800	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	Self-Help #17
12-24-0	Heald Pond	Pepperell Town Of	PCC	8.297	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	
12-25-0	Heald Pond	Pepperell Town Of	PCC	8.300	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	Self-Help #6
12-31-0	Gulf Brook - Stewart Brook	NCT	NCT	7.500	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes		No	Land Trust	Passive	
12-36-0	Heald Pond	Pepperell Town Of	PCC	26.320	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	Self-Help #6
13-1-0	Pepperell Springs	Pepperell Town Of	PCC	6.300	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	Self-Help #17
13-2-0	Pepperell Springs	Pepperell Town Of	Water	10.700	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Limited	Good	No	CR - NCT	Passive	Self-Help #17
13-3-0	Pepperell Springs	Pepperell Town Of	PCC	43.700	RUR	Wildlife habitat, recreation, wetlands, vernalpool, WRPOD	Yes	Good	No	Article 97	Passive	Self-Help #17

**Table 5.B Pepperell Open Space Inventory - Protected Parcels**

Map-Block-Lot	Site Name	Owner	Manager	Acres	Zoning	Current Use	Public Access	Condition	ADA Access	Protection Type	Recreation Potential	Grant Source
13-12-0	Pepperell Springs	Pepperell Town Of	PCC	10.600	RUR	Wildlife habitat, recreation, wetlands, vernalpool	Yes	Good	No	Article 97	Passive	Self-Help #17
13-17-0	Pepperell Springs	Pepperell Town Of	PCC	63.700	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	Self-Help #17
13-106-1	Bisson	NCT	NCT	0.090	RUR	Wildlife habitat, recreation, WRPOD	Yes		No	Land Trust	Passive	
14-23-0	Countryside	(Private)	(Private)	18.22	TNR		No		No	CR - PCC	None	
14-24-0	Countryside	(Private)	(Private)	3.05	TNR		No		No	CR - PCC	None	
14-25-0	Countryside	(Private)	(Private)	0.63	TNR		No		No	CR - PCC	None	
14-99-0	Egan Lot	NCT	NCT	11.550	TNR	Wildlife habitat, recreation	No		No	Land Trust	Passive	
14-106-0	Seminatore Lot	NCT	NCT	18.800	TNR	Wildlife habitat, recreation	Yes		No	Land Trust	Passive	
14-124-0	Village Rd.	NCT	NCT	22.030	TNR	Wildlife habitat, recreation	Yes		No	Land Trust	Passive	
14-130-33	Village Rd.	NCT	NCT	2.160	TNR	Wildlife habitat, recreation	Yes		No	Land Trust	Passive	
14-300-3	Susan Smith Lot	NCT	NCT	4.320	TNR	Wildlife habitat, recreation	Yes		No	Land Trust	Passive	
15-33-0		MA	DF & W	6.391	RUR	Wildlife habitat, recreation, wetlands,	Yes		No	Article 97	Passive	n/a
15-33-12		MA	DF & W	1.150	RUR	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	n/a
15-33-13		MA	DF & W	0.890	RUR	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	n/a
15-40-0	Babin	MA	DF & W	17.290	RUR	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	

**Table 5.B Pepperell Open Space Inventory - Protected Parcels**

Map-Block-Lot	Site Name	Owner	Manager	Acres	Zoning	Current Use	Public Access	Condition	ADA Access	Protection Type	Recreation Potential	Grant Source
16-8-0	DF & W	MA	DF & W	44.200	SUR	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	
16-11-0	Rail Trail	MA	DCR	30.110	Multi	Recreation	Yes		No	Article 97	Passive	
16-12-0	Boy Scout Parcels	Pepperell Town Of	PCC	9.510	SUR	Wildlife habitat, recreation, wetlands	Yes	Good	No	Article 97	Passive	Purchase
16-14-0	Tully	Dunstable Rural Land Trust	Dunstable Rural Land Trust	21.590	SUR	Wildlife Habitat, recreation, wetlands	Yes		No	Land Trust	Passive	
16-15-0	Boy Scout Parcels	Pepperell Town Of	PCC	16.100	SUR	Wildlife habitat, recreation, wetlands	Yes	Good	No	Article 97	Passive	Purchase
16-113-0	Merrimac	(Private)	(Private)	10	RUR		No		No	CR - PCC	None	
17-2-0	Tully	Dunstable Rural Land Trust	Dunstable Rural Land Trust	10.400	SUR	Wildlife habitat, recreation, wetlands	Yes		No	Land Trust	Passive	
17-45-0	Unkety Brook Watershed	Pepperell Town Of	PCC	2.580	SUR	Wildlife habitat, recreation, wetlands	Yes	Good	No	Article 97	Passive	Gift, McKenna
17-119-0	Unkety Brook Watershed	Pepperell Town Of	PCC	4.300	SUR	Wildlife habitat, recreation, wetlands	Yes	Good	No	Article 97	Passive	Gift, Lambert
18-10-0	Heald Pond	Pepperell Town Of	PCC	10.260	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	Gift, Bryanos
19-1-0	Heald Pond	Pepperell Town Of	PCC	24.000	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	Self-Help #8
19-2-0	Heald Street Orchard	Pepperell Town Of	PCC	29.300	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	Self-Help #8
19-3-0	Heald Street Orchard	Pepperell Town Of	PCC	49.700	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	Self-Help #8
19-16-0	Town Forest	Pepperell Town Of	Town Forest Committee	9.300	TNR	Wildlife habitat, recreation, wetlands	Yes	Good	No	Article 97	Passive	
19-44-0	Storage Tanks	Pepperell Town Of	Water	1.000	RUR	Water Storage	No	Fair	No	Article 97	None	

**Table 5.B Pepperell Open Space Inventory - Protected Parcels**

Map-Block-Lot	Site Name	Owner	Manager	Acres	Zoning	Current Use	Public Access	Condition	ADA Access	Protection Type	Recreation Potential	Grant Source
20-81-0	Storage Tanks	Pepperell Town Of	Water	7.750	TNR	Water Storage	No	Fair	No	Article 97	None	
20-99-0	Storage Tanks	Pepperell Town Of	Water	1.300	TNR	Water Storage	No	Fair	No	Article 97	None	
20-128-0	Wooltop	Wooltop Conservation Trust	Pepperell Town Of	17.24	TNR	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	
20-146-0	Independence Rd. Trust	Independence Road Trust	Pepperell Town Of	4.016	TNR	Access restricted to residents on Independence Rd.	No		No	Article 97	None (residents only)	
21-77-0	Susan Smith Lot	NCT	NCT	4.000	TNR	Wildlife habitat, recreation	Yes		No	Land Trust	Passive	
22-34-0	DF & W	MA	DF & W	2.100	UR	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	
22-46-0	DF & W	MA	DF & W	1.000	UR	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	
24-45-0	Pepperell Pond; Nashua River	Pepperell Town Of	PCC	0.196	TNR	Wildlife habitat, recreation, wetlands	Yes	Fair	No	Article 97	Passive	Gift, Waterous
24-63-0	Keyes Farm	NCT	NCT	85.460	TNR	Wildlife habitat, recreation, wetlands	Yes		No	Land Trust	Passive	
24-75-0	Pepperell Pond; Nashua River	Pepperell Town Of	PCC	1.090	TNR	Wildlife habitat, recreation, wetlands	Yes	Fair	No	Article 97	Passive	Gift, James River
24-76-0	Pepperell Pond; Nashua River	Pepperell Town Of	PCC	0.044	TNR	Wildlife habitat, recreation, wetlands	Yes	Fair	No	Article 97	Passive	Gift, James River
24-78-0	Pepperell Pond; Nashua River	Pepperell Town Of	PCC	0.247	TNR	Wildlife habitat, recreation, wetlands	Yes	Fair	No	Article 97	Passive	Gift, James River
24-83-0	Keyes Farm	NCT	NCT	10.760	TNR	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	
25-54-0	DF & W	MA	DF & W	7.700	IND	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	
26-1-0	Land beside Covered Bridge	Pepperell Town Of	PCC	3.377	IND	Wildlife habitat, recreation, wetlands	Yes	Good	No	Article 97	Passive	Gift, James River
26-3-0	DF & W	MA	DF & W	3.600	UR	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	
26-208-0	Rail Trail	MA	DCR	2.200	Multi	Recreation	Yes		No	Article 97	Passive	
27-1-0	Rail Trail	MA	DCR	7.900	Multi	Recreation	Yes		No	Article 97	Passive	

**Table 5.B Pepperell Open Space Inventory - Protected Parcels**

Map-Block-Lot	Site Name	Owner	Manager	Acres	Zoning	Current Use	Public Access	Condition	ADA Access	Protection Type	Recreation Potential	Grant Source
31-14-A, 31-44-A	Jersey Street Well	Pepperell Town Of	Water	17.240	SUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Fair	No	Article 97	Passive	
31-23-0	Off Jersey	Pepperell Town Of	Water	44.220	SUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	
31-24-0	Lorden	Pepperell Town Of	PCC	2.000	SUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	
31-44-0	Lorden	Pepperell Town Of	PCC	0.250	SUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	
32-71-0	Foley Lot	NCT	NCT	1.680	RUR	Wildlife habitat, wetlands, recreation	Yes		No	Land Trust	Passive	
33-8-0	Storage Tanks	Pepperell Town Of	Water	1.000	TNR	Water Storage	Yes	Fair	No	Article 97	None	
Multiple: 34-22-0, 34-22-B	Keyes Farm	Pepperell Town Of	PCC	40.190	TNR	Wildlife habitat, recreation, wetlands	Yes	Good	No	Article 97	Passive	
34-31-0	Mount Lebanon	NCT	NCT	7.900	TNR	Wildlife habitat, recreation, wetlands	Yes		No	Land Trust	Passive	
34-34-0		(Private)	NCT		TNR	Recreation	Yes		No	Article 97	Passive	
34-35-1	Linkel	NCT	NCT	8.057	TNR	Wildlife habitat, recreation, wetlands	Yes		No	Land Trust	Passive	
34-44-1	Bon	NCT	NCT	3.850	TNR	Wildlife habitat, recreation	Yes		No	Land Trust	Passive	

**Table 5.B Pepperell Open Space Inventory - Protected Parcels**

Map-Block-Lot	Site Name	Owner	Manager	Acres	Zoning	Current Use	Public Access	Condition	ADA Access	Protection Type	Recreation Potential	Grant Source
34-49-0	Mount Lebanon	NCT	NCT	17.500	TNR	Wildlife habitat, recreation, wetlands, vernal pool	Yes		No	Land Trust	Passive	
34-50-B	Stromsted	NCT	NCT	1.310	TNR	Wildlife habitat, recreation	Yes		No	Land Trust	Passive	
34-59-0	Mount Lebanon	NCT	NCT	2.300	TNR	Wildlife habitat, recreation, wetlands	Yes		No	Land Trust	Passive	
34-68-0	Mount Lebanon	NCT	NCT	11.600	TNR	Wildlife habitat, recreation, wetlands	Yes		No	Land Trust	Passive	
34-351-0	Anderson Lot	NCT	NCT	7.900	TNR	Wildlife habitat, recreation	Yes		No	Land Trust	Passive	
34-352-0	Anderson Lot	NCT	NCT	5.600	TNR	Wildlife habitat, recreation	Yes		No	Land Trust	Passive	
35-1-0	Keyes	NCT	NCT	2.100	TNR	Wildlife habitat, recreation	Yes		No	Land Trust	Passive	
35-2-0	DF & W	MA	DF & W	0.530	SUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes		No	Article 97	Passive	
35-4-0	Nashua River shoreline	Pepperell Town Of	PCC	12.900	SUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Fair	No	Article 97	Passive	Gift, James River
35-5-0	Anderson	Pepperell Town Of	PCC	18.000	SUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Good	No	Article 97	Passive	
35-12-0	Keyes Farm	NCT	NCT	3.960	TNR	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	
35-14-0	Keyes Farm Ext.	NCT	NCT	16.117	TNR	Wildlife habitat, recreation, wetlands	Yes		No	Land Trust	Passive	
35-20-0	Gardner Farm	Gardner Marlene A	APR	69.930	TNR	Agriculture - APR	No		No	Article 97	None	
35-31-0	Nashua River shoreline	Pepperell Town Of	PCC		SUR	Wildlife habitat, recreation, wetlands	Yes	Fair	No	Article 97	Passive	Gift, James River
36-15-0	Friends' Land	NCT	NCT	30.080	RUR	Wildlife habitat, recreation, wetlands, vernalpool	Yes		No	Land Trust	Passive	
37-6-0	Mount Lebanon	NCT	NCT	7.355	TNR	Wildlife habitat, recreation, wetlands	Yes		No	Land Trust	Passive	

**Table 5.B Pepperell Open Space Inventory - Protected Parcels**

Map-Block-Lot	Site Name	Owner	Manager	Acres	Zoning	Current Use	Public Access	Condition	ADA Access	Protection Type	Recreation Potential	Grant Source
37-6-2	Stromsted	NCT	NCT	5.082	TNR	Wildlife habitat, recreation, wetlands, vernalpool	Yes		No	Land Trust	Passive	
37-63-0	Ferrero	(Private)	(Private)	15.2	RUR		No		No	Article 97	None	
37-93-0	Ferrero	(Private)	(Private)	2.2	RUR		No		No	Article 97	None	
38-8-0	Town Forest	Pepperell Town Of	Town Forest Committee	82.800	TNR	Wildlife habitat, recreation, wetlands	Yes	Good	No	Article 97	Passive	
Multiple: 38-33-0, 38-34-0	Pepperell Pond; Nashua River	Pepperell Town Of	PCC	30.800	TNR	Wildlife habitat, recreation, wetlands	Yes	Fair	No	Article 97	Passive	Tax taking, Coleman
38-68-0	VCR (Visniewski)	NCT	NCT	0.920	TNR	Wildlife habitat, recreation, wetlands	Yes		No	Land Trust	Passive	
40-8-0	Parker Lot	NCT	NCT	0.253	TNR	Wildlife habitat, recreation	Yes		No	Land Trust	Passive	
40-9-0	Pepperell Pond; Nashua River	Pepperell Town Of	PCC	0.086	TNR	Wildlife habitat, recreation, wetlands	Yes	Fair	No	Article 97	Passive	Gift, Faris
40-20-0	Kemp Donation	NCT	NCT	0.551	TNR	Wildlife habitat, recreation	Yes		No	Land Trust	Passive	
40-29-0	9 Harvard Lane	Pepperell Town Of	PCC	0.087	TNR	Wildlife habitat, recreation, wetlands	Yes	Fair	No	Article 97	Passive	
40-30-0	Kemp Donation	NCT	NCT	0.196	TNR	Wildlife habitat, recreation	Yes		No	Land Trust	Passive	
40-35-0	Pepperell Pond; Nashua River	Pepperell Town Of	PCC	0.367	TNR	Wildlife habitat, recreation, wetlands	Yes	Fair	No	Article 97	Passive	Tax taking, Coleman
40-37-0	Pepperell Pond; Nashua River	Pepperell Town Of	PCC	0.364	TNR	Wildlife habitat, recreation, wetlands	Yes	Fair	No	Article 97	Passive	Purchase, Amari
40-38-0	Yapp	(Private)	(Private)	33.800	TNR	Agriculture	Yes		No	CR - NCT	Passive	
40-39-0	Pepperell Pond; Nashua River	Pepperell Town Of	PCC	4.100	TNR	Wildlife habitat, recreation, wetlands	Yes	Fair	No	Article 97	Passive	Tax taking, Coleman
40-44-0	Pepperell Pond; Nashua River	Pepperell Town Of	PCC	0.783	TNR	Wildlife habitat, recreation, wetlands	Yes	Fair	No	Article 97	Passive	Gift, James River

**Table 5.B Pepperell Open Space Inventory - Protected Parcels**

Map-Block-Lot	Site Name	Owner	Manager	Acres	Zoning	Current Use	Public Access	Condition	ADA Access	Protection Type	Recreation Potential	Grant Source
40-45-0	Pepperell Pond; Nashua River	Pepperell Town Of	PCC	0.624	TNR	Wildlife habitat, recreation, wetlands	Yes	Fair	No	Article 97	Passive	Gift, James River
40-46-0	DF & W	MA	DF & W	10.100	TNR	Wildlife habitat, recreation, wetlands	Yes		No	Article 97	Passive	
40-54-0	Hopkins Donation	NCT	NCT	4.297	TNR	Wildlife habitat, recreation, wetlands	Yes		No	Land Trust	Passive	
40-57-0	B & M R.O.W.	Pepperell Town Of	PCC	7.900	TNR	Wildlife habitat, recreation, wetlands	Yes	Good	No	Article 97	Passive	Self-Help #14
40-58-0	Old Rail Corridor	NCT	NCT	2.000	TNR	Wildlife habitat, recreation, wetlands	Yes		No	Land Trust	Passive	
41-1-0	Kemp Race Track CR	(Private)	PCC	1.000	TNR	Access	Limited to 15' access ROW		No	CR - PCC	Passive	

**Table 5.B Pepperell Open Space Inventory - Protected Parcels**

Map-Block-Lot	Site Name	Owner	Manager	Acres	Zoning	Current Use	Public Access	Condition	ADA Access	Protection Type	Recreation Potential	Grant Source
41-1-0	Kemp Race Track OSRD	Albert Patenaude	(Private)	18.34	TNR	Private	No	Unknown	No	CR	None	n/a
41-2-0	J. Harry Rich State Forest	MA	DCR	23.337	TNR	Wildlife habitat, recreation, wetlands, vernalpool	Yes		No	Article 97	Passive	
41-2-B	Walent	Pepperell Town Of	PCC	0.810	TNR	Wildlife habitat, recreation, wetlands	Yes	Good	No	Article 97	Passive	
41-4-0	Pepperell Pond; Nashua River	Pepperell Town Of	PCC	1.020	TNR	Wildlife habitat, recreation, wetlands	Yes	Fair	No	Article 97	Passive	Gift, Kemp & Self-Help #8
(Map 6 paper street)	Shattuck Estates Donation	Pepperell Town Of	PCC	0.235	RUR	Wildlife habitat, recreation, wetlands, WRPOD	Yes	Fair	No	Article 97	None	Gift

**Table 5.C Pepperell Open Space Inventory - Unprotected Parcels**

Map-Block-Lot	Site Name	Owner	Manager	Location	Current Use/Condition for Those Properties Used for Recreation	Acres	Zoning	Public Access	Recreation Potential
3-21-0	Landfill	Pepperell Town Of	BOH	Off Boynton Street	Transfer station	4.4	RUR	Yes	No
3-22-0	Landfill	Pepperell Town Of	BOH	Off Boynton Street	Transfer station	2.4	RUR	Yes	No
3-23-0	Cole Property	Pepperell Town Of	BOH	Corner of Boynton and Bem	Vacant	32	RUR	Yes	No
3-35-0	Landfill	Pepperell Town Of	BOH	65 Boynton Street	Transfer station	66.05	RUR	Yes	No
3-361-0		Pepperell Town Of	BOH	64 Boynton Street	Vacant	2.2	RUR	Yes	No
4-38-0		Pepperell Town Of	n/a	Off North St	Tax Title	0.1446	RCR	No	No
6-8-0		Pepperell Town Of	n/a	0 Nashua Rd	Tax Title	1.88	RCR	No	No
6-16-0	Tully	Tully	n/a	175 Nashua Rd.	Agriculture/Private	69.15	IND	No	No
6-16-1	Tully	Tully	n/a	3 Chapman St	Solar/Private	6.55	IND	No	No
6-79-0	Shattuck	Shattuck	n/a	165 Nashua Rd.	Airport	35.909	IND	No	No
6-102-0		Pepperell Town Of	n/a	42 Ridge Rd	Tax Title	0.8926	RCR	Yes	No
9-135-0	Miscellaneous Town Owned	Pepperell Town Of	Pepperell Town Of	90 Park Street	Vacant, Tax Title	5.117	TNR	No	No
11-23-0	Nissitissit Hill	Pepperell Town Of	Water	Off Nashua Road	Tax Title	2.700	RCR	No	No
13-97-0		Pepperell Town of	Sewer Div.	18 Sheffield Rd		0.121	TNR	No	No
14-159-0	Fire Station	Pepperell Town Of	Fire Dept.	38 Park Street	Fire Station	1.456	TNR	Yes	No
14-240-A	Miscellaneous Town Owned	Pepperell Town Of	Pepperell Town Of	Abuts Varnum Brook Middle	Athletic Field/Good Condition	0.253	TNR	Yes	Yes
14-241-0	Miscellaneous Town Owned	Pepperell Town Of	Pepperell Town Of	Abuts Varnum Brook Middle	Athletic Field/Good Condition	10.8	TNR	Yes	Yes
16-10-0	The Land Between the Rivers	Pepperell Town Of	Pepperell Town Of	Nashua Road and Groton St	Agriculture	2.8	IND	Yes	No
16-11-1		B&M Railroad	n/a	off June St		8	SUR	No	No
16-17-0	Wastewater Treatment Plant	Pepperell Town Of	Sewer Dept.	Off Nashua Road	Wastewater Treatment Plant	8.16	IND	No	No
17-59-0		Pepperell Town Of	n/a	163 Lowell Rd	Tax Title	0.2426	SUR	No	No
17-120-0		Pepperell Town of	Sewer Div.	4 Adam St		0.064	SUR	No	No

**Table 5.C Pepperell Open Space Inventory - Unprotected Parcels**

Map-Block-Lot	Site Name	Owner	Manager	Location	Current Use/Condition for Those Properties Used for Recreation	Acres	Zoning	Public Access	Recreation Potential
18-23-B		Pepperell Town Of	n/a	40 West St	Tax Title	0.85	RUR	No	No
20-26-0	Woodlawn Cemetery	Pepperell Town Of	DPW	40 - 42 Heald Street	Cemetery	4.3	TNR	Yes	No
20-27-0	Woodlawn Cemetery	Pepperell Town Of	DPW	Heald Street	Cemetery	10.3	TNR	Yes	No
20-48-0	Fitzpatrick School	Pepperell Town Of	NMRSD	Main Street	School	12.9	TNR	Yes	Yes
20-106-0	Dog Pound	Pepperell Town of	Dog Pound	0 Heald St		0.019	TNR	Yes	No
21-5-0	Pepperell Cemetery Assoc.	Pepperell Cemetery Association c/o Eric Smith	n/a	Park Street	Cemetery	4.3	TNR	Yes	No
Multiple: 21-16-0, 21-17-0	Walton Cemetery	Pepperell Town Of	DPW	Park Street	Cemetery	8.6	TNR	Yes	No
21-37-0	Monument	Pepperell Town of	n/a	0 Main		0.468	TNR	Yes	No
21-47-0	Town Hall	Pepperell Town Of	Selectmen	Main Street	Town Hall	0.477	TNR	Yes	No
21-48-0	Town Hall	Pepperell Town Of	Selectmen	Elm Street	Town Hall	1	TNR	Yes	No
21-51-0	Lawrence Library	Pepperell Town Of	Library	Main Street	Library	1.6	TNR	Yes	No
21-52-0	Lawrence Library	Pepperell Town Of	Library	Main Street	Library	4.5	TNR	Yes	Passive Recreation ADA Trail
21-75-0	Varnum Brook Elementary School	Pepperell Town Of	NMRSD	Hollis Street	School	28.9	TNR	Yes	Yes
21-75-A	Varnum Brook Middle School	Pepperell Town Of	NMRSD	Hollis Street	School	1.24	TNR	Yes	Yes
22-4-0	Nissitissit Middle School	Pepperell Town of	NMRSD	33 Chace Av		77.907	TNR	Yes	Yes
22-93-0	B & M R.O.W.	B&M Railroad	Guilford Transport.	Hollis Street to Brookline Street		1.5	TNR	No	Yes
22-94-0	B & M R.O.W.	B&M Railroad	Guilford Transport.	Tucker Street to Hollis Street		0.962	TNR	No	Yes
23-47-0	Town Field	Pepperell Town Of	DPW	4 Hollis Street	Athletic Field/Good Condition	9.01	TNR	Yes	Yes
23-49-0	Sis McGrath Community Ctr.	Pepperell Town of	n/a	1 Hollis St		1	TNR	Yes	Yes
23-147-0	Fitzpatrick School	Pepperell Town Of	NMRSD	Main Street	School	2.6	TNR	Yes	Yes

**Table 5.C Pepperell Open Space Inventory - Unprotected Parcels**

Map-Block-Lot	Site Name	Owner	Manager	Location	Current Use/Condition for Those Properties Used for Recreation	Acres	Zoning	Public Access	Recreation Potential
23-150-0	Fitzpatrick School	Pepperell Town Of	NMRSD	Main Street	School	3.4	TNR	Yes	Yes
23-157-0	Public Safety Complex	Pepperell Town Of	Police	Main Street; formerly Shatt	Police Station	0.935	COM	Yes	No
23-162-0	Kennedy Field	Pepperell Town Of	DPW	off River Road and Main Str	Athletic Field/Good Condition	0.239	URR	Yes	Yes
23-163-0	Kennedy Field	Pepperell Town Of	DPW	off River Road and Main Str	Athletic Field/Good Condition	2.2	URR	Yes	Yes
23-175-0	B & M R.O.W.	Tzitzenikos	Tzitzenikos	Main Street		0.744	URR	Yes	No
23-214-0	B & M R.O.W.	B&M Railroad	Guilford Transport.	Main Street to Mill Street		3.5	SUR	No	No
23-219-0	Comisky Field	Pepperell Town Of	DPW	Hollis Street	Athletic Field/Good Condition	3.06	TNR	Yes	Yes
23-220-0	Miscellaneous Town Owned	Pepperell Town Of	Pepperell Town Of	Tucker Street	Garage Site	0.868	URR	No	No
24-77-0	B & M R.O.W.	MASS Electric	MASS Electric	MASS Electric		4.3	TNR	No	No
25-22-1	Senior Center	Pepperell Town Of	Pepperell Town Of	37 Nashua Rd.	Senior Center	25.157	RCR	Yes	Yes
25-43-0	The Land Between the Rivers	Pepperell Town Of	Pepperell Town Of	Nashua Road and Groton St	MT	7	IND	Yes	Yes
25-44-0	Adamovich	Pepperell Town Of	Selectmen (Ag)	20 Groton	Agriculture	36.86	IND	Yes	Yes
25-46-0		Pepperell Town Of	n/a	31 Groton St	Tax Title	0.091	IND	No	No
26-209-0	Miscellaneous Town Owned	Pepperell Town Of	Pepperell Town Of	56 Groton Street	MT	0.26	COM	No	Yes
26-212-0	Civil Defense Bldg	Pepperell Town of	n/a	off Groton St		0.021	URR	No	No
29-179-0		Pepperell Town Of	n/a	53 Leighton St	Tax Title	0.3032	SUR	No	No
31-14-0	Bartelson Fields	Pepperell Town Of	DPW	9 Jersey Street	Athletic Field/Good Condition	6.57	SUR	Yes	Yes
31-15-0	St. Joseph's Cemetery	Church	n/a	Jersey Street	Cemetery	14.6	SUR	Yes	No
31-16-0	Fire Station	Pepperell Town Of	Fire Dept.	47 Lowell Road	Fire Station	1.8	SUR	Yes	No
31-17-0	Highway Department	Pepperell Town Of	Highway	Lowell Road	Garage	10.4	SUR	Limited	No

**Table 5.C Pepperell Open Space Inventory - Unprotected Parcels**

Map-Block-Lot	Site Name	Owner	Manager	Location	Current Use/Condition for Those Properties Used for Recreation	Acres	Zoning	Public Access	Recreation Potential
31-73-0	Bartelson Fields	Pepperell Town Of	DPW	Off Jersey Street	Athletic Field/Good Condition	1	SUR	Limited	Yes
32-20-0	North Middlesex Reg. High School	Pepperell Town Of	NMRSD	Rt. 119	School	0.243	RUR	Yes	Yes
33-33-0	D.A.R Prudence Wright Chapter	Prudence Wright NSDAR Chapter 430	DAR	Townsend Street		0.554	RUR	Yes	No
35-3-0	English	English, Gail	n/a	0 Groton Street		12	SUR	Yes	Yes
37-32-0	Town Hall	Pepperell Town of	Selectmen	1 Main St		0.156	TNR	Yes	No
37-73-0		Pepperell Town Of	n/a	137 South Rd	Tax Title	4.8266	RUR	No	No
37-74-0		Pepperell Town Of	n/a	139 South Rd	Tax Title	3.3266	RUR	No	No
40-3-0		Pepperell Town Of	n/a	168 River Rd	Tax Title	0.2772	TNR	No	No
40-4-0		Pepperell Town Of	n/a	9 Dartmouth Ln	Tax Title	0.1559	TNR	No	No
40-15-0		Pepperell Town Of	n/a	174 River Rd	Tax Title	0.1148	TNR	No	No

Map-Block-Lot	Owner	Acres	Zoning	Current Use	Public Access	Protection Type
2-11-10	Morris	12.02655	RUR	Private	No	Chap 61B - Recreation
4-7-0	McGovern	74.42655	RUR	Private	No	Chap 61A - Ag. & Chap 61B Rec.
4-10-0	Murphy	40.99655	RUR	Private	No	Chap 61A - Agriculture
4-11-0	Graves	13.19655	RUR	Private	No	Chap 61 - Forestry
4-20-0	Cryan	61.89655	RUR	Private	No	Chap 61 - Forestry
4-21-0	Graves	9.69655	RUR	Private	No	Chap 61 - Forestry
4-32-0	Wright	17.2	RUR	Private	No	Chap 61 - Forestry
5-1-0	Hills/Kimball	50.597	RUR	Private	Yes	Chap 61A - Agriculture/APR
5-2-0	Hills/Kimball	20.797	RUR	Private	Yes	Chap 61A - Agriculture/APR
5-9-0	Nichols	16.49655	RCR	Private	No	Chap 61A - Agriculture
5-10-0	Hauff	10.21655	RCR	Private	No	Chap 61A - Agriculture
5-11-0	Hills/Kimball	102.4	RUR	Private	Yes	Chap 61A - Agriculture/APR
5-12-0	Graves	15.27	RUR	Private	No	Chap 61A - Agriculture
5-12-1	Graves	1.8368	RUR	Private	No	Chap 61A - Agriculture
5-21-0	Graves	54.24655	RUR	Private	No	Chap 61A - Agriculture
5-22-0	Lavender	41.49655	RCR	Private	No	Chap 61A - Ag. & Chap 61B Rec.
5-25-0	Holmes	31.83655	RCR	Private	No	Chap 61A - Agriculture
6-3-0	Friend	23.05655	RCR	Private	No	Chap 61A - Agriculture
6-18-0	Shattuck	59.99655	RCR	Private	No	Chap 61B - Recreation
6-18-2	Shattuck	9.54	RCR	Private	No	Chap 61B - Recreation
8-14-0	Ganem	11.41655	RUR	Private	No	Chap 61A - Agriculture
8-16-0	Ganem	4.39655	RUR	Private	No	Chap 61A - Agriculture
8-73-0	Beattie	6.96655	RUR	Private	No	Chap 61A - Agriculture
9-48-0	Twin Valley	58.567	RUR	Private	No	Chap 61A - Agriculture/APR
9-127-0	West	21.79655	RUR	Private	No	Chap 61B - Recreation
9-144-0	West	7.49655	TNR	Private	No	Chap 61A - Agriculture

Map-Block-Lot	Owner	Acres	Zoning	Current Use	Public Access	Protection Type
9-152-0	Beattie	20.4565	TNR	Private	No	Chap 61A - Agriculture
9-154-0	Twin Valley	1.305	RUR	Private	No	Chap 61A - Agriculture
9-179-0	Twin Valley	77.322	RUR	Private	No	Chap 61A - Agriculture
10-1-0	Malouin	28.39655	RUR	Private	No	Chap 61A - Agriculture
10-2-0	Dejonge	17.79655	RCR	Private	No	Chap 61 - Forestry
10-3-0	Smith	5.67655	RCR	Private	No	Chap 61B - Recreation
10-3-10	Red Tail LLC	5.67655	RCR	Private	No	Chap 61B - Recreation
10-10-0	Malouin	18.19655	RUR	Private	No	Chap 61A - Agriculture
10-11-0	Malouin	14.99655	RUR	Private	No	Chap 61A - Agriculture
10-17-0	Solka	9.99655	RUR	Private	No	Chap 61A - Agriculture
10-19-0	Solka	10.99655	RUR	Private	No	Chap 61A - Agriculture
10-25-0	Malouin	4.49655	RUR	Private	No	Chap 61A - Agriculture
10-39-0	Holmes	3.47655	RCR	Private	No	Chap 61A - Agriculture
11-12-0	Hapgood-White	8.59655	RCR	Private	No	Chap 61A - Agriculture
12-114-0	Buxton	14.24655	RUR	Private	No	Chap 61B - Recreation
13-9-0	Sartelle	29.89655	TNR	Private	No	Chap 61 - Forestry
13-62-0	McIntire	35.01655	TNR	Private	No	Chap 61 - Forestry
13-112-0	Hague	19.65655	TNR	Private	No	Chap 61A - Agriculture
14-111-0	Sartelle	68.6	TNR	Private	No	Chap 61 - Forestry
14-113-0	Sartelle	2.99655	TNR	Private	No	Chap 61 - Forestry
14-136-0	Sartelle	10.29655	TNR	Private	No	Chap 61 - Forestry
15-24-0	Beede	9.73655	RCR	Private	No	Chap 61B - Recreation
15-73-0	Boettcher	22.99655	RUR	Private	No	Chap 61A - Agriculture
17-1-0	Sartelle	53.5	SUR	Private	No	Chap 61 - Forestry
18-16-0	Tolman	34.50655	RUR	Private	No	Chap 61 - Forestry & Chap 61A Ag.

Map-Block-Lot	Owner	Acres	Zoning	Current Use	Public Access	Protection Type
18-30-0	Tolman	20.7	RUR	Private	No	Chap 61 - Forestry
19-22-0	Russell	13.32955	RUR	Private	No	Chap 61A - Agriculture
19-24-0	Carroll	22.69655	RUR	Private	No	Chap 61 - Forestry
19-29-0	Duke	97.0531	RUR	Private	No	Chap 61A - Agriculture
19-63-0	Duke	23.93	RUR	Private	No	Chap 61 - Forestry
20-98-0	Oak Hill Farm N	17.59655	TNR	Private	No	Chap 61B - Recreation
27-50-0	Russell	14.39655	SUR	Private	No	Chap 61B - Recreation
32-11-0	Tolman	5.19655	RUR	Private	No	Chap 61 - Forestry
32-39-0	Delker	12.89655	RUR	Private	No	Chap 61 - Forestry
32-42-0	Tolman	15.89655	RUR	Private	No	Chap 61A - Agriculture
32-49-0	Ritchie	22.06655	RUR	Private	No	Chap 61A - Agriculture
32-50-0	Delker	30.87	RUR	Private	No	Chap 61 - Forestry
32-54-0	Delker	15.29655	RUR	Private	No	Chap 61 - Forestry & Chap 61A Ag.
33-4-0	Duke	6.63655	RUR	Private	No	Chap 61A - Agriculture
33-5-0	Ratta	18.41655	RUR	Private	No	Chap 61B - Recreation
33-6-0	Duke	123.15655	RUR	Private	No	Chap 61A - Agriculture
34-13-0	Blood	51.207	TNR	Private	No	Chap 61A - Agriculture
34-14-0	Blood	1.4	TNR	Private	No	Chap 61A - Agriculture
34-19-0	McGee	8.44655	TNR	Private	No	Chap 61A - Agriculture
34-22-A	McGee	9.48355	TNR	Private	No	Chap 61A - Agriculture
34-23-0	Blood	21.79655	TNR	Private	No	Chap 61A - Agriculture
34-24-0	Blood	12.49655	TNR	Private	No	Chap 61A - Agriculture
34-25-0	Blood	17.99655	TNR	Private	No	Chap 61A - Agriculture
34-32-0	Blood	31.917	TNR	Private	No	Chap 61A - Agriculture

Map-Block-Lot	Owner	Acres	Zoning	Current Use	Public Access	Protection Type
34-35-3	Quintal	1.85655	TNR	Private	No	Chap 61A - Agriculture
34-35-10	Quintal	1.05856	TNR	Private	No	Chap 61A - Agriculture
34-45-0	Blood	3.59655	TNR	Private	No	Chap 61A - Agriculture
35-13-0	Gardner	19.19655	TNR	Private	No	Chap 61A - Agriculture
35-14-A	Gardner	See 35-13-0		Private	No	Chap 61A - Agriculture
35-15-0	Gardner	2.49655	TNR	Private	No	Chap 61A - Agriculture
35-20-0	Gardner	69.93	TNR	Private	No	Chap 61A - Agriculture APR
36-18-0	McBee	6.48655	RUR	Private	No	Chap 61B - Recreation
36-25-0	McBee	26.58655	RUR	Private	No	Chap 61B - Recreation
37-3-0	Egan	22.17455	TNR	Private	No	Chap 61 - Forestry
37-8-0	Hayes	58.99655	TNR	Private	No	Chap 61 - Forestry
37-23-0	Hayes	30.59655	TNR	Private	No	Chap 61 - Forestry
37-76-0	McAvoy	7.49655	RUR	Private	No	Chap 61B - Recreation
38-23-0	Sartelle	4.99655	TNR	Private	No	Chap 61 - Forestry
38-24-0	Ratta	11.99655	TNR	Private	No	Chap 61A - Agriculture
38-31-0	Sartelle	29.89655	TNR	Private	No	Chap 61 - Forestry
38-32-0	Sartelle	8.09655	TNR	Private	No	Chap 61 - Forestry
38-60-0	Ofenstein	9.74355	TNR	Private	No	Chap 61A - Agriculture
39-6-0	Carr	28.26355	RUR	Private	No	Chap 61A - Agriculture
39-9-0	Hayes	39.36655	RUR	Private	No	Chap 61A - Agriculture
39-11-0	Hayes	4.19655	TNR	Private	No	Chap 61A - Agriculture
39-30-0	Carr	28.05655	RUR	Private	No	Chap 61A - Agriculture
40-49-0	Wilkins	34.39655	TNR	Private	No	Chap 61A - Agriculture

## **A. Private Parcels**

### **1. Chapter 61, 61A, and 61B**

Chapter 61, 61A, and 61B are tax-incentive programs to encourage property owners to keep their properties in forestry, agriculture, or open recreation by providing landowners with a reduction to their real estate taxes. See Table 5.D for additional details on each Chapter 61 property. The tax savings are determined by the classification Chapter 61 (forestry), 61A (agricultural), or 61B (open or recreational). The Assessor's office maintains records of lands in Chapter and advises landowners about the potential for placing their property in Chapter. Yearly applications must be submitted to the Assessor's office to continue inclusion in the program. There are minimum acreage requirements for these programs but in exchange for lower real estate taxes, the community is given the right of first refusal to purchase the property if the landowner withdraws from the program. In addition, there can be real estate tax consequences if the property is converted to residential, commercial, or industrial use. While land in Chapter 61 is not permanently protected and does not require public access, this incentive for landowners often makes paying real estate taxes on larger parcels affordable, which often means landowners can afford to keep these larger parcels without selling them for development. Pepperell has over 1,990 acres of land in Chapter 61.

### **2. Agricultural properties**

Pepperell has many properties in Chapter 61A, agriculture. This includes three APR farms, which have been permanently protected, totaling 381.018 acres. Public access is not a required component to be included in the APR program but one of the three APR farms, Kimball's Fruit Farm, which was protected in 2001, is a farm stand that is open for berry, pumpkin, and apple picking and visitors to the stand are often seen strolling the paths through the fruit trees and enjoying the beautiful distant mountain views. This farm also provides fresh fruits and vegetables to restaurants in Boston and the Farmer's Market in Boston as well. The second APR is Twin Valley Farm, which was also protected in 2001. Hay and vegetable crops are grown on this property. Hay is provided to the horses and cows and the vegetable crops are sold at a roadside stand and at the Pepperell Farmer's Market. The third APR is Gardner Farm. A portion of Gardner Farm was protected in 2015 and the owner of the farm continues to work with the MA APR Program to protect additional farmland under this program. Gardner Farm is a dairy operation and that has been in operation for many years.

### **3. Forested land**

Many of Pepperell's Chapter 61 properties are managed for wood production. With over 60% of Massachusetts being forested and 75% of these forests owned by families and individuals, helping landowners by working with them to encourage they place their properties in Chapter 61 is critical. We encourage landowners to protect their woodlands by allowing them to pay a reduced tax rate. Large forested tracts help to protect our water supply and wildlife habitat.

4. Areas significant for water resource protection

Pepperell recognizes the importance of protecting the municipal well sites. In addition to protecting the 400' Zone 1 for aquifer protection, additional properties around Pepperell's well sites have been purchased to add further protection. Pepperell also focuses on protecting the land around the streams and rivers that recharge their well sites. The passing of the Water Protection Resource Overlay District (WRPOD) in 1985 helps to further protect Pepperell's public water supply wells by imposing stricter regulations for work completed in the district that may otherwise negatively impact public wells (See Map 5, Pepperell Zoning Overlay Districts). Pepperell has worked in cooperation with other land protection organizations to protect properties along our riparian corridors and continues to focus on these properties when funds become available, either from local or state sources. Under Pepperell's Wetlands Protection Bylaw, which was passed in 2002, a 50' wide undisturbed vegetated strip of naturally occurring vegetation must be maintained between wetland resource areas and most proposed activities. This 50' buffer applies to most wetland resource areas for projects on lots created after 2002. Lots created prior to 2002, must meet this requirement to the fullest extent practicable.

5. Priority areas for protection

The Pepperell Conservation Commission has consulted with other land protection organizations, including the Nashua River Watershed Association, the Nashoba Conservation Trust, and the Nissitissit River Land Trust to identify priority areas for protection. This includes areas identified in *BioMap2*, lands abutting our rivers and their tributaries, and the expansion of corridors which have previously been protected. By protecting Chapter 61 properties and the larger unprotected parcels abutting them, we provide corridors for critical habitat and expanded trail systems. In addition, the Open Space Inventory Map identifies for protection parcels that connect with protected parcels in abutting towns, to maximize the corridor and protected areas.

6. Less-than-fee interests

Pepperell has several larger developments including Riverside Development off of Nashua Road and Countryside Development off of Park Street where open space was protected as part of these projects. A conservation restriction was drafted to preserve the open space for habitat and riverfront protection and natural conditions.

7. Private recreation land

Pepperell has 17 landowners who have placed their property in Chapter 61B. These landowners have classified their Chapter 61B properties under nature watching, which does not require public access be allowed. There are a large number of private horse facilities in Pepperell. These include opportunities for riding lessons, boarding, and multiple disciplines such as dressage, hunter jumper, and Western riding.

8. Estates and major institutional holdings

There are no estates and major institutional holdings in Pepperell.

## **B. Public and Nonprofit Parcels**

### **1. Public conservation and recreation resources**

#### **Municipal and State-owned Conservation Properties**

Pepperell's inventory of publicly owned properties includes municipal and state-owned lands. Pepperell's permanently protected open space properties are managed by various entities. The Pepperell Conservation Commission manages 965.362 acres, the 92.1 acre Town Forest is managed by the Town Forest Committee, and Pepperell's Water Division manages 205.750 acres. Pepperell's municipal conservation properties are open for passive recreation for the enjoyment of all. The trail systems have been GPS'd and trails maps are available on the Town of Pepperell and Nashoba Conservation Trust websites. Pepperell residents travel to surrounding towns for skating-related activities as well as public swimming facilities, though residents often take advantage of Heald Pond for swimming, water-related activities, and skating. There are many opportunities within Pepperell for hiking, bicycling, and other trail-related activities. The Pepperell Horse Owner's Association uses both public and private trails for their annual trail ride and horses are often encountered on conservation property trails. Geocaching has seen an increase in popularity and there are opportunities to participate in this hide and seek "game" on several conservation properties. Excellent fishing and boating can be found in Pepperell's rivers and streams as well as at Heald Pond. There are currently three canoe/kayak launch sites in Pepperell but there is an interest in additional launch sites. As a requirement of their Federal Energy Regulatory Commission (FERC) license, Pepperell Hydro Company proposed additional launch sites. The DFW property on Hollis Street, purchased in 2010, provides another launch site, but on the Nissitissit River. Hunting is also popular and a list of parcels open to hunting are available on the Conservation Commission webpage. Pepperell's residents are known for their love of horses and Pepperell is at the top of the list in the Commonwealth for the number of horses in a town. Many horse facilities include indoor arenas but horses are often encountered along the many trails in town. Use of off-road vehicles and snowmobiles are not allowed on public land, but continue to be widely used anyway, indicating local interest in the activity. Trails are used for walking, biking, cross-country skiing, horseback riding, and other passive recreational activities. There are several locations in Town where water-related activities attract people from near and far to enjoy fishing, including fly fishing, boating, kayaking and canoeing. Many properties, especially all DFW properties, are open to hunting. The DFW also permits trapping on their properties. There are 477.354 acres owned and managed by the DFW. These properties are protected under Article 97 of the Article of Amendment to the Constitution of the Commonwealth of Massachusetts and protected in perpetuity. The Executive Office of Energy and Environmental Affairs has a responsibility to protect, preserve, and enhance all open space areas. These permanently protected properties provide recreational opportunities, wildlife habitat protection, and water resource protection. Protected Water Division properties add to insure clean drinking water for the residents of Pepperell.

Conservation properties provide many passive recreational opportunities but Pepperell also offers many additional recreational opportunities to its residents.

Pepperell’s Recreation Commission, which consists of three Commissioners and one part-time paid staff member, oversees the scheduling of use at the Community Center, Town Field, Sean Wellington Basketball courts, and the surrounding fields.

**Municipal Recreational Resources**

To provide the recreational offerings desirable to residents within the town and to support future growth, the Recreation Commission is creating an “Athletic Field and Hard Court Facilities Plan”. The Plan will include an inventory of the recreational facilities currently available and using future growth considerations, identify what the Town’s future focus should be and how to get there. Recreational opportunities, such as tennis courts and swimming areas, which were identified in the Open Space and Recreation Plan survey as deficient, can be evaluated.

The Sis McGrath Community Center is a public, affordable source for the residents of Pepperell and surrounding communities to hold meetings, rent space for private parties, and host a wide variety of community events. The center also provides the location for recreation sponsored programs such as fitness programs, babysitting and home alone preparation courses, dance classes for kids, children’s playgroups and quilting. Many non-profit groups, such as scouts and folk dancing use the space for fundraisers or regular gatherings.

The Recreation Commission is also responsible for the following:

**TABLE 5.E Recreation Fields**

<b>Field Name</b>	<b>Location</b>	<b>Includes</b>
Town Field	Hollis Street	Playground, Shawn Kinsley Skate Park, two softball fields, gazebo and two lighted basketball courts
Kennedy Field	Main Street behind Public Safety Complex	One multipurpose field
Comiskey Field	Along drive to Varnum Brook Elementary School	Multipurpose fields that are configured into two 6v6 and one 8v8 soccer fields
Glow Field	End of Tucker St	Multipurpose fields that are configured into two 8v8 and one 11v11 soccer fields
Leao Field	Behind Varnum Brook Elementary School on top of hill	Multipurpose fields that are configured into two 11v11 soccer fields
Bartelson Fields	Jersey St	Four 60’ baseball diamonds
Nissitissit Middle School	33 Chace Ave	One 90’ baseball diamond and multipurpose field
Varnum Brook	Behind Varnum Brook Elementary School before hill	Two softball fields

## **Pepperell Senior Center**

The Pepperell Senior Center offers many exercise and fitness opportunities for adults including Zumba, Bone Builders, yoga, Zengevity, line dancing, folk dancing, and off-site walking groups. While the youth of Pepperell have many recreational opportunities, our seniors also have many, many programs designed for their needs.

## **State Conservation Properties**

The Commonwealth of Massachusetts owns more than 500 acres in Pepperell. Most of these properties are owned by the DFW, and these properties are open for hunting, fishing, and trapping in addition to other passive recreation uses.

## **Trails**

Pepperell has an extensive network of trails through all of its protected properties. This includes several longer trail systems, one of which is the eight-mile Jeff Smith Trail, which runs from Pepperell to Hollis, NH. The Jeff Smith Trail is included in AMC's Trail Guide. Pepperell's trails on Town of Pepperell Conservation Commission properties and Nashoba Conservation Trust properties are monitored and maintained through a monitoring program available on the Town of Pepperell website. The Conservation Commission maintains these properties with the help of many volunteers. Properties owned by other entities take responsibility for their own maintenance.

In addition, the 12 mile DCR-owned Nashua River Rail Trail provides a paved trail for in-line roller skating, biking, walking, and other activities from Ayer to Nashua, NH.

## **2. Nonprofit lands**

Pepperell has several non-profit land trusts that own land in town. These organizations often work with the Town or other land protection organizations to protect open space. The Nashoba Conservation Trust owns 402.952 acres, the Dunstable Rural Land Trust owns 31.99 acres, and the Nissitissit River Land Trust owns 21.0 acres.

### **Nashoba Conservation Trust (NCT)**

The Nashoba Conservation Trust was founded in 1969 to help protect rapidly disappearing open spaces in town. Today, NCT owns 46 parcels of over 400 acres and has conservation restrictions on an additional three parcels totaling 80 acres.

### **Dunstable Rural Land Trust (DRLT)**

The Dunstable Rural Land Trust was founded in 1974 with the intent of "preserving, conserving, and educating people about the rural landscape that is Dunstable, Massachusetts". The Dunstable Rural Land Trust owns two parcels in Pepperell totaling 31.99 acres.

### **Nissitissit River Land Trust (NRLT)**

The Nissitissit River Land Trust was founded to preserve the Nissitissit River and the lands along it in Massachusetts and New Hampshire. The NRLT has two parcels totaling 21.0 acres but the Trust has been instrumental in working with other land protection organizations to preserve hundreds more acres in Pepperell.

3. Other public, unprotected lands

Pepperell is part of the North Middlesex Regional School District and there are three public schools in Pepperell for students in grades K to eight. The Peter Fitzpatrick School was previously Pepperell's elementary school. When populations dipped for school-aged children, Varnum Brook Middle School was renamed Varnum Brook Elementary for students in grades K to 4. Pepperell's Planning Board has had numerous discussions and meetings about changing the zoning for the Peter Fitzpatrick School but the townspeople have been divided and the school is currently used by PACH, the school district offices, and Merrimack Education Collaborative. The Nissitissit Middle School houses students in grades 5 through 8 on a 75 acre property.

## 6. Community Vision

### A. Description of Process

The Open Space and Recreation Plan was updated in 2005. In 2010, a Public Forum was held at the Lawrence Library to update Section 8 and 9 of the original five-year action plan. Twenty-seven people attended the Public Forum. In addition, comments were solicited from Town department heads, the Planning Board, and the Board of Selectmen. Taking stock of all comments, the accomplishments of the previous five years, and on-going or as-yet-unmet objectives, an Action Plan for the next two years was adopted by both the Pepperell Conservation and Recreation Commissions.

In 2013, the Conservation Commission joined with the Recreation Commission to form the Open Space and Recreation Planning Committee. Additional members of the committee were solicited from other Town Boards and Commissions as well as members of the public. A list of committee members can be found in Section 2.

As a first step, the Conservation Commission updated the list of protected parcels since the 2005 Plan was created. Working with the Town's GIS consultant and later the Northern Middlesex Council of Government's GIS staff, the Open Space Inventory and Open Space Map were updated. Committee Members updated Section 2. Introduction, Section 3. Community Setting, Section 4. Environmental Inventory and Analysis, and Section 5. Inventory of Lands of Conservation and Recreation Interest.

A draft community survey was created by the Conservation and Recreation Commissions. The draft community survey was distributed to town boards for comments. The approved Community Survey was made available to residents on March 19, 2014. A Press Release in the Pepperell Free Press requested residents provide input to the Open Space and Recreation Plan by completing the survey. A link to the survey was placed on the Town of Pepperell and the Nashoba Conservation Trust website. The Recreation Commission forwarded the survey to their email contacts for the various athletic leagues and to anyone who had previously reserved the Community Center. Each town department head was asked to forward the survey to their departments/commissions. Copies of the survey were made available at the Conservation Commission office in Town Hall, at the Lawrence Library at the public computer terminals, and at the Senior Center. At the town election for Town Clerk on August 28, 2014, the Conservation Commission

handed a copy of the survey to residents who had not completed one previously. Surveys which were completed and dropped off at the Senior Center, Town Hall, and at the town election, were entered into Survey Monkey. A total of 185 surveys were completed. Results of the survey were tabulated by Survey Monkey. In addition, in 2016, the Board of Health, under a mini grant, requested input from town officials and older residents about issues they would like identified and acted upon. The information gathered during this process has been included as an appendix to the Open Space and Recreation Plan.

Input received from the Open Space and Recreation Plan Survey; town officials including department heads, commissions, and boards; and outreach as a result of the Board of Health grant, provided the Open Space and Recreation Plan Committee with the necessary data to complete Section 6. Community Vision, Section 7. Analysis of Needs, Section 8. Goals and Objectives, and Section 9. Seven-Year Action Plan.

Although funding cuts in FY2015 reduced staff hours and eliminated GIS support, which delayed the publication of the Open Space and Recreation Plan. Pepperell's Regional Planning Agency NMCOG, in response to a request for assistance in creating the required maps, generously provided their time and expertise to create the many maps required for this Plan.

## **B. Statement of Open Space and Recreation Goals**

The Open Space and Recreation Planning Committee considered Pepperell's Community Setting and Environmental Inventory and Analysis (Sections 3 and 4 of this plan), the goals listed in the 2005 Open Space Plan and 2010 update, and the results of our Open Space and Recreation Planning community survey and agree that the goals identified in the 2005 Open Space and Recreation Plan are still in line with what residents want for the future of Pepperell. The following Vision Statement sums up the broad goals that the committee agreed upon and that this plan is being created to meet.

In the future the Town of Pepperell will...

- continue to provide its citizens a healthy place to live,
- preserve and protect its natural resources and its rural, small town character,
- continue efforts to expand its protected open space and recreational opportunities to keep pace with population growth,
- provide access to existing community lands and programs to all citizens, and
- foster a cooperative approach between community groups and with neighboring towns and other organizations in planning and working for open space and recreation needs.

## **7. Analysis of Needs**

This section details the Open Space and Recreation Planning Committee's thoughts on how Pepperell can meet the broad goals stated in the Vision Statement. The highlighted phrases below are the key elements of the Vision Statement.

## **A. Summary of Resource Protection Needs**

If Pepperell is to continue to be a **healthy place to live** and to retain its **natural resources** and **rural character**, the town must preserve its most important open spaces. The open spaces provide vital protection for the town's environment, especially its water supply, and are the framework of aesthetics and activities that make up its rural character. To help in evaluating which open spaces are most important, various maps have been created to identify areas critical for protection.

Pepperell's Open Space Categories Map 10 shows the outline of a network of open space, mostly following the two major rivers, the Nashua and the Nissitissit, and their larger tributaries. The largest sizes and numbers of protected parcels cluster in the northwest and north central part of town, largely coinciding with the Water Resources Protection Overlay District (WRPOD). There is another smaller cluster on the Nashua River in the southeastern corner. Scattered throughout the rest of town are a number of smaller isolated protected parcels. To solidify resource protection in Pepperell, the highest need is for connections between existing protected parcels. Connections would enlarge the protected acreage, but more importantly, connections would increase the value of all the parcels by providing larger core areas, vital for water quality, biodiversity, and wildlife habitat protection.

Efforts to **expand protected open space** must be on going. Pepperell's Open Space Inventory Map 11 shows important connections that remain unprotected. Most prominent are the protection of farmland including the three largest remaining unprotected farms, extension of the protected corridors along the Nissitissit River, Sucker Brook, and Mine Brook, additions to the west bank of the Nashua River greenway from the Nissitissit confluence to the NH line, connections between protected areas on Lawrence Street and Boynton Street and between Hollis Street and Brookline Street, and connections to other protected parcels in neighboring towns, including The Throne, Reedy Meadow Brook, and Unkety Brook. Communicating with the property owners of these parcels, which have been identified as a priority for protection, is ongoing and communicating with other land protection organizations to help with protecting these parcels when they become available, is critical.

Due to the Town's past financial situation, which involved cuts to many departments, the Commission has been sensitive and made no requests at Town Meeting to appropriate funds for open space protection. There are other avenues available for land protection and the Open Space and Recreation Plan Oversight Committee, which will be formed to follow through on action items identified in this Plan, should investigate all opportunities available.

## **B. Summary of Community's Needs**

The Open Space and Recreation Planning Survey results show a broad commitment among Pepperell residents to **expand protected open space**. Of the 185 respondents to the Community Survey, 74% of residents stated acquiring more land for conservation was very important and 68% of residents stated acquiring more land for recreation needs was very important. Open, protected lands provide important recreational opportunities for our residents. In order to do so most effectively, Pepperell

needs to further organize its land protection strategy for both open space and future recreational needs. Although the town has a history of rallying together to protect open space, as evident with the Pepperell Springs and Keyes Farm properties, planning for future land protection efforts can be challenging.

For recreation, Pepperell residents, generally a community of mobile, reasonably affluent people, choose from a broad range of options available within the region. Neither urban resources such as museums, theaters, or professional sporting arenas nor major rural attractions such as mountains, large lakes, or the ocean exist in town, but they are available to Pepperell residents nearby. An evaluation of Pepperell's recreation needs takes place within this context, emphasizing those facilities which must be close to home or which Pepperell is uniquely able to provide. The Recreation Commission's present efforts to have an *Athletic Field and Hard Court Facilities Master Plan* prepared is timely and should help to keep recreational offerings in line with future growth.

Every weekend during spring, summer, and fall, vehicles with canoes and kayaks can be seen driving into Pepperell. Canoes and kayaks and even small boats, are often seen on Heald Pond, as well as the Nashua and Nissitissit Rivers. Families and individuals can be seen enjoying our waterways for paddling as well as fishing. In addition, the Nashua River Rail Trail is widely used, especially during evenings and weekends. Bicyclist can be found riding along Pepperell's back roads when temperatures permit. The concept of introducing "Complete Streets", which considers pedestrian use and bicycle lanes safely using public ways, has been the topic of several meetings. These are valuable opportunities created by the Town's long-term commitment to protecting open space and insuring these activities are available to all.

Massachusetts' draft Statewide Comprehensive Outdoor Recreation Plan (SCORP), Massachusetts Outdoors 2012!, reports that its statewide survey showed a demand for "trail based activities at the top of all regional lists." <sup>1</sup> Pepperell residents agree. When respondents to the Open Space and Recreation Planning Survey were asked what activities they participated in over the past two years 93.44% walk, 80.87% hike, and 73.77% bike. This is evident when visiting the Nashua River Rail Trail and when visiting many of Pepperell's conservation properties.

These results are remarkably consistent with a similar survey conducted in Pepperell's previous Open Space and Recreation Plans. In the 2005 survey, the three choices above were also in the top five of all responses. The most recent survey lists tennis courts, swimming areas, boating areas, and additional conservation lands as the top four items they would like to see more of.

In recent years the Recreation Commission has worked with citizen interest groups to **expand recreational opportunities**. The preparation of the *Athletic Field and Hard Court Facilities Master Plan* will help to identify the current recreational facilities and offerings and evaluate how the town can continue to provide recreational opportunities to keep up with the continued growth Pepperell has been experiencing. Citizen groups initiated, organized, and raised funds for proposed new activities while the Town provided land and took the responsibility to maintain the new facilities. The various youth sports leagues are examples of this type of partnership. The leagues are private, self-funding

organizations, which run their own programs in cooperation with the town on town-owned sports fields. It is a model that works, even during times of tight town budgets when, as now, the Recreation Department has limited staffing. Since publication of the 2005 Open Space and Recreation Plan, several items on Nissitissit Middle School student's wish list became a reality including a skateboard park in 2007 and an ice-skating rink in 2011/2012 and 2012/2013, both located on the Town Field. The skateboard park was the effort of a group of Pepperell residents who planned and fundraised for several years and the ice-skating rink was the result of planning and fundraising coordinated by The Friends of Pepperell (FOP). The FOP also spent four years fundraising for the Pepperell Playground, which was constructed in 2010. The FOP continues to discuss the possibility of a walking track at Town Field with the Recreation Commission. The FOP's donation of a soon-to-be installed "Bike Fix It" station at the Nashua River Rail Trail in Pepperell will provide air to pump up tires and other tools for minor bike repair to those using the Rail Trail.

If groups of citizens would like to see other opportunities made available, they should approach the Recreation Commission; it is possible that other new ventures can be developed.

The ongoing process of evaluating each town-owned property for accessibility will help to determine the appropriate properties to **provide access to existing community lands to all citizens** and to identify goals for working to ensure all people, of all abilities and ages, are able to enjoy the community lands we have available. A project to create an accessible trail in the wooded area behind the Lawrence Library is currently underway, led by the Nashoba Conservation Trust, together with library staff, Friends of the Lawrence Library, the Conservation Commission, DPW employees, a local Eagle Scout candidate, and volunteers. This project will include an ADA-accessible trail, as well as a Braille trail; seating for those using the trail to rest, reflect, or read; and an opportunity for young and old to learn about forest habitats for wildlife and the values of choosing native plants from the informational kiosks greeting those entering the trail. All conservation properties are being evaluated to identify if ADA-accessible trails are possible and where benches, which were specifically requested by our seniors, would be appropriate for making trails more welcoming.

The Senior Center, Lawrence Library, Recreation Commission, and Conservation Commission continue to offer **programs to all citizens**. The Recreation Commission organizes a diverse series of self-funded classes, festivals, and activities throughout the year. These programs are often held at the Community Center or nearby on the Town Field. Some of the programs offered by the Recreation Commission, and included at the Community Center, are exercise classes, quilting, archery, CPR training and babysitting classes, a car show, 4<sup>th</sup> of July festivities, a Fall festival, and an Easter egg hunt with a breakfast. The Center is also available for scout troops and other organizations to meet and the Center can be rented by those hosting baby or bridal showers, birthday parties, or other celebrations. Town Field is also used as a practice field for several youth sport's groups. The Recreation Commission offers a six-week ski program at Wachusett Mountain for grades 5 through 12. The Center also offers middle school dances several times each year. The 2005 Plan recommended improvements to the Town Field to allow programs to

continue to thrive and grow and this has happened with the introduction of the skateboard park, ice-skating rink, and the introduction of a Farmer's Market held every fall since 2007. The Farmer's Market offers fresh fruits and vegetables and a variety of other products including locally produced wine, honey, and homemade items. Combined with the Summer Concerts Series held on the Town Field at the bandstand, the Town Field is a focal point gathering.

In 2003, the Pepperell Senior Center officially opened its doors on Nashua Road. There is an endless list of opportunities that are now available to our seniors by a dedicated team of high-energy staff members and volunteers. A monthly newsletter, mailed to over 1,300 seniors, provides a full calendar of daily events and activities from mental health wellness to keeping physically strong and active to healthy eating to support groups to bus trips and concerts. Encouraging town employees to communicate activities their departments are offering to the Senior Center staff will ensure our seniors are aware of all activities occurring within town, so seniors can participate in trail walks, recreational offerings, and the many events sponsored by town staff.

The Lawrence Library offers a host of programs for babies through adults. Storytime for toddlers, a Teen Advisory Board that works with library staff to provide a Tween Club with pizza and a movie, a Teens-only movie night, a Teen Zone Café for teens to meet and enjoy refreshments, as well as concerts, art shows, a reading club, wine tasting, and more have made the library a hot spot for many locals.

Activities for teens and those who do not drive are sometimes hampered by the town's lack of public transportation. Transportation options are limited to family members who drive or carpooling. There is no bus service, except for Pepperell seniors, and no taxi service or train service available.

Appendix F: Section 504: Handicapped Accessibility Self Evaluation, shows that there are a number of practical steps that could be taken to **provide better access** to conservation and recreation lands and programs for people with disabilities. Efforts to provide better access should include evaluating all trails to determine if they can be modified to comply with ADA accessibility regulations.

### **C. Management Needs, Potential Change of Use**

The **protection of natural resources** involves careful and continuous management and maintenance of lands that are already classified as protected open space. Since the 2005 Open Space and Recreation Plan was completed, several management plans have been updated or prepared. The highest priority parcel on the list of lands requiring updated management plans, the Heald Street Orchard, was updated in 2008 using a Wildlife Habitat Improvement Program (WHIP) grant. In 1999, the orchard manager who had maintained the trees and harvested the fruit for nearly 20 years, did not renew his agreement with the town. The Conservation Commission advertised for an orchard manager but was unsuccessful. The trees are now past their prime for producing apples for production but the apple trees provide excellent cover for wildlife and the occasional apples produced delight the diverse wildlife and those walking the many trails. The WHIP grant provided funding to create managed habitats to attract a wider variety of wildlife to the 80-acre orchard. In 2008-2009, an 18 acre meadow was created when apple trees

were removed, which quickly introduced bobolink to the orchard. In 2012, a savannah was created by removing many trees and shrubs in a section of the orchard, thereby inviting other wildlife who favor these habitats. The WHIP grant also helped with maintenance costs for the orchard, including the cost of replacing both the east and west gates and surveying the property line at the west gate to prevent encroachment on a neighbor's property by those using the orchard.

In 2012, a Forest Management Plan was prepared for the Town Forest and a Forest Cutting Plan was approved for a selective cutting of the Town Forest, which took place in 2013. Funds from the selective cut will be used for future maintenance activities at the Town Forest.

The managers of Pepperell's public lands must insure that all users are fully aware of the rules and regulations. Prevention of problems through education is easier than eliminating abuses that are already taking place. Littering and vandalism are discouraged, for example, when public places are kept clean. Use of motorized vehicles, such as all-terrain vehicles, dirt bikes, and snowmobiles, on Pepperell conservation land is against the regulations, but it happens frequently. When education is not enough, land managers must attend to enforcement of the rules and seek the help of the police when necessary.

The Open Space and Recreation Plan survey results imply that **access to existing community lands and programs** could be improved by promotion and education. Public guided walks are now advertised on both the Town of Pepperell and Nashoba Conservation Trust websites. A new trail guide was recently published and continues to be updated. Trail maps are available at most kiosks as well as on the Conservation Commission webpage and Nashoba Conservation Trust website. Eagle Scouts have contributed by creating signs and kiosks as well as helping to improve habitats by constructing bat houses, bluebird boxes, and wood duck boxes.

**Cooperation between the town and regional groups** would benefit the town's natural resource protection efforts. Pepperell continues to work with the Nashua River Watershed Association and other land protection organizations to protect our natural resources.

## 8. Goals and Objectives

The primary purpose of the 2016 Open Space and Recreation Plan is to provide a framework within which the Conservation and Recreation Commissions, as well as other Pepperell boards and commissions can act to protect and preserve the important qualities and opportunities found in the open spaces of our town. Some potential commission activities can serve to protect and promote these lands **for** some human uses. These types of activities include building parking lots, offering sports programs, marking and maintaining trails, and purchasing additional land to meet the recreational needs of citizens. Conversely, other activities, which the two commissions may also undertake, are to protect and preserve open space **from** some human uses. Purchase of sensitive open space to protect it from being developed or damaged, managing protected land to improve wildlife habitat, and enforcing rules and regulations about the use of Pepperell's open space are examples of this. The following goals and objectives are an attempt to balance these two types of activities.

A considerable number of surveys were returned with comments such as, "Please keep our town small and rural." Objectively, this plan cannot do that. The committee interpreted such comments as expressions of some level of satisfaction with the Pepperell of today and uneasiness about the future Pepperell that will be shaped by additional growth. It seems inevitable that Pepperell will continue to grow and impossible for any Town commission, no matter how committed, to prevent that growth. Future growth is the result of Pepperell's location, the economy, and a demand for housing that outstrips the supply. What this plan does attempt to do is to outline a list of activities for the Town, primarily through the Conservation and Recreation Commissions, to do over the next seven years to retain, as much as possible, and even to improve the precious qualities of the town that Pepperell's citizens enjoy today.

These Goals were directly derived from input from Pepperell's citizens, both from present and past members of town boards and commissions and from the general public, existing plans (The 2005 Open Space Plan and The 2007-2016 Comprehensive Plan), the Open Space and Recreation Planning Survey, and comments based on reviews of drafts of this plan.

**Goal 1: Preserve Pepperell's public and private water supplies.**

The protection of the town's water supply was the first goal of the previous Open Space and Recreation Plan and was identified once again as Pepperell's citizens' highest priority in the recent survey. Water security cannot be taken for granted. It is a matter of public health, quality of life, and financial concern. Several eastern Massachusetts towns have already "run out" of water from ground or surface sources and are forced to limit supply and pay dearly for importation and/or treatment of drinking water. Pepperell's water supply is adequate in quantity and exceptional in quality largely because its recharge areas (the land which gathers and stores rainwater that replenishes the underground sources) are able to capture, purify, and store enough water for the Town's needs. Open space containing undisturbed forests, streams, swamps, and marshes within the recharge areas provide this priceless service. On the other hand, developed land containing buildings, pavement, and lawns interferes with groundwater recharge. The following objectives will help to preserve present and future drinking water sources. Objectives identified in the 2005 Plan, which have been completed to protect Pepperell's public and private water supplies, include preservation of the 265-acre Pepperell Springs property in 2006 and the approval of the sewer overlay district Zoning By-Law at Annual Town Meeting in May of 2005, indicate the importance Pepperell residents have placed on protecting our drinking water.

**Objectives**

Permanently protect additional open space in the Water Resources Protection Overlay District (WRPOD). Prioritize WRPOD protection efforts in the following order: Well Protection (Zone II) land, surface water and wetland resources, other open land in the watersheds of Blood, Gulf, Sucker, Stewart, and Reedy Meadow Brooks & Heald and Coon Tree Ponds.

**Goal 2: Protect sensitive natural resources and the rural character of the Town.**

“Rural character” is a phrase with many meanings. It is used in the Town’s Vision Statement in the Comprehensive Plan and was cited repeatedly in the results of the 2016 Open Space and Recreation Planning Survey. The Open Space and Recreation Planning Committee noted the inescapable connection between Pepperell’s rural character and its open spaces and natural resources. Rural character is a combination of aesthetic qualities and an atmosphere created by the presence of activities such as farming along with the landscapes it creates, the presence of forests and other “wild land” with wildlife for observation, hunting, and fishing, and an awareness of local history and traditions. Objectives in support of this goal aim to protect vulnerable qualities both **for** and **from** human uses. Sensitive natural resources can be of a general nature such as land suitable for agriculture or specific places, including local habitat for rare plants or animals, geologic features such as the Gulf Brook ravine, and waterways such as the Nashua and Nissitissit Rivers. Taking a broader view, a truly functioning natural system includes large tracts of open space, combining land controlled by many owners, with all parcels functioning together in support of the larger landscape and its individual special features. Pepperell conservation organizations and the MA DAR continue to work together to inform residents who own larger farms of the opportunities available to them under the Agricultural Preservation Restriction Program. Objectives identified in the 2005 Plan which have been completed to protect sensitive natural resources and the rural character of the Town, including preservation of the 265-acre Pepperell Springs property in 2006 and approval of an Open Space and Residential Subdivision By-Law, indicate Pepperell’s commitment to protect our natural resources and rural character.

### **Objectives**

- a. Permanently protect additional open space that include or abuts wetlands and waterbodies, vulnerable wildlife habitat (focusing on corridors, large forested tracts, greenways along our rivers, open fields, & vernal pools, especially BioMap core areas and Estimated Habitat for Rare Wildlife, and local landmarks (such as the bandstand, animal pound, covered bridge, and other historical sites or buildings).
- b. Encourage the MA DAR purchase of Agricultural Preservation Restrictions on eligible farmland.

### **Goal 3: Provide for long-term sustainability of open space protection and recreation efforts.**

If the Town is to continue to have adequate open space for the protection of its natural resources and to meet the recreational needs of Pepperell’s citizens, we will need to make a continuous effort for the foreseeable future. At the current pace of development, opportunities to purchase land for protected open space or recreation arise frequently, but unexpectedly, and the Town must be prepared to act if it is to take advantage of those opportunities. For example, land under any of the Chapter 61 provisions, if it is to be sold, is offered to the Town for first refusal, but the Town has a limited amount of time in which to react. That means that methods for evaluating and then funding a project, if justified, must be in place.

Beyond an ability to react to opportunities to purchase land being offered for sale, the Town would be able to take a proactive approach if a specific, parcel-by-parcel **priority list** of the most important open space is maintained and a steady **source of funding** is established. That is, landowners could be approached informally to donate or sell conservation restrictions, provide trail easements, or consider bequests of land to the Town or a land trust. Significantly, these methods are generally less expensive ways to preserve open space than outright purchase of land.

#### Objectives

- a. Form an oversight group to implement the goals, objectives and actions in this plan.
- b. Study open space “build out” possibilities and update the list of priority parcels for permanent protection.
- c. Determine the need and evaluate future recreational facilities (i.e., tennis courts, community swimming pool, additional fields, sport complex, etc.) and identify lands suitable for consideration.
- c. Examine financing and evaluate Community Preservation Act adoption.
- d. Identify funding mechanisms for land protection for both recreational facilities and open space protection.

#### Goal 4: Increase access for people of all demographic groups to Pepperell’s Open Space and Recreation lands and programs.

Town-owned land and town-sponsored programs may be unavailable to all citizens for several reasons. Perhaps the easiest-to-correct reason is a **lack of information**. It is important to constantly provide information and even to promote existing assets and programs, including education about why they are important. A second reason that land and programs may be unavailable is a **lack of transportation**, especially for young people. Pepperell has no public transportation and is, therefore, largely dependent on car-travel. Since conservation land and recreational facilities are not evenly distributed throughout town, which leaves some people no way to get to lands or programs they might enjoy. Trails for bicycles and pedestrians could help to fill this gap as well as being assets in their own right. Encouraging “Complete Streets” in the future could also help to increase access. Finally, it is possible that **physical barriers**, especially for people with disabilities, could be denying access.

#### Objectives

- a. Provide information and widely publicize lands and programs, including adding maps at all trailheads or kiosks.
- b. Sponsor programs for all ages to educate about natural history and the relationship between people and the environment.
- c. Promote inter-connected trail system on open lands and increase connectivity between recreational activity centers and neighborhoods. Encourage “Complete

Streets” to promote bicycle lanes on public ways to promote connections throughout town.

d. Evaluate recreational offerings to see if they meet community needs of all age groups by insuring an open line of communication between the Recreation Commission and Council on Aging to discuss programs both groups are offering.

e. Improve access to conservation and recreation lands and programs for people with disabilities by first completing an evaluation of all town-owned trails to determine if they meet the Department of Justice’s guidelines for accessibility.

**Goal 5: Promote a cooperative and regional approach to open space and recreation planning.**

Several local boards or commissions and several state agencies, as well as a number of private organizations share the responsibility for managing existing open land and recreation programs in Pepperell. Each of these organizations can also contribute to future projects. The largest expanses of protected open space in town are a mosaic of ownership including Massachusetts Division of Fisheries & Wildlife, town-owned conservation land, town-owned Water Department land, Nashoba Conservation Trust land, and privately owned agricultural preservation restriction land. It only makes sense for all groups to work together toward our common goals. In the same way, significant open spaces do not stop at town boundaries. Participation in regional coalitions working to protect open space is to the benefit of all.

**Objectives**

a. Encourage communication and cooperation between Town boards and commissions on open space and recreation issues.

b. Routinely include local land trusts and other non-profit organizations, such as the Nashoba Conservation Trust and the Nashua River Watershed Association, in the Town’s planning and implementation of the goals, objectives, and actions in this plan.

**9. Seven-Year Action Plan**

This seven-year action plan lists Actions, Priority Level, Responsible Party, and Funding Source for completing each of the objectives noted in Section 8. See Map 12, Open Space Action Plan Map. We realize that all of this plan’s goals, objectives, and actions are subject to funding and appropriation as well as finding staff or volunteer time to implement them. As the seven-year term that this plan covers moves along, changes will undoubtedly occur in the order of implementation as well as the Town’s priorities. This seven-year action plan describes, however, many important tasks that could contribute to the vision summarized in Section 6 and sets a pace at which they could be accomplished.

# Pepperell Open Space Action Plan Map

Evaluate WRPOD parcels for water protection

Evaluate WRPOD parcels for water protection

Evaluate WRPOD parcels for water protection

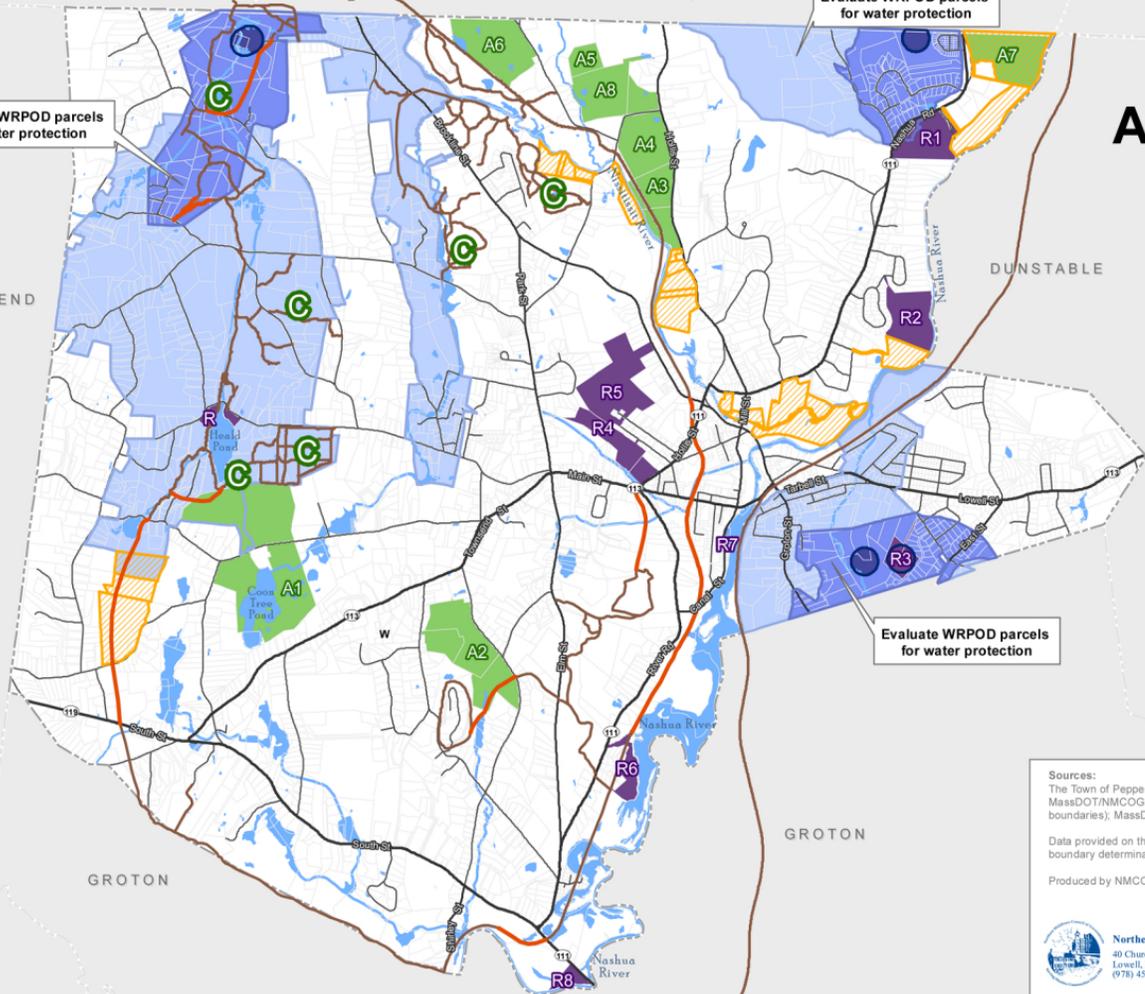
TOWNSEND

DUNSTABLE

GROTON

GROTON

- Priority Land for Protection
- Agricultural Landscapes Needing Protection
- Conservation Destination
- Recreation Destination
- Water Resource Protection Overlay District (WRPOD)**
- Water Source Protection Zone (WSPZ)
- Well Protection Zone (WPZ)
- Aquifer-Watershed Protection Zone (AWPZ)
- Pepperell Trails**
- Completed Trail
- Proposed Trail Connection
- Major Water Feature
- Parcel Boundary
- Town Boundary



Sources:  
 The Town of Pepperell (parcel boundaries 2015);  
 MassDOT/NMCOG (2013 roads); MassGIS (town boundaries); MassDEP (2009 hydrology)

Data provided on this map is not sufficient for either boundary determination or regulatory interpretation.

Produced by NMCOG 11/28/2016



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The Open Space and Recreation Planning Committee wrote this plan in coordination with the Conservation and Recreation Commissions. Realistically, neither commissions have the time nor the jurisdiction to manage the long-term oversight of all the actions listed below. It is the strong recommendation of the Open Space and Recreation Planning Committee that Objective 3-a, “Form an oversight group to implement the goals, objectives and actions in this plan,” be undertaken as soon as possible.

**SEVEN-YEAR ACTION PLAN**

Goal 1: Preserve Pepperell’s public and private water supplies.

*Objective 1-a. Permanently protect additional open space in the Water Resources Protection Overlay District (WRPOD). Prioritize WRPOD protection efforts in the following order: Well Protection (Zone II) land, surface water and wetland resources, open land in the watersheds of Blood, Gulf, Sucker, Stewart, and Reedy Meadow Brooks & Heald and Coon Tree Ponds.*

Action	Priority Level	Responsible Party	Funding Source
<ul style="list-style-type: none"> <li>Study &amp; prioritize for protection all privately owned open space parcels in the Water Resource Protection Overlay District (WRPOD).</li> </ul>	High – Year One through Year Three Evaluate all WRPOD parcels.	CC (Conservation Commission), DPW (Dept. Public Works)	N/A
<ul style="list-style-type: none"> <li>Develop protection plans including acquisition and conservation restrictions to be held by the town or a land trust for WRPOD parcels.</li> </ul>	High – Year One through Year Three - Determine which properties are available for protection and identify funding sources.	CC, DPW	Town Meeting, CC, Division of Fish & Game (DFG), Department of Conservation & Recreation (DCR), Grants, Donors
<ul style="list-style-type: none"> <li>Investigate eligibility of town-owned lands, including tax title properties, to be added to open space and/or recreation inventory.</li> </ul>	High – Ongoing. As properties become available.	CC, DPW, Tax Collector, BOS (Board of Selectmen)	N/A
<ul style="list-style-type: none"> <li>Implement protection plans</li> </ul>	High – Year One through Year Seven (as the properties become available by willing property owners and funding is available).	CC, DPW	Town Meeting, CC, DFG, DCR, Grants, Donors

**Goal 2: Protect sensitive natural resources and the rural character of the Town.**

*Objective 2-a. Permanently protect additional open space that includes or abuts wetlands and water bodies, vulnerable wildlife habitat (focusing on corridors, large forested tracts, riverfront areas, open fields, & vernal pools, especially BioMap core areas and Estimated Habitat for Rare Wildlife), and local landmarks (such as the bandstand, animal pound, covered bridge, and other historical sites or buildings).*

<b>Action</b>	<b>Priority Level</b>	<b>Responsible Party</b>	<b>Funding Source</b>
<ul style="list-style-type: none"> <li>Study &amp; prioritize for protection all non-WRPOD open space parcels.</li> </ul>	Medium to High – Year One through Year Four Evaluate all non-WRPOD parcels.	CC	N/A
<ul style="list-style-type: none"> <li>Develop protection plans including acquisition and conservation restrictions to be held by the town or a land trust.</li> </ul>	Medium to High – Year One through Year Four Determine which properties are available for protection and identify funding sources.	CC	Town Meeting, CC, Division of Fish & Game (DFG), Department of Conservation & Recreation (DCR), Grants, Donors
<ul style="list-style-type: none"> <li>Identify properties within floodplain areas. Introduce a floodplain bylaw. Introduce a funding mechanism for the town to purchase properties located in floodplains as they become available.</li> </ul>	Medium – Year One through Year Four	CC, PB, BOS, FinCom	N/A
<ul style="list-style-type: none"> <li>Implement protection plans</li> </ul>	High – Year One through Year Seven (as the properties become available by willing property owners and funding is available).	CC	Town Meeting, CC, DFG, DCR, Grants, Donors

*Objective 2-b. Encourage the MA DAR purchase of Agricultural Preservation Restrictions on eligible farmland.*

<b>Action</b>	<b>Priority Level</b>	<b>Responsible Party</b>	<b>Funding Source</b>
<ul style="list-style-type: none"> <li>Investigate parcels that qualify for inclusion in APR Program working with MDAR.</li> </ul>	Medium to High – Year One through Year Seven	CC, Agricultural Commission (AC)	N/A
<ul style="list-style-type: none"> <li>Collect/develop/distribute information about ARP Program to local farmers.</li> </ul>	Medium to High – Year One through Year Seven	CC, AC	N/A
<ul style="list-style-type: none"> <li>Identify funds to assist in purchase of APR's.</li> </ul>	Medium to High – Year One through Year Seven	CC, AC	N/A

Goal 3. Provide for long-term sustainability of open space protection and recreation efforts.

*Objective 3-a. Form an oversight group to implement the goals, objectives, and actions in this plan.*

<ul style="list-style-type: none"> <li>Identify workable structure for oversight group, e.g. appointment of committee by Selectmen, sub-committee of Conservation Commission, or other.</li> </ul>	High – ASAP -This is the first step for moving forward with implementation.	CC, RC (Recreation Commission), PB, BOS	N/A
<ul style="list-style-type: none"> <li>Appoint members, including individuals, as an oversight group who can be liaisons to Conservation Commission, Recreation Commission, Finance Committee, and Planning Board.</li> </ul>	High – ASAP -This is the first step for moving forward with implementation.	CC, RC, PB, BOS, FinCom	N/A
<ul style="list-style-type: none"> <li>Meet quarterly to discuss actions/schedule/updates for the oversight group.</li> </ul>	High - ASAP Schedule meeting as soon as committee is formed & thereafter quarterly.	CC, RC, PB, BOS, FinCom	N/A

*Objective 3-b. Study open space “build out” possibilities and update the priority parcels for permanent protection.*

<b>Action</b>	<b>Priority Level</b>	<b>Responsible Party</b>	<b>Funding Source</b>
<ul style="list-style-type: none"> <li>Integrate plans for actions in Objectives 1-a and 2-a.</li> </ul>	Medium – Year Three through Year Five	CC, DPW, PB, BOS	N/A
<ul style="list-style-type: none"> <li>Produce “vision map” of ideal Open Space network.</li> </ul>	Medium – Year Three through Year Five	CC, RC, PB, BOS	CC, RC

*Objective 3-c. Examine financing and evaluate Community Preservation Act adoption.*

<ul style="list-style-type: none"> <li>Plan long-term funding mechanism to support open space projects.</li> </ul>	Medium – Year Two through Year Five	PB, CC, RC, BOS, FinCom	Town Meeting, CC, RC
<ul style="list-style-type: none"> <li>Implement CPA</li> </ul>	Medium Begin implementation after Town Meeting approval	PB, CC, RC, BOS, FinCom	CC, RC, Grants, State Funds

*Objective 3-d. Evaluate recreation programs to plan for future open space and program needs and identify parcels for future expansion considerations.*

<ul style="list-style-type: none"> <li>Create an <i>Athletic Fields and Hard Court Facilities Master Plan</i></li> </ul>	High to Medium - Year Two through Year Four	RC, BOS, PB	RC, Grants
<ul style="list-style-type: none"> <li>Plan future recreation program needs focusing on land requirements for playing fields, sports facilities, or additional programs identified in the Open Space and Recreation Plan Survey, Athletic Fields and Hard Court Facilities Master Plan, and input from residents.</li> </ul>	High to Medium – Year Two through Year Six	RC, BOS	N/A
<ul style="list-style-type: none"> <li>Evaluate 50-acre town-owned parcel off Merrimack Drive, land behind Peter Fitzpatrick School, and other appropriate area for recreational facilities</li> </ul>	High to Medium – Year Two through Year Four	RC, BOS, CC, PB	N/A
<ul style="list-style-type: none"> <li>Evaluate the feasibility of a sports complex for swimming, ice skating and/or other recreational opportunities</li> </ul>	Medium to Low – Year Two through Year Five	RC, PB	N/A

Goal 4. Increase access for people of all demographic groups to Pepperell’s open space and recreation lands and programs.

*Objective 4-a. Provide information and widely publicize lands and programs.*

Action	Priority Level	Responsible Party	Funding Source
<ul style="list-style-type: none"> <li>Install signs, kiosks, parking areas at all conservation areas, wherever possible.</li> </ul>	Medium – Ongoing/ continuing action Year one through Year Seven. Discuss at each meeting to ensure newly protected properties have been addressed.	CC	CC, Grants
<ul style="list-style-type: none"> <li>Publish trails map in cooperation with the Nashoba Conservation Trust (NCT). Include trail maps at all trailheads/kiosks.</li> </ul>	Medium – Ongoing/ continuing action Year One through Year Seven. Discuss at each meeting.	CC, NCT	CC, Grants
<ul style="list-style-type: none"> <li>Publicize conservation land and Conservation Commission events in the Recreation Commission quarterly flier and Senior Center Newsletter.</li> </ul>	High – Ongoing/ continuing action Year One through Year Seven.	CC	N/A
<ul style="list-style-type: none"> <li>Issue periodic press releases about Conservation and Recreation Commission programs or decision</li> </ul>	Medium – Ongoing/ continuing action Year One through Year Seven.	CC, RC	N/A
<ul style="list-style-type: none"> <li>Post fliers about upcoming events on conservation land kiosks and in the Library, Community Center, and Senior Center. Use social media such as Facebook and websites.</li> </ul>	Medium – Ongoing/ continuing action Year One through Year Seven.	CC, RC	N/A

*Objective 4-b. Sponsor programs for all ages to educate about natural history and the relationship between people and the environment.*

Action	Priority Level	Responsible Party	Funding Source
<ul style="list-style-type: none"> <li>Hold public events such as guided walks on conservation land and advertise in local newspaper, websites, Recreation Newsletter, Senior Center Newsletter</li> </ul>	Medium – Ongoing/ continuing action Year One through Year Seven.	CC, RC, Senior Center (SC)	N/A
<ul style="list-style-type: none"> <li>Initiate a natural history/conservation column in a local newspaper, on the website, or create a Blog</li> </ul>	Medium – Ongoing action Year One through Year Seven.	CC	N/A
<ul style="list-style-type: none"> <li>Promote educational programs run by groups such as the NRWA and the DFW, encourage such groups to use conservation land for their educational programs. Use Social media such as Facebook and websites.</li> </ul>	Medium – Ongoing/ continuing action Year One through Year Seven.	CC	N/A

*Objective 4-c. Promote interconnected trail system on open lands and increase connectivity between recreational activity centers and neighborhoods.*

<ul style="list-style-type: none"> <li>Provide bike racks at conservation and recreation destinations.</li> </ul>	Medium – Ongoing/ continuing action Year One through Year Seven.	CC, RC	Town Meeting, CC, RC, Grants
<ul style="list-style-type: none"> <li>Provide town-wide alternative transportation network, including off-road trails, sidewalks and bike lanes “Complete Streets” by working with town officials and NMCOG.</li> </ul>	High – Ongoing/ continuing action Year One through Year Seven	PB, CC, RC, DPW, NMCOG	Town Meeting, Grants, CC, RC

*Objective 4-d. Evaluate recreational offerings to see if they meet community needs.*

<ul style="list-style-type: none"> <li>Develop assessment methods such as surveying, program evaluations and request for comments on registration materials for all ages to evaluate recreational offerings to see if they meet community needs.</li> </ul>	Medium – Year One through Year Seven Incorporate assessment into each program being offered.	RC	N/A
---	---	----	-----

*Objective 4-e. Improve access to conservation and recreation lands and programs for people with disabilities and older residents.*

<b>Action</b>	<b>Priority Level</b>	<b>Responsible Party</b>	<b>Funding Source</b>
<ul style="list-style-type: none"> <li>• Posts information about accessibility of conservation and recreation lands and programs for people with disabilities and older residents.</li> </ul>	Medium – Year One through Year Seven	CC, RC	N/A
<ul style="list-style-type: none"> <li>• Install additional benches</li> </ul>	Medium – Ongoing/ continuing action Year One through Year Seven.	CC, RC	CC, RC, Grants, Eagle Scouts
<ul style="list-style-type: none"> <li>• Implement one project per year to improve accessibility of conservation and recreation land.</li> </ul>	Medium – Ongoing/ continuing action Year One through Year Seven.	CC, RC	Town Meeting, CC, RC, Grants
<ul style="list-style-type: none"> <li>• Identify grants and other funding to implement accessibility goals.</li> </ul>	High – Ongoing/ continuing action Year One through Year Seven.	CC, RC	N/A

Goal 5: Promote a cooperative and regional approach to open space and recreation planning.

*Objective 5-a. Encourage communication and cooperation between town boards and commissions on open space and recreation issues.*

<ul style="list-style-type: none"> <li>• Increase collaboration between Selectmen, Conservation Commission, Planning Board, DPW, and Town Forest Committee on town-owned open land management.</li> </ul>	Medium – Collaboration with town staff and community groups should be ongoing throughout the Seven-year Action Plan.	CC, BOS, PB, DPW, Town Forest Committee (TFC)	N/A
<ul style="list-style-type: none"> <li>• Continue quarterly informational meetings for town department heads</li> </ul>	Medium – As scheduled.	BOS	N/A

*Objective 5-b. Routinely include local land trusts and other non-profit organizations, such as the Nashua River Watershed Association, in the town’s planning and implementation of the goals, objectives, and actions in this plan.*

Action	Priority Level	Responsible Party	Funding Source
<ul style="list-style-type: none"> <li>Designate a specific representative of the town for each non-profit group and ask the representative to keep pertinent town agencies informed of issues and decisions.</li> </ul>	Medium – Ensure continued attendance at meetings of each non-profit group by representative of town.	CC	N/A
<ul style="list-style-type: none"> <li>Encourage commissioners and town staff to become active individual members of local groups such as the Nashua River Watershed Association and local land trust.</li> </ul>	Medium – Confirm town staff are members of organizations.	CC, PB, BOS	N/A

## 10. Public Comments

The 2016 Pepperell Open Space and Recreation Plan was released for public review in October 2016, with a copy of the draft document available on the Town’s website. Hard copies were distributed to the Conservation Commission, Recreation Commission, Planning Board, and the Northern Middlesex Council of Governments for review and comment.

Comments were received from the Conservation Commission, Recreation Commission, Planning Board, Northern Middlesex Council of Governments, and the public, and the final draft Plan was revised and then presented to the Board of Selectmen on January 3, 2017 for review. Letters of Review were received from the Board of Selectmen, Planning Board, and the Northern Middlesex Council of Governments. The final draft Plan was submitted to the Division of Conservation Services (DCS) for review on December 22, 2016.

The DCS granted conditional approval on February 15, 2017 (See letter granting conditional approval on Pages 116 & 117). The Open Space and Recreation Plan has now been updated to include the information requested in the February 15, 2017 letter to be in compliance with current Open Space and Recreation Plan Requirements.



*The Commonwealth of Massachusetts*  
*Executive Office of Energy and Environmental Affairs*  
*100 Cambridge Street, Suite 900*  
*Boston, MA 02114*

Charles D. Baker  
GOVERNOR

Karyn E. Polito  
LIEUTENANT GOVERNOR

Matthew A. Beaton  
SECRETARY

Tel: (617) 626-1000  
Fax: (617) 626-1181

February 15, 2017

Paula Terrasi  
Open Space and Recreation Plan Committee  
Town Hall, One Main Street  
Pepperell, MA 01463

Re: Open Space and Recreation Plan

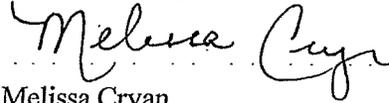
Dear Ms. Terrasi:

Thank you for submitting the draft Open Space and Recreation Plan for Pepperell to this office for review and compliance with the current Open Space and Recreation Plan Requirements. This plan was particularly thorough and has been conditionally approved through February 2024. Conditional approval will allow the town to participate in DCS grant rounds through February 2024, and a grant award may be offered to the town. However, no final grant payments will be made until the plan is completed.

1. Population Characteristics – include information on the town's industries.
2. Growth and Development Patterns – the Transportation section should include information on pedestrian options.
3. Water Resources – a section on aquifer recharge areas is needed.
4. Environmental Challenges – a section environmental equity issues must be included. Environmental equity refers to looking at the distribution of open spaces in the town and identifying any areas that are lacking in them.
5. Section 5 – this section begin with a discussion of why open space protection is important. The table that lists town-owned conservation and recreation properties should be expanded to include columns on condition, recreation potential, and degree of protection. It's not clear if Chapter 61 lands and Conservation Restrictions are included in the table as well. If they are not listed, please add them to Section 5.
6. Analysis of Needs –the Community's Needs section should discuss needs of special groups, such as the elderly and teens.
7. Action Plan – the goals and objectives should be listed in some sort of priority order with a funding source and responsible party identified for each.
8. ADA – were the facility inventory forms completed for each town-owned conservation and recreation property? If not, they must be completed.
9. Letters of Review – letters from the Regional Planning Agency, Planning Board, and Chief Municipal Officer are needed.

Congratulations on working on such an important task for your community! Please contact me at (617) 626-1171 or [melissa.cryan@state.ma.us](mailto:melissa.cryan@state.ma.us) if you have any questions or concerns, and I look forward to reviewing your final plan.

Sincerely,

A handwritten signature in cursive script that reads "Melissa Cryan". The signature is written in black ink and is positioned above the typed name.

Melissa Cryan  
Grants Manager

## 11. References

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# APPENDICES

DRAFT

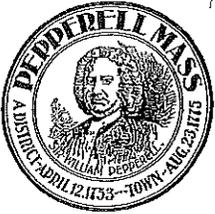
DRAFT

## **APPENDIX A – Letters of Review**

Letter of Review - Board of Selectmen

Letter of Review - Planning Board

Letter of Review - Northern Middlesex Council of Governments



# TOWN OF PEPPERELL

## BOARD OF SELECTMEN

January 9, 2017

Pepperell Conservation Commission  
Pepperell Recreation Commission  
Pepperell, MA 01463

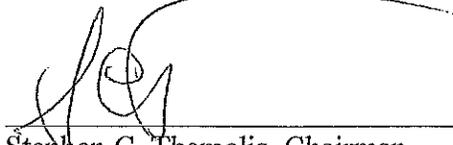
Honorable Boards:

We have carefully reviewed the final draft of the "Open Space and Recreation Plan" for the Town of Pepperell, which you have submitted for our consideration.

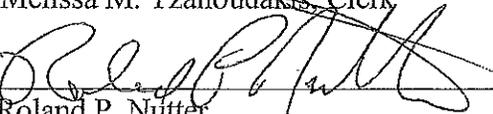
It is our pleasure to endorse and recommend the plan.

Congratulations are due to both Boards and to all of the other individual participants for the hard work and long hours that went into the development of an outstanding document.

Pepperell Board of Selectmen:

  
\_\_\_\_\_  
Stephen C. Themelis, Chairman

  
\_\_\_\_\_  
Melissa M. Tzanoudakis, Clerk

  
\_\_\_\_\_  
Roland P. Nutter



# Town of Pepperell Planning Board

1 Main Street, Pepperell, Massachusetts 01463-1644

978-433-0336 Phone 978-433-0338 Fax

[planning@town.pepperell.ma.us](mailto:planning@town.pepperell.ma.us)

Pepperell Conservation Commission  
Town Hall  
1 Main Street  
Pepperell, MA 01463

RE: Open Space and Recreation Plan 2016

Dear Commission Members:

The Planning Board, by a unanimous vote at their January 9, 2017 regularly scheduled meeting, endorses the 2016 Open Space and Recreation Plan. The planning process included a Community Survey which was made available to the citizens of Pepperell and one hundred and eighty-seven (187) responses were completed. The public input also included review by town officials, department heads, boards and commissions and perhaps most importantly the citizens of Pepperell. This community involvement demonstrates the Town's efforts to ensure the general public is involved in its planning and conservation process.

The Open Space and Recreation goals and objectives are valuable to Pepperell's short and long-range efforts to protect our valuable open space. At the same time, the plan also furthers our efforts to address the community's recreational needs.

Our Conservation Commission Administrator, Ms. Paula Terrasi, coordinated the drafting of the document and the Planning Board would like to commend her on a job well done.

Sincerely,

Mr. George Clark, Chairman  
January 24, 2017



# Northern Middlesex Council of Governments

December 27, 2016

Melissa Cryan  
Grants Manager  
Executive Office of Energy and Environmental Affairs  
100 Cambridge Street, Suite 900  
Boston, MA 02114

A Multi-Disciplinary

Regional Planning

Agency Serving:

Billerica

Chelmsford

Dracut

Dunstable

Lowell

Pepperell

Tewksbury

Tyngsborough

Westford

Dear Ms. Cryan:

The Northern Middlesex Council of Governments (NMCOG) has reviewed the Draft Open Space and Recreation Plan for the Town of Pepperell. NMCOG staff finds the Plan to be consistent with NMCOG's regional policy plans and compliant with the guidelines set forth by your office. This very thorough and comprehensive document provides town decision-makers with specific guidance for protecting and enhancing the community's resources.

Such a coordinated and well-planned initiative will ensure that the special places and resources of Pepperell can be enjoyed by future generations. By undertaking this planning effort, the Town has recognized that protection and stewardship of its natural, cultural, recreational and historical resources is essential to the overall quality of life, health, vitality and sustainability of the community, the region, and the Commonwealth.

Please feel free to contact me directly should you have questions regarding NMCOG's support for the updated Plan or if you require additional information. NMCOG looks forward to the successful implementation of the Action Plan over the upcoming years and commends the Town for its efforts.

---

Pat Wojtas  
Chair

---

Beverly A. Woods  
Executive Director

---

40 Church Street  
Suite 200  
Lowell, MA  
01852-2686

TEL: (978) 454-8021

FAX: (978) 454-8023

www.nmcog.org

Sincerely,

Beverly Woods  
Executive Director

Cc: Pepperell:  
NMCOG Councilors  
Board of Selectmen  
Conservation Commission

## **APPENDIX B - Survey**

Survey Advertising in Pepperell Free Press, Computer Terminals, and Email Sent to Recreation Commission Field and Facility Users

Open Space and Recreation Plan Survey

Open Space and Recreation Plan Survey Results

**PRESS RELEASE to PEPPERELL FREE PRESS**

The Town of Pepperell is currently updating its Open Space and Recreation Plan. A requirement of the plan is to obtain input from the residents of Pepperell relating to open space and recreation. A survey has been made available to all townspeople for this purpose. The survey is available on line by visiting the Town of Pepperell webpage and clicking on "Open Space and Recreation Plan" under News from Around Town and then clicking "on line survey". Copies of the survey can be completed at the Pepperell Senior Center, Lawrence Library, or Town Hall (Conservation Commission office).

A current Open Space and Recreation Plan enables the Town to qualify for state funding for acquisition and protection of important open space and recreation resources.

Your input is valuable. Surveys are due by April 28.

If you have any questions or would like to discuss any concerns you may have, please feel free to contact the Conservation Commission office.

Thank you.

Paula Terrasi, Conservation Administrator  
978-433-0325

Instructions for access Open Space and Recreation Plan Survey at Pepperell Senior Center and Lawrence Library public computer terminals.

# Pepperell's 2014 Open Space and Recreation Plan Survey

*This survey can also be taken on line by visiting the Town of Pepperell website at: [www.town.pepperell.ma.us](http://www.town.pepperell.ma.us)*

Please take a moment to complete the Open Space and Recreation Plan survey. The survey will help Pepperell identify the Town's open space and recreational needs.

Your input is valuable. Results of the survey will be included in the updated Open Space and Recreation Plan. A current Open Space and Recreation Plan will allow Pepperell to qualify for state funding for open space protection and recreational facilities/sites. Thank you!

***PLEASE RESPOND ON OR BEFORE APRIL 28, 2014***

Email sent to all Town of Pepperell contacts for Recreation Commission.

*Thanks For Your Input in Advance!*

---

## **Community Input is needed..**

Hello All,

The Town of Pepperell is in the process of updating its Open Space and Recreation Plan. A current Open Space and Recreation Plan will allow Pepperell to qualify for state funding/grants for acquisition and protection of important open space and recreational resources. The survey is an outreach tool to gather public opinion on open space and recreation-related needs and suggestions.

Community input is a required component of the Plan so we have prepared a survey, which can be completed by visiting the Town of Pepperell website. Click on the link for The Open Space and Recreation **Plan** which can also be found on the home page of the town website listed under News from Around Town.

Please feel free to forward this link to anyone who lives in Pepperell that you feel can provide their input. For those who prefer not to complete the survey on line, copies of the survey are available at Town Hall (Conservation Commission office), Lawrence Library, and the Senior Center.

Survey responses are due by April 28.

If anyone has any questions, please feel free to contact me.

Thank you.

Paula Terrasi  
Conservation Administrator  
Tel: (978) 433-0325  
Fax: (978) 433-0338

[Link to Survey](#)

This survey can be taken on line by visiting the homepage of the Town of Pepperell website ([www.town.pepperell.ma.us](http://www.town.pepperell.ma.us)). Under News from Around Town, click on the link provided.

## Town of Pepperell Open Space and Recreation Plan Survey 2014

The Town of Pepperell is in the process of updating its Open Space and Recreation Plan. Pepperell completed six previous plans in 1969, 1976, 1982, 1988, 1997, and 2005 to identify the Town's recreation and open space needs. A current municipal Open Space and Recreation Plan will allow Pepperell to qualify for state funding for the acquisition and protection of important open space and recreation resources.

As part of this project, the Town is seeking community input. Responses to the survey will assist the town in identifying the needs and concerns of residents in Pepperell regarding open space and recreation facilities. **PLEASE RESPOND ON OR BEFORE May 5, 2014 (deadline extended).**

How long have you lived in Pepperell	Ages of adults in household	Ages of children in household
	Age range	Age range
Less than 1 year <input type="checkbox"/>	18 – 25 years ( )	1 – 5 years ( )
1 – 5 years <input type="checkbox"/>	26 – 35 years ( )	6 – 9 years ( )
6 – 10 years <input type="checkbox"/>	36 – 45 years ( )	10 – 13 years ( )
11 – 15 years <input type="checkbox"/>	46 – 55 years ( )	14 – 17 years ( )
16 or more years <input type="checkbox"/>	Over 55 years ( )	

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

	Importance
	NOT ① ② ③ ④ ⑤ VERY
Preserving rivers, 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

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

Visits per year:	15+	10 – 14	5 – 9	1 - 4	Never
Conservation lands	<input type="radio"/>				
Trails	<input type="radio"/>				
Ponds and rivers	<input type="radio"/>				
Recreation facilities(Other than Town Field)	<input type="radio"/>				
Town Field (Next to Community Center)	<input type="radio"/>				
Nashua River Rail Trail	<input type="radio"/>				
Town Forest and Picnic Area	<input type="radio"/>				

**Do you feel Pepperell has an adequate number of:**

	Yes	No	Undecided
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 courts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tennis courts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conservation land	<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 Pepperell sponsor? Please list:**

---

**Please Fill In Both Sides**

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

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

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

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

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

Conservation: YES:  NO:  Undecided:

Recreation: YES:  NO:  Undecided:

Additional comments if any: \_\_\_\_\_

To preserve land or improve or develop recreational facilities, would you be willing to:	Yes	No	Undecided
Donate your 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/sites	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sell your land to the Town for a "bargain price"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sell your land to the Town for "fair market value"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sell or donate a 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/sites	<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)

	NOT	①	②	③	④	⑤	VERY
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 what an Agricultural Preservation Restriction (APR) is? YES:  NO:

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

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

Optional Contact Information:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Email: \_\_\_\_\_

\_\_\_\_\_

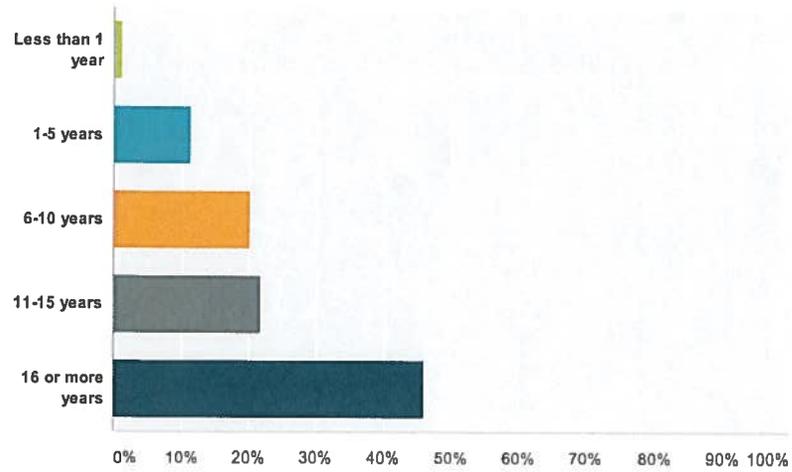
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Please Fill In Both Sides

# Town of Pepperell Open Space and Recreation Plan Survey 2014

## Q1 How long have you lived in Pepperell?

Answered: 185 Skipped: 0

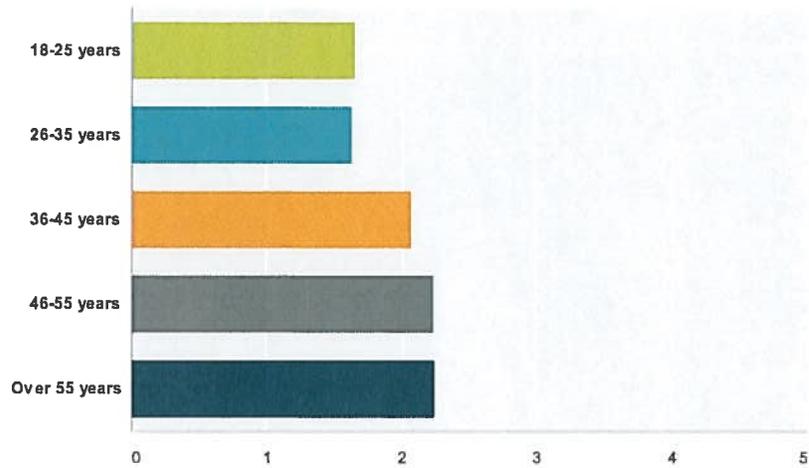


Answer Choices	Responses
Less than 1 year	1.08% 2
1-5 years	11.35% 21
6-10 years	20.00% 37
11-15 years	21.62% 40
16 or more years	45.95% 85
<b>Total</b>	<b>185</b>

# Town of Pepperell Open Space and Recreation Plan Survey 2014

## Q2 Ages of adults in household (please indicate quantity)

Answered: 185 Skipped: 0

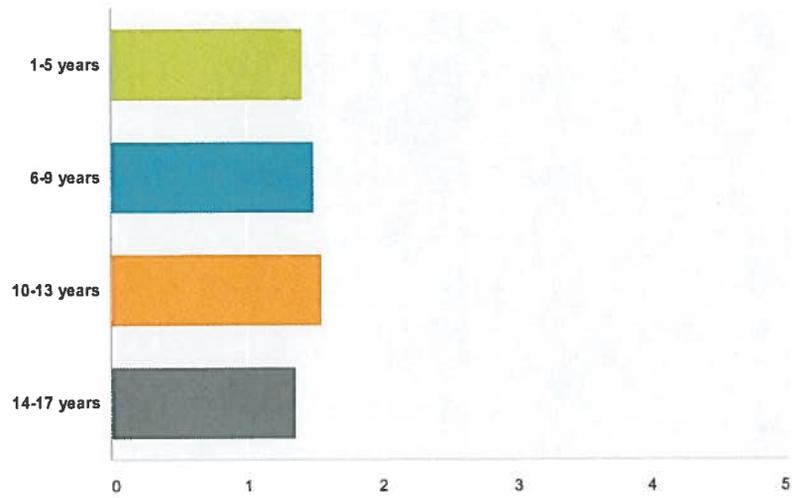


	0	1	2	3	4	5	Total	Average Rating
18-25 years	56.45% 35	27.42% 17	14.52% 9	0.00% 0	0.00% 0	1.61% 1	62	1.65
26-35 years	59.32% 35	18.64% 11	22.03% 13	0.00% 0	0.00% 0	0.00% 0	59	1.63
36-45 years	33.33% 33	26.26% 26	40.40% 40	0.00% 0	0.00% 0	0.00% 0	99	2.07
46-55 years	24.47% 23	27.66% 26	47.87% 45	0.00% 0	0.00% 0	0.00% 0	94	2.23
Over 55 years	25.88% 22	24.71% 21	49.41% 42	0.00% 0	0.00% 0	0.00% 0	85	2.24

# Town of Pepperell Open Space and Recreation Plan Survey 2014

## Q3 Ages of children in household (please indicate quantity)

Answered: 185 Skipped: 0

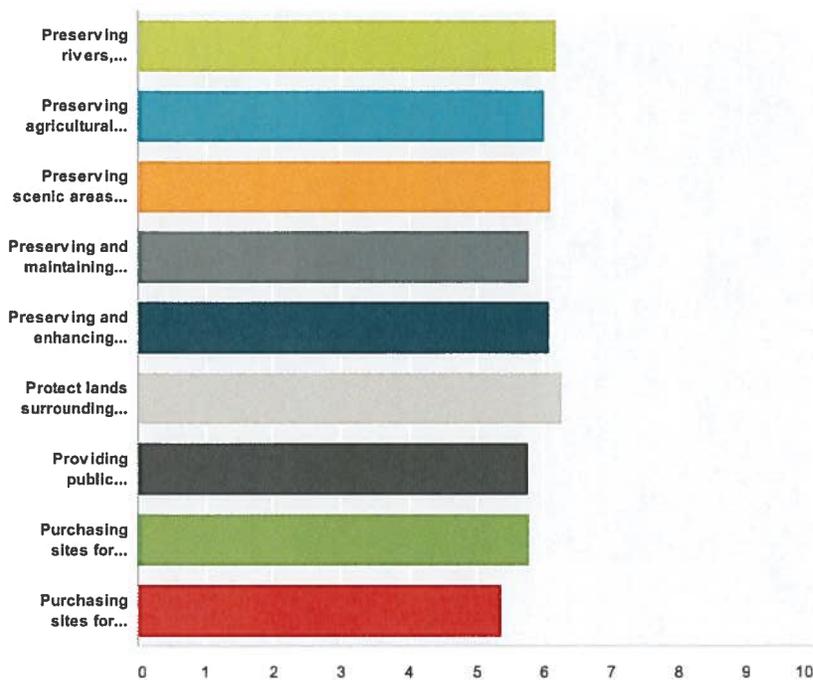


	0	1	2	3	4	5	Total	Average Rating
1-5 years	70.69% 82	18.10% 21	10.34% 12	0.86% 1	0.00% 0	0.00% 0	116	1.41
6-9 years	61.79% 76	28.46% 35	8.94% 11	0.81% 1	0.00% 0	0.00% 0	123	1.49
10-13 years	60.98% 75	27.64% 34	8.94% 11	1.63% 2	0.81% 1	0.00% 0	123	1.54
14-17 years	70.80% 80	22.12% 25	7.08% 8	0.00% 0	0.00% 0	0.00% 0	113	1.36

# Town of Pepperell Open Space and Recreation Plan Survey 2014

## Q4 Rate how important the following are to you, on a scale of 1 to 5: (1 being not important, 5 very important)

Answered: 185 Skipped: 0

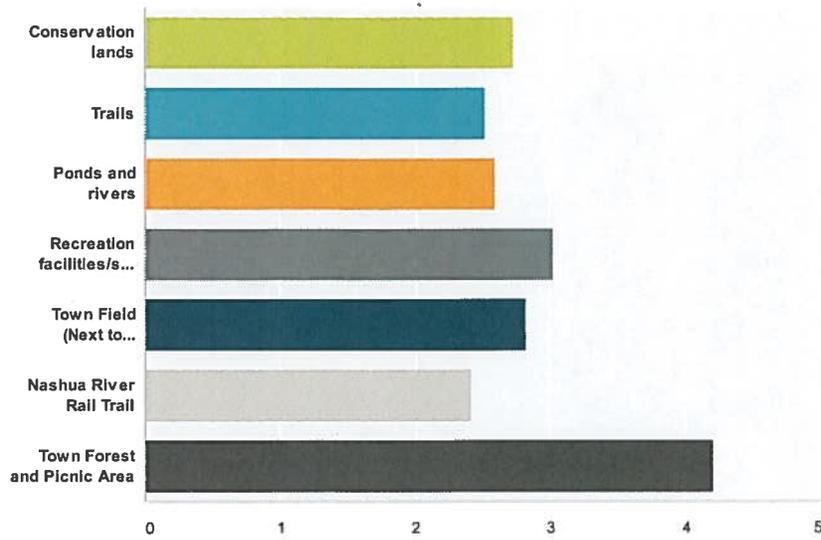


	NOT	1	2	3	4	5	VERY	Total	Average Rating
Preserving rivers, streams, wetlands, vernal pools	0.54% 1	1.08% 2	1.62% 3	6.49% 12	8.65% 16	29.73% 55	51.89% 96	185	6.18
Preserving agricultural land	0.54% 1	1.63% 3	1.09% 2	8.15% 15	10.87% 20	37.50% 69	40.22% 74	184	6.01
Preserving scenic areas and views	1.63% 3	0.00% 0	1.63% 3	4.89% 9	10.87% 20	36.96% 68	44.02% 81	184	6.10
Preserving and maintaining historic resources	0.54% 1	1.09% 2	3.80% 7	8.15% 15	20.11% 37	32.07% 59	34.24% 63	184	5.79
Preserving and enhancing wildlife habitats	0.54% 1	1.08% 2	2.70% 5	7.03% 13	10.27% 19	31.89% 59	46.49% 86	185	6.07
Protect lands surrounding water supplies, wells, aquifers	0.54% 1	0.00% 0	1.62% 3	4.86% 9	9.19% 17	30.27% 56	53.51% 99	185	6.27
Providing public recreational facilities	0.55% 1	2.19% 4	2.19% 4	11.48% 21	16.94% 31	31.69% 58	34.97% 64	183	5.77
Purchasing sites for conservation	1.63% 3	3.26% 6	1.09% 2	12.50% 23	12.50% 23	27.72% 51	41.30% 76	184	5.79
Purchasing sites for recreation	2.19% 4	4.37% 8	4.37% 8	15.30% 28	19.67% 36	26.23% 48	27.87% 51	183	5.36

# Town of Pepperell Open Space and Recreation Plan Survey 2014

## Q5 How often do you visit or use any of the following Pepperell resources each year?

Answered: 184 Skipped: 1

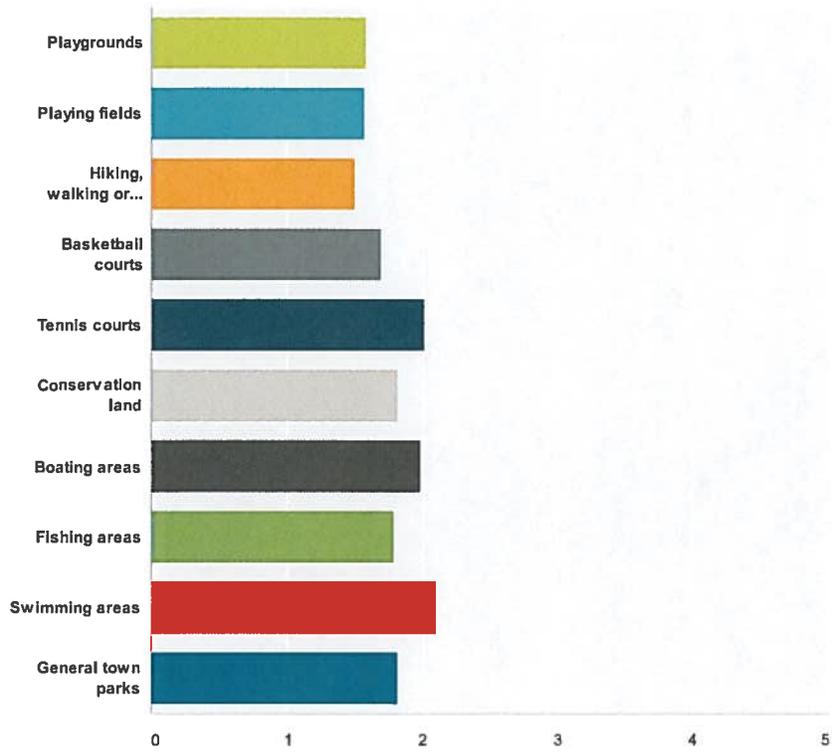


	15+	10-14	5-9	1-4	Never	Total	Average Rating
Conservation lands	30.73% 55	14.53% 26	17.32% 31	27.37% 49	10.06% 18	179	2.72
Trails	35.71% 65	15.93% 29	17.03% 31	23.63% 43	7.69% 14	182	2.52
Ponds and rivers	32.04% 58	17.13% 31	19.34% 35	23.20% 42	8.29% 15	181	2.59
Recreation facilities/sites (Other than Town Field)	23.03% 41	12.92% 23	20.22% 36	26.97% 48	16.85% 30	178	3.02
Town Field (Next to Community Center)	22.35% 40	16.20% 29	26.26% 47	27.37% 49	7.82% 14	179	2.82
Nashua River Rail Trail	36.16% 64	18.08% 32	18.64% 33	22.60% 40	4.52% 8	177	2.41
Town Forest and Picnic Area	2.21% 4	5.52% 10	13.81% 25	26.52% 48	51.93% 94	181	4.20

# Town of Pepperell Open Space and Recreation Plan Survey 2014

## Q6 Do you feel Pepperell has an adequate number of:

Answered: 185 Skipped: 0



	Yes	No	Undecided	Total	Average Rating
Playgrounds	61.54% 112	18.68% 34	19.78% 36	182	1.58
Playing fields	61.75% 113	19.13% 35	19.13% 35	183	1.57
Hiking, walking or biking trails	60.44% 110	30.22% 55	9.34% 17	182	1.49
Basketball courts	55.49% 101	20.33% 37	24.18% 44	182	1.69
Tennis courts	24.18% 44	51.10% 93	24.73% 45	182	2.01
Conservation land	34.07% 62	49.45% 90	16.48% 30	182	1.82
Boating areas	30.77% 56	40.66% 74	28.57% 52	182	1.98
Fishing areas	46.45% 85	27.87% 51	25.68% 47	183	1.79
Swimming areas	7.69% 14	74.73% 136	17.58% 32	182	2.10
General town parks	33.52% 61	50.55% 92	15.93% 29	182	1.82

**Q7 Are there additional facilities you would like to see Pepperell sponsor? Please list:**

Answered: 60 Skipped: 125

# Town of Pepperell Open Space and Recreation Plan Survey 2014

## Q7 Are there additional facilities you would like to see Pepperell sponsor? Please list:

Answered: 61 Skipped: 125

#	Responses	Date
1	Tennis courts that can be used. Winter skating pond. Turf fields	8/9/2014 12:32 AM
2	Fix the tennis courts!	6/30/2014 5:51 PM
3	Yes - Please pass the Community Preservation Act ! It would be good for the selectmen and other town officials to publically recognize that many folks in Pepperell moved here to be near the open space and outdoor opportunities provided by the rivers and streams (Nashua, Nissitissit, Gulf, Sucker Brooks, among others), Ponds (Heald), conservation lands (MDFW lands, Conservation land, Nashoba Cons Trust, Hary Rich, Rail Trail), farms (Kimballs, Twin Valley, Gardner, Win Duke's) etc. The town should continually be looking for open space purchases - What ? don't have the money ? Then pass the Community Preservation Act ! Any "facilities" that promote Pepperell as having these resources would be ok, for example boat launches, trailheads, outdoor businesses etc. Development for development's sake or to "increase the tax base" is not ok, in my opinion.	6/27/2014 1:43 PM
4	Yes - Please pass the Community Preservation Act ! It would be good for the selectmen and other town officials to publically recognize that many folks in Pepperell moved here to be near the open space and outdoor opportunities provided by the rivers and streams (Nashua, Nissitissit, Gulf, Sucker Brooks, among others), Ponds (Heald), conservation lands (MDFW lands, Conservation land, Nashoba Cons Trust, Hary Rich, Rail Trail), farms (Kimballs, Twin Valley, Gardner, Win Duke's) etc. The town should continually be looking for open space purchases - What ? don't have the money ? Then pass the Community Preservation Act ! Any "facilities" that promote Pepperell as having these resources would be ok, for example boat launches, trailheads, outdoor businesses etc. Development for development's sake or to "increase the tax base" is not ok, in my opinion.	6/27/2014 1:43 PM
5	none	6/16/2014 9:29 AM
6	We need an enclosed dog park	6/13/2014 12:58 PM
7	Community center with a pool and job opportunities for our youth	6/5/2014 12:30 PM
8	indoor pool	5/25/2014 11:49 PM
9	Indoor accessible pool.	5/25/2014 2:12 PM
10	No.	5/22/2014 3:34 PM
11	I actually think we have the trails we need to do a better job marking and marketing	5/17/2014 10:54 PM
12	tennis courts and sports facilities	5/17/2014 10:31 PM
13	tennis courts	5/12/2014 9:11 PM
14	I believe the land for sale at 150 Jewett St., which includes a large wetlands habitat and undeveloped woodlands, would be a worthy purchase for the town. It could be connected to the Jeff Smith trail beginning at that site.	5/12/2014 1:46 PM
15	Make Heald pond or some pond in pepperell swimable for local residents.	5/12/2014 1:23 PM
16	Swimming beach	5/12/2014 9:32 AM
17	I would like to see a public beach or pool to take children swimming in the summer. I think the town could also use trails that allow motorized vehicles (snow mobiles, ATVs).	5/7/2014 11:43 AM

## Town of Pepperell Open Space and Recreation Plan Survey 2014

18	I would like to see more trails for mountain biking. Partnering with a local mountain bike advocacy groups like New England Mountain Bike Association (NEMBA) or Nashoba Dirt Order (NDO) would be helpful so that sustainable multi-use (hiking, equestrian and mountain biking) trails could be built. Pepperell does not have any areas that are considered to be destinations for mountain bike riding. On the contrary, Groton (GTF, etc.), Townsend (Pearl Hill), Nashua (Mine Falls, Yudicky Farm), Chelmsford (Russell Mill), Merimack NH (Horse Hill), all have singletrack trails that are very popular and enjoyed by many. Finally, mountain bikers, more than any other trail use group, do the majority of trail maintenance. There are a number of mountain bikers in Pepperell who volunteer their time maintaining trails in Groton. It would be great to have similar trails in Pepperell. Thanks!	5/7/2014 8:09 AM
19	Swimming areas fenced hockey fields drama centers arts and crafts centers	4/28/2014 9:33 PM
20	More/larger community use space for activities and community classes. A town pool/water park would be a great addition. Also it seems like soccer and baseball have a lock on the fields and they aren't available to others.	4/28/2014 9:13 PM
21	National Park land on the Nashua River	4/24/2014 2:48 PM
22	There is nowhere to swim in town. No town beach, no town pool...	4/18/2014 1:25 PM
23	Pepperell Historical Center	4/17/2014 10:16 AM
24	Horse park	4/15/2014 2:40 PM
25	Canoe access below the Main St. dam	4/15/2014 7:17 AM
26	Clean up and conversion of the old mill on Mill Street to a park or recreation facility. That area is a real eye sore.	4/14/2014 10:58 AM
27	Fix the tennis courts	4/14/2014 8:12 AM
28	street hockey public swimming area indoor sports facility similar to Tyngsboro sports center	4/13/2014 10:16 PM
29	Improve the tennis courts!!!	4/13/2014 8:39 AM
30	swimming areas	4/12/2014 1:09 PM
31	Public swimming	4/12/2014 8:23 AM
32	Golf	4/12/2014 7:23 AM
33	Tennis courts are a mess!	4/11/2014 10:17 PM
34	A rec center would be wonderful. Something similar to a YMCA.	4/11/2014 8:57 PM
35	Storage facilities for youth/outdoor groups.	4/11/2014 6:51 PM
36	Pool, track, ice rink	4/11/2014 6:43 PM
37	Paved or cleared walking trails around schools and town fields. Larger community center. Ice rink in winter	4/11/2014 6:33 PM
38	sports fields	4/11/2014 5:51 PM
39	Community Center of the Arts	4/11/2014 5:40 PM
40	Walking track or a forest trail obstacle course. Sprinkler park. Better info on how to use the rail trail. Like snow shoeing in the winter. Canoe rentals. That sort of thing.	4/11/2014 5:07 PM
41	swimming; ice skating; indoor playground	4/11/2014 4:40 PM
42	Youth fitness and swimming	4/11/2014 4:32 PM
43	Lost touch with status of playgrounds, playing fields etc	4/11/2014 3:34 PM
44	A bigger picnic area away from the busy streets where families could enjoy the outdoors for several hours at a time.	4/11/2014 2:41 PM
45	A swimming pool similar to the one in Shirley. There are many Pepperell families (ours included) that pay over \$200 per summer to join the Shirley pool. It is a very well run program, a clean facility, and includes well trained life guards.	4/11/2014 1:20 PM
46	Infant/Toddler classes on the weekends at Pepperell Recreation Center (mainly in the winter months!). Tyngsboro Library does it and they have a great turnout, in fact, waitlist sometimes (Toddler Yoga / Music Classes / Dad's & Donuts / Etc)	4/11/2014 1:15 PM

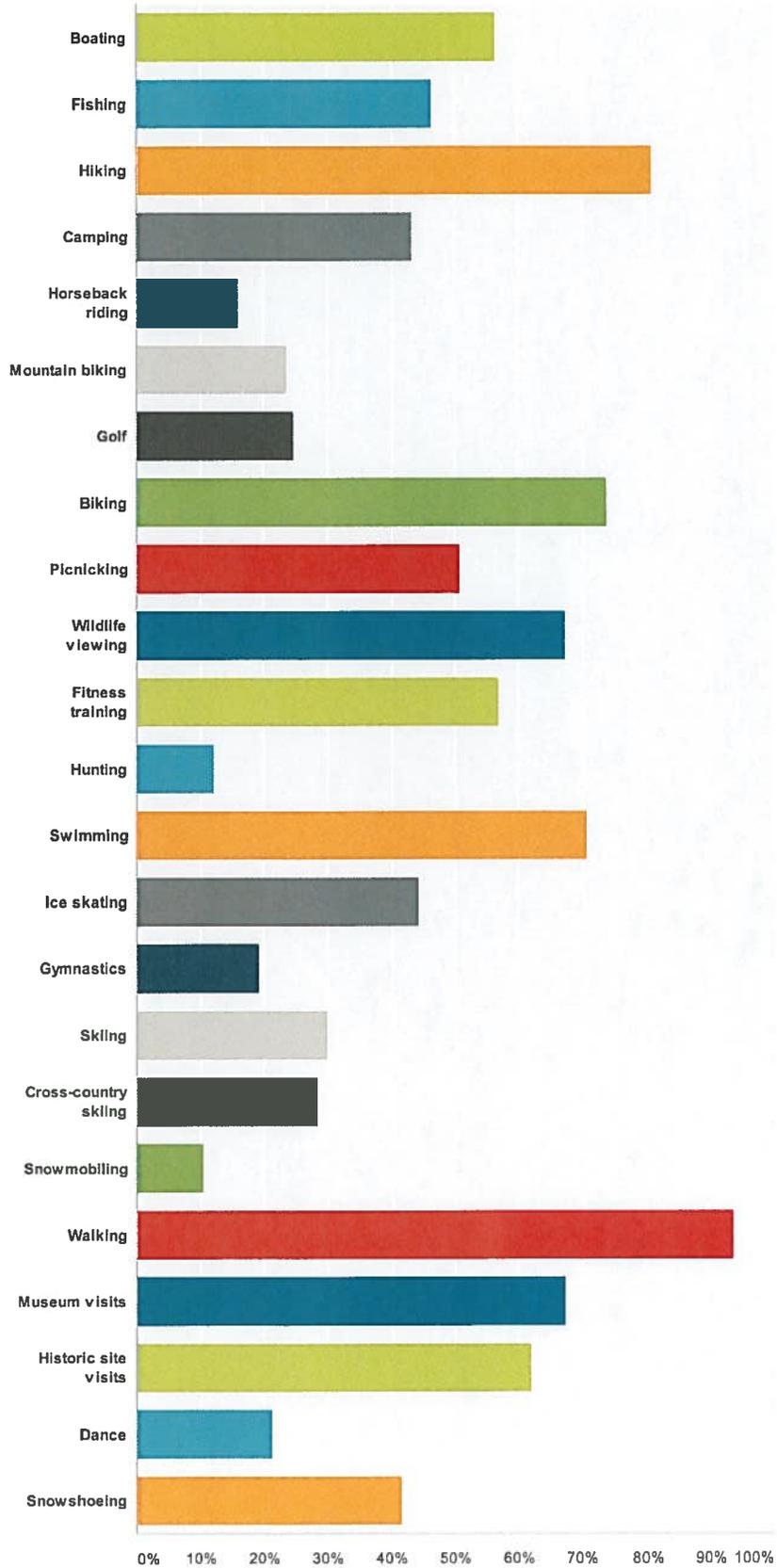
## Town of Pepperell Open Space and Recreation Plan Survey 2014

47	I would love to see a GATED park area. Somewhere parents of small children can gather and play safely. With under 5 equipment	4/11/2014 1:11 PM
48	boat launch on river rehab tennis courts walking track	4/11/2014 1:09 PM
49	maintain trails better	4/10/2014 8:45 AM
50	We have enough town buildings--need to maintain better (e.g., Community Center is in shameful condition) and use what we have to best advantage.	4/8/2014 5:30 PM
51	Larger boat launch on Nashua River	4/8/2014 3:30 PM
52	Mountain Biking Park/Trails	4/8/2014 2:31 PM
53	Better community center for all use, especially indoor winter activities.	4/5/2014 8:30 PM
54	Tennis Courts; Swimming Areas; Ice Skating Arena	4/5/2014 12:16 PM
55	Tennis Courts. Riverfront park at old mill site.	4/5/2014 9:11 AM
56	Indoor recreation/gym facility like Tyngsboro Sports Center	4/3/2014 8:14 AM
57	not at this time but business sponsors are another story.	4/2/2014 9:32 PM
58	More areas for children and families to be able to get outdoors... build a town beach area on the river... have additional playgrounds... turn the old Indian Head ski area into a park with trails, sledding, etc.	4/1/2014 11:04 PM
59	Areas for overnight camping for scouts, etc.	4/1/2014 2:52 PM
60	Would really like a town ice skating rink with lights and a warming/snack shack - nice old town feel	3/31/2014 9:38 AM
61	Town pool....the skate park is very small & most of the people really didn't vote for it that actually use it.	3/29/2014 2:02 AM

**Q8 Please check all activities that you or household members participated in over the past two years either in Pepperell or out of town:**

Answered: 183 Skipped: 2

# Town of Pepperell Open Space and Recreation Plan Survey 2014



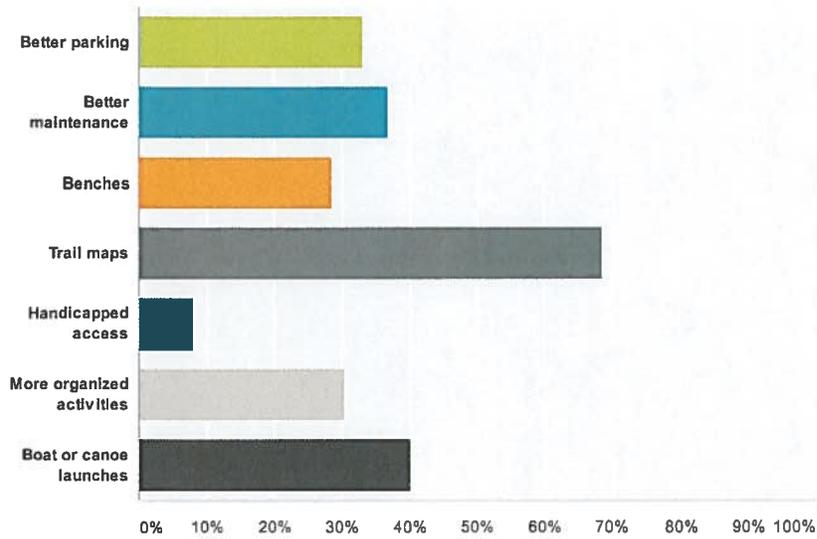
Answer Choices	Responses	
Boating	56.28%	103
Fishing	46.45%	85

## Town of Pepperell Open Space and Recreation Plan Survey 2014

Hiking	80.87%	148
Camping	43.17%	79
Horseback riding	15.85%	29
Mountain biking	23.50%	43
Golf	24.59%	45
Biking	73.77%	135
Picnicking	50.82%	93
Wildlife viewing	67.21%	123
Fitness training	56.83%	104
Hunting	12.02%	22
Swimming	70.49%	129
Ice skating	44.26%	81
Gymnastics	19.13%	35
Skiing	30.05%	55
Cross-country skiing	28.42%	52
Snowmobiling	10.38%	19
Walking	93.44%	171
Museum visits	67.21%	123
Historic site visits	61.75%	113
Dance	21.31%	39
Snowshoeing	41.53%	76
<b>Total Respondents: 183</b>		

**Q9 What additional facilities would increase your use of conservation/recreation land:**

Answered: 152 Skipped: 33

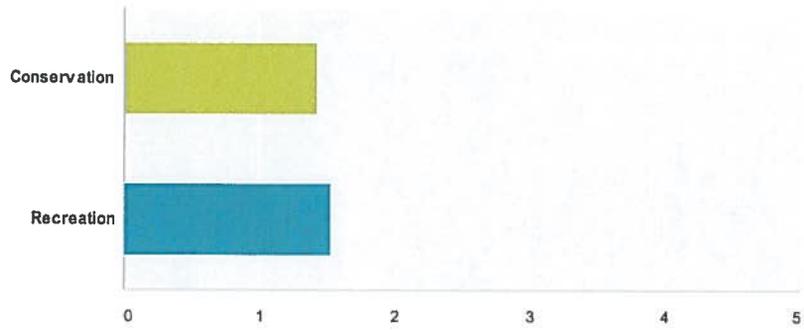


Answer Choices	Responses
Better parking	32.89% 50
Better maintenance	36.84% 56
Benches	28.29% 43
Trail maps	68.42% 104
Handicapped access	7.89% 12
More organized activities	30.26% 46
Boat or canoe launches	40.13% 61
<b>Total Respondents: 152</b>	

# Town of Pepperell Open Space and Recreation Plan Survey 2014

## Q10 Should the Town of Pepperell continue to acquire land for the following:

Answered: 185 Skipped: 0

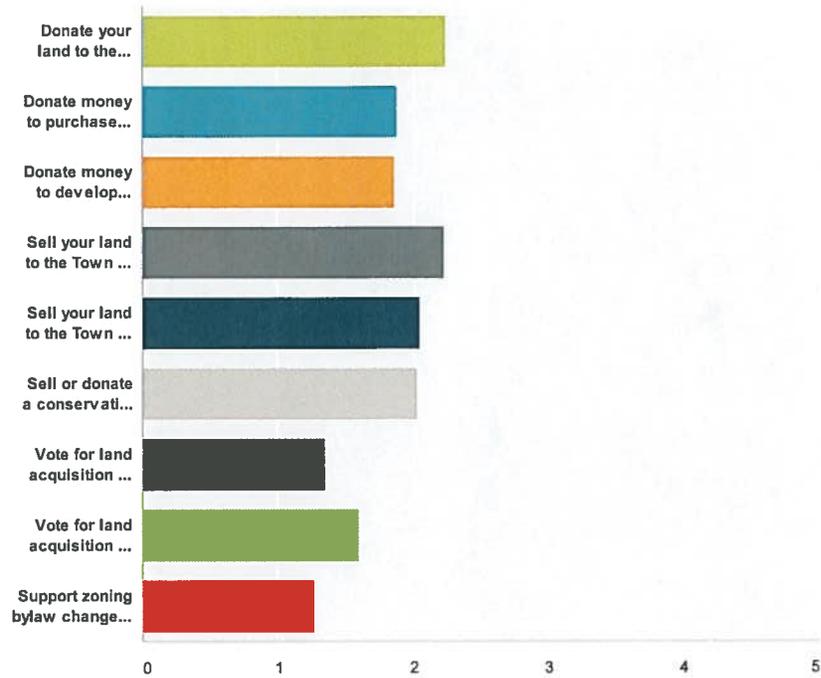


	Yes	No	Undecided	Total	Average Rating
Conservation	74.32% 136	9.29% 17	16.39% 30	183	1.42
Recreation	68.11% 126	11.89% 22	20.00% 37	185	1.52

# Town of Pepperell Open Space and Recreation Plan Survey 2014

## Q11 To preserve land or improve or develop recreational facilities/sites, would you be willing to:

Answered: 183 Skipped: 2

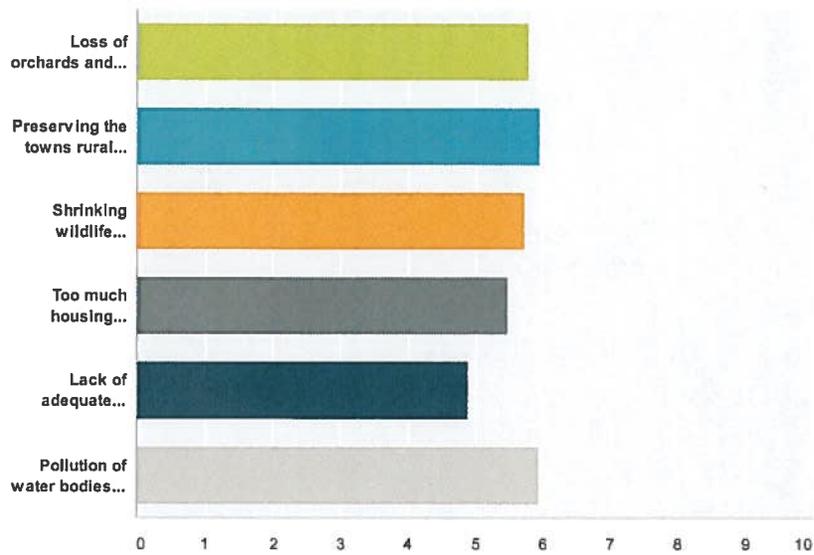


	Yes	No	Undecided	Total	Average Rating
Donate your land to the Town	5.78% 10	65.32% 113	28.90% 50	173	2.23
Donate money to purchase land	43.02% 77	25.70% 46	31.28% 56	179	1.88
Donate money to develop recreation facilities/sites	42.94% 76	28.25% 50	28.81% 51	177	1.86
Sell your land to the Town for a "bargain price"	4.68% 8	69.01% 118	26.32% 45	171	2.22
Sell your land to the Town for "fair market value"	22.81% 39	49.71% 85	27.49% 47	171	2.05
Sell or donate a conservation restriction to protect your land from future development	30.99% 53	35.09% 60	33.92% 58	171	2.03
Vote for land acquisition for open space	78.57% 143	8.24% 15	13.19% 24	182	1.35
Vote for land acquisition for recreation facilities/sites	63.74% 116	12.09% 22	24.18% 44	182	1.60
Support zoning bylaw changes to preserve open space and scenic and hilltop views	84.07% 153	6.04% 11	9.89% 18	182	1.26

# Town of Pepperell Open Space and Recreation Plan Survey 2014

## Q12 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)

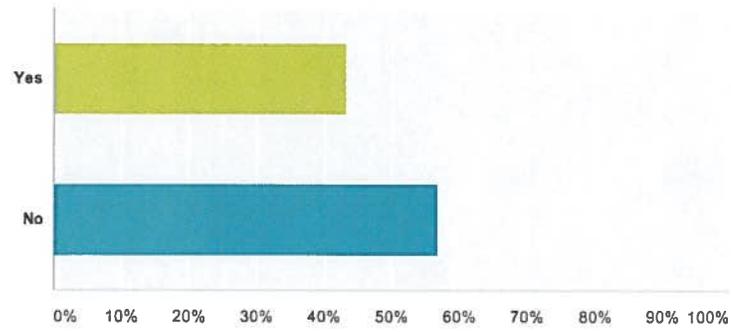
Answered: 181 Skipped: 4



	NOT	1	2	3	4	5	VERY	Total	Average Rating
Loss of orchards and farmland	0.55% 1	2.76% 5	3.31% 6	9.39% 17	15.47% 28	32.04% 58	36.46% 66	181	5.78
Preserving the towns rural character	0.55% 1	2.76% 5	0.55% 1	7.18% 13	15.47% 28	34.25% 62	39.23% 71	181	5.94
Shrinking wildlife habitat	2.21% 4	2.76% 5	3.31% 6	9.39% 17	17.13% 31	26.52% 48	38.67% 70	181	5.71
Too much housing development	2.79% 5	3.35% 6	3.35% 6	15.08% 27	17.32% 31	26.26% 47	31.84% 57	179	5.47
Lack of adequate recreation facilities	5.06% 9	6.18% 11	8.43% 15	16.29% 29	22.47% 40	23.03% 41	18.54% 33	178	4.88
Pollution of water bodies and wetlands	1.12% 2	3.91% 7	1.68% 3	6.70% 12	12.85% 23	27.93% 50	45.81% 82	179	5.93

**Q13 Do you know what an Agricultural Preservation Restriction (APR) is?**

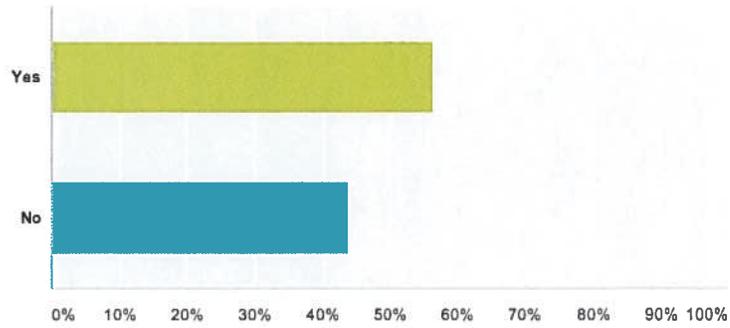
Answered: 183 Skipped: 2



Answer Choices	Responses
Yes	43.17% 79
No	56.83% 104
<b>Total</b>	<b>183</b>

**Q14 Do you know what a Conservation Restriction (CR) is?**

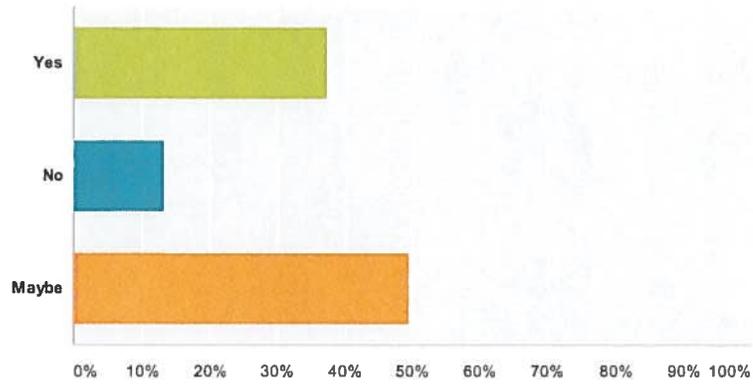
Answered: 181 Skipped: 4



Answer Choices	Responses	
Yes	56.35%	102
No	43.65%	79
<b>Total</b>		<b>181</b>

**Q15 Would you volunteer to maintain conservation land or trails?**

Answered: 182 Skipped: 3



Answer Choices	Responses	
Yes	37.36%	68
No	13.19%	24
Maybe	49.45%	90
<b>Total</b>		<b>182</b>

**Q16 Any other comments, concerns, or suggestions are appreciated.**

Answered: 29 Skipped: 156

# Town of Pepperell Open Space and Recreation Plan Survey 2014

## Q16 Any other comments, concerns, or suggestions are appreciated.

Answered: 29 Skipped: 157

#	Responses	Date
1	It is a good time to propose the Community Preservation Act - to raise money for open space purchases!	6/27/2014 1:43 PM
2	It is a good time to propose the Community Preservation Act - to raise money for open space purchases!	6/27/2014 1:43 PM
3	who maintains the orchards on Heald St? Does the town own it?	6/25/2014 2:51 PM
4	STOP THE PIPELINE	6/13/2014 12:58 PM
5	It's incredibly ironic that you are hosting this survey. Set aside MORE land? So Kinder Morgan can have that, too? We need to protect the land we have now from the direct assault that is upon it.	5/23/2014 12:18 PM
6	See above	5/12/2014 1:46 PM
7	Not sure how to answer question 12 - how important they are to me in terms of my principles and values, or how significantly they impact me personally right now? Also how do I answer questions about donating land if I don't own any land? (I rent.)	5/11/2014 6:07 PM
8	depending on my schedule I would volunteer when I could to help maintain conservation land and trails	5/11/2014 9:29 AM
9	We are both AGAINST the 2014 Tennessee Gas Pipeline coming anywhere near Pepperell or Massachusetts!	5/8/2014 12:42 PM
10	Pepperell does not consistently plan, develop, manage and maintain the facilitating infrastructure of its conservation and recreation areas. For instance, the Prudence Wright Overlook's management as an MF&W-owned conservation site. The river embankment side of the overlook parking lot has evidence of regular use as a launch for canoes/kayaks and the Covered Bridge committee has acknowledged fishing and other activities on that embankment. There is no indication what the intended purpose/appropriate treatment of that embankment is - whether the embankment should be kept stable or whether using it as a launch is safe and appropriate use. It is not clear who the active management authority is for the site.	5/6/2014 11:59 AM
11	I am retired but currently very ill. hopefully in a year or less I would like to be more involved in conservation efforts.	4/29/2014 1:55 PM
12	Please stop building so many duplex and multi-family houses in our town especially near the rail trail heads these houses are NOT maintained and are a real eye sore for all of us who live around them,	4/28/2014 9:33 PM
13	Already volunteer to help with. Observation land and raise money for rec activities ties.	4/28/2014 9:13 PM
14	I live here because of the commitment to rural character. I am deeply interested in local, sustainable food production and also in preservation of habitat.	4/26/2014 10:06 AM
15	nice questionnaire	4/24/2014 2:48 PM
16	We moved to Pepperell from Vermont because of the natural beauty of this area. The riverways and bike trails are gorgeous. I'd like to see continued work towards creating more natural beauty for the residents. It creates a spiritual experience not experienced by any building or block of pavement. What is the future plan for the parcel on Mill Street? It would be wonderful to see that space developed into a park.	4/14/2014 10:58 AM
17	How about allowing landowners to purchase conservation land to raise funds for other use?	4/12/2014 8:23 AM
18	What are the terms of the grant? How much open land already exists and is zoned as APR or CR in Pepperell?	4/12/2014 8:18 AM

## Town of Pepperell Open Space and Recreation Plan Survey 2014

19	I am not concerned with houses being built in pepperell but it should be kept to the town 1.8 acre rule. I see so many house being shoved into a tiny space because the rest of the land associated with it is unbuilt able wetlands.	4/11/2014 8:22 PM
20	Too bad Pepperell did not curb growth in the past. The wetlands and wildlife habitat have upscale homes on them now.	4/11/2014 1:44 PM
21	We do not need more "play" areas". We need more respect for our use in nature. Also, what about conserving areas so small wood birds have a place to nest??/ you do not seem to now.	4/11/2014 1:13 PM
22	We can easily adapt what we have to be more efficient in many ways.	4/11/2014 1:11 PM
23	I am most concerned with protecting wildlife and open space. Hunters are given too many privileges to indulge their hobby while I am in fear for my life if I take a walk in the woods in the fall.	4/9/2014 3:01 PM
24	Would like to have group trail walks, or beginner training in reading trail maps- anything similar	4/9/2014 10:20 AM
25	The Town Forest is in terrible condition as a result of the recent logging. I have been personally trying to improve things but it is more than a one-man job.	4/8/2014 8:11 PM
26	Glad to have participated in this survey	4/6/2014 7:36 AM
27	Pepperell is a beautiful town because of its open space and farms. We need to preserve our town's character by protecting the open space and farms that are left.	4/5/2014 9:11 AM
28	Ensure there remains an allowance for hunting on conservation lands.	4/2/2014 9:09 PM
29	I answered "maybe" in volunteering time mainly because of time commitments. As it is, I always pickup trash whenever I see it. Many in my part of town probably see me during the spring/summer/fall picking up trash along Chestnut/Wheeler/Haynes/Cranberry area. We have a great rural setting and it's shameful the amount of trash that gets tossed out car windows and left at conservation areas.	3/28/2014 9:58 AM

**APPENDIX C – Healthy Chapter**

“Healthy Living for Older Adults”  
Healthy Chapter Survey

# Chapter\_\_: Achieving Healthy Living for Older Adults

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## Introduction

Every community should be a place where people of all ages and abilities can live as long as they'd like. Too often, however, individuals find that the community in which they have lived for years no longer meets their needs. Promoting active living can make a community more livable for residents of all ages, reduce costs associated with social services and health care, and yield a range of other social and economic benefits. Promoting active aging depends on a community's ability to provide safe and walkable streets, a range of transportation options, and land use patterns that permit easy access to services and amenities.

Focusing on active living will help redefine what it means to retire and grow old. Rather than regard aging as simply a social services issue, communities now have an opportunity to strategically approach aging as a resource issue, by addressing the challenge of allocating the resources needed to ensure a high quality of life and by valuing older adults as resources themselves.

This section of the Open Space & Recreation Plan focuses on identifying and addressing changes that can help the Town's older population maintain a healthy lifestyle. The goal of the chapter is to establish policies and practices that make Pepperell an age-friendly community. This chapter recognizes that:

- Regular physical activity can improve the health and vitality of an aging population;
- The most important desire of older adults is to remain independent and physically active;
- An active aging population requires fewer support services and is more likely to contribute time and social capital to the benefit of the community; and
- A focus on active aging provides an effective lens through which the Town can assess its ability to respond to the needs of its older residents, which will benefit people of all ages.

This chapter has been funded through a grant to the Town of Pepperell from the Massachusetts Association of Health Boards and the Mass In Motion program.

## The Connection between Community Design and Healthy Aging

Common changes experienced as part of the aging process may include the following:

- Reduced muscular movement and changes in posture;
- Impairment of vision (including sensitivity to glare, diminished depth perception, and difficulty perceiving colors) and hearing loss;
- Loss of balance and stability;

- Difficulty navigating and orienting oneself;
- Impaired judgment, reaction time, and ability to interpret changes in the environment;
- Sensitivity to extreme temperatures and weather conditions;
- Diminished endurance;
- Increased risk of chronic disease;
- Increased fear related to personal safety (e.g., fear of falling, crime, etc.); and
- Depression resulting from isolation and physical issues.

An understanding of these changes is particularly important when considering the built environment for an aging population. Community design and the built environment have a significant impact on overall health and well being. Healthy community design can promote good health by:

- Increasing physical activity;
- Reducing injury;
- Increasing access to healthy food;
- Improving air and water quality;
- Minimizing the effects of climate change;
- Improving mental health;
- Strengthening the social fabric of the community; and
- Providing equitable access to employment, education and health care.

Regardless of an individual's choice of activity, the goal of active living is to accumulate the recommended 30 minutes of physical activity each day. The built environment presents opportunities and barriers for residents interested in participating in physical activity. Research performed by the Centers for Disease Control and Prevention has shown that the major deterrents to exercising are the lack of facilities and infrastructure (e.g. sidewalks, parks, and open spaces) and fears about safety.<sup>1</sup>

Pepperell's population is aging. In 2010, 50% of Pepperell's population was 40 years of age or older, with the 40-59 age cohort representing 37% of the total population. Between 2000 and 2010, the largest increase in age groups was between the ages of 20-24 and 60-74, which increased by 49% and 53% respectively. Between 2020 and 2035, the 75+ age group is expected to grow the most – increasing by an additional 137%. Residents aged 60 and above are projected to increase by 47% from 2020 to 2035.<sup>2</sup>

There is no "one size fits all" approach to community design that will meet the needs of all older adults. While the Town's demographic is changing rapidly, the built environment tends to change slowly and incrementally. A proactive community will avoid undesirable consequences such as reduced quality of life for older residents, deteriorating health outcomes, decreased independence, reduced life expectancy, increased health costs, and higher demand on service providers and family care givers.

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<sup>1</sup> R, Jack et al, Healthy Environment: The Impact of the Built Environment on Public Health, Centers for Disease Control and Prevention, 2011.

<sup>2</sup> Pepperell Affordable Housing Production Plan – 2014-2018, Northern Middlesex Council of Governments, 2014

As people age, the built environment becomes increasingly important in their day-to-day lives. An older person's daily travel radius begins to shrink, and if this person has diminished physical capacity, barriers within the built environment further inhibit the travel radius. The separation of land uses into residential and commercial districts has made life particularly challenging for these individuals. Allowing for mixed land uses is one step in transforming a community in such a way that older adults can choose to bike, walk, use a wheelchair or other assistive device to access basic services.

Older adults overwhelmingly prefer to age-in-place by staying in their homes or community. Access to services, public transit, open space, and amenities are in demand. To address the needs of its senior citizens the Town needs to consider the thoughtful placement and planning of housing and amenities for all age groups.

## Transportation and Healthy Aging

Being able to get around using the means of transportation one desires is a fundamental aspect of healthy aging. Transportation links older adults to essential goods and services and to social interaction with family and friends, and it also provides an element of independence that is important to physical and emotional well-being. For the older adults who are not licensed to drive (12% of people 65-69 and 52% of those age 85 and over<sup>3</sup>), walking or public transportation may be the only transportation options available. Older drivers average six trips per week outside their homes, while non-drivers average only two trips.<sup>4</sup> This reduction may have a significant impact on social connections and lead to depression and other mental health issues.

Walking and/or wheelchair use for daily activities is a valuable way to get recommended daily exercise. Walking has numerous health benefits such as:

- Improving blood pressure;
- Reducing the risk of heart disease;
- Alleviating depression; and
- Significantly reducing the risk of Alzheimer's.

However, walking is more dangerous for older adults than for younger residents. Older adults are more likely to be hit by automobiles, and are more likely to die as a result of such accidents. People age 70 and over comprise less than 10% of the nation's population but account for 18% of pedestrian deaths.<sup>5</sup> Overall, the elderly may be fifteen times more likely to be injured or killed as pedestrians than as drivers.<sup>6</sup> In addition, injuries from falls are a leading cause of death in older adults. Streets, curbs and sidewalks that have uneven surfaces, cracks, grade changes

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<sup>3</sup> Federal Highway Administration, Distribution of Licensed Drivers by Sex and Age, Table DL-20; <http://www.fhwa.dot.gov/policyinformationstatistics>

<sup>4</sup> Livable Community Indicators for Sustainable Aging in Place, MetLife Mature Market Institute, 2013.

<sup>5</sup> Sandra Rosenbloom, *The Mobility Needs of Older Americans: Implications for Transportation Reauthorization*, The Brookings Institution.

<sup>6</sup> Deborah Howe, *Aging as the Foundation for Livable Communities*, Routledge, 2012.

and tripping hazards can present a significant health risk for a community's senior population. Enhancing transportation requires community design improvements to help everyone, including older adults, stay active and healthy in a safe manner.

## Developing a Healthy Chapter through Community Outreach

Community engagement is a powerful vehicle for bringing about changes that improve the health of a community and its residents. For many, the connection between the built environment and personal health may not be readily apparent. A shared vision of a healthy community must take root before it can be cultivated. Creating and sustaining a healthy community requires a bottom-up approach. Community members must identify areas of need, help set priorities, and take part in implementation.

Older adults—with their personal expertise on the improvements that can impact their daily lives—can be an especially valuable resource. Older residents can help identify key priorities within a community and can call attention to nuances at a neighborhood level that a local official might otherwise overlook. In particular, those utilizing the Senior Center and members of the Council on Aging can offer tremendous insight into the needs of older adults in the community.

A public forum was held at the Pepperell Senior Center on April 22, 2016 to gain an understanding of the needs, concerns, obstacles and successes for older adults, in terms of being physically active within their community. The attendees were asked to identify issues that are important to them, outline the current obstacles to being physically active, and to outline the positive aspects of being an older adult in Pepperell. The responses were recorded on flip charts, and following the end of the discussion participants were asked to use color coding to identify the issues they felt were most important.

The outcome of this session identified the following positive aspects of being an older adult in Pepperell, in order of priority:

- The hiring of the new Senior Center Director has led to very positive changes in Senior Center programming;
- Pepperell has one of the most active and well-run Senior Centers in the area; and
- Older town residents are pleased that their voices are heard in Town Hall, and that the Town Administrator and Board of Selectmen are responsive and consider their concerns.

The older adults participating in the session also identified the following as changes that would improve their quality of life and allow them to be more active within the community:

- Modernize senior housing, which is a responsibility of the Housing Authority;
- Enact and enforce a leash law;
- Address curb height issues within Railroad Square;
- Address issues of pedestrian safety through improved crosswalks and signage, particularly in the vicinity of the rotary;

- Construct a pool that could be used by town residents, including seniors;
- Expand the Senior Center;
- Educate residents on tick borne and mosquito transmitted diseases, and provide guidance on prevention;
- Develop and publish a map, pamphlet and guidebook showing the location of Conservation land and walking/hiking trails;
- Address the condition of sidewalks and develop a plan to improve maintenance;
- Provide restrooms on the Nashua River Trail;
- Improve access to Town Hall for seniors and those with disabilities;
- Provide additional transportation options for older adults;
- Create an education initiative for users of the Nashua River Trail emphasizing safety rules and courtesy;
- Improve the Lowell Street intersection to enhance safety for pedestrians and motorists;
- Increase police enforcement in a positive fashion, reminding residents and visitors of the laws pertaining to pedestrian, bicyclist and motorist safety;
- Install benches in the vicinity of Lorden Hardware, at the recreation fields, in Railroad Square, along Main Street, and along the Nashua River Trail, so that older adults will have places to rest while walking;
- Remove poison ivy from the edges of sidewalks; and
- Pick up trash along the Nashua River Trail, and remind users not to litter through signage and other educational opportunities.

## Town Staff Input

In addition to the input received through the public process, town staff and administration were asked to respond to a written survey. A total of sixteen responses were received from the following departments:

- Police Department;
- Fire Department;
- Water;
- Wastewater;
- Public Works;
- Town Clerk;
- Emergency Management;
- Board of Health/Public Health/Nursing;
- Treasurer/Collector;
- Planning Board;
- Recreation Commission;
- Council on Aging; and
- Conservation Commission.

Of the town departments responding, eleven offer services for older adults, including:

- Absentee ballots;
- Exercise classes/group fitness;
- Health lectures;
- Fuel assistance;
- SNAP/food stamps;
- Friendly visitor or phone calls for shut-ins;
- Mobile library service;
- Salvation Army extended service;
- SHINE health care assistance;
- Service referrals;
- Meals on Wheels;
- Support groups;
- Transportation for medical and shopping trips;
- Immunization clinics;
- Visiting nurse services;
- Community outreach and health education;
- Monthly well adult clinics, offering health screenings and resource referrals;
- Case management, disease surveillance and investigation;
- Replacement of smoke and carbon monoxide detectors at no charge;
- Triad officer (Police Department);
- Archery;
- Quilting;
- Trail network maintenance and trail maps;
- Breakfast with the Birds (Conservation Commission); and
- Organized hikes and walks.

Some town services, such as the Flu Clinic and Well Adult Clinic are offered by the Board of Health, while many others are offered by the Council on Aging, the Town Clerk, the Recreation Commission, the Conservation Commission and the Police and Fire Departments. Most of these services are available to residents at no cost.

Each town department responding to the written survey was asked to identify the town services that most need improvement in order to meet the needs of residents over age 65. In order of priority, the following services were identified as needing improvement:

- Transportation options (11 responses)
- Enhanced home health services (9 responses)
- Elder care options (7 responses)
- Counseling/mental health/support groups (6 responses)
- More affordable/better housing (4 responses)
- Road safety (3 responses)
- Services for the disabled (3 responses)

- Road maintenance (2 responses)
- Intergenerational problems (2 responses)
- Availability of employment (2 responses)
- Nutrition education/counseling (2 responses)
- Better/more recreational facilities (2 responses)
- Improved veteran services (2 responses)
- Better/more healthy food choices (2 responses)
- Healthy family activities (1 response)
- More vibrant downtown (1 response)

Each department was asked to indicate the walking distance from Main Street (in Pepperell's Downtown) to the department's office. With the exception of the Police Department, the walking distance is at least one mile, and in the case of the Public Works and Water Departments, the walking distance is over three miles.

## How Can Pepperell Address the Needs of Older Adults Through Its Policies and Practices?

Everyday decisions by town staff and officials can impact the extent to which Pepperell can support active living. Local leaders are uniquely positioned to support active living by coordinating decision making across departments, by promoting awareness of active living among town officials and residents alike, and by developing and implementing community plans, strategies, and policies that support active living. Policies and programs related to health, housing, planning, transportation, economic development, and recreation impact residents' abilities to remain active on a regular basis.

### Master Plan

Ideally, neighborhoods and community services should be linked by transportation services and a safe pedestrian network. In a small, rural community such as Pepperell, this can be a challenge given the spread out nature of land uses and the limited resources available. However, every community undertakes a number of planning and policy level activities which can serve as a vehicle for effecting the changes needed to create an age-friendly community. For example, the recommendations formulated through this chapter should be considered when the community revisits its Master Plan. The Master Plan can help shape healthy design through protection and creation of open space, zoning and land use development regulations that increase walkability, and transportation network improvements. In

Pepperell's current Master Plan acknowledges the importance of its aging population through its Visioning Statement:

*A family-oriented community with an abundance of open space and sensitive natural resources, the Town of Pepperell enhances its rural small-town character, municipal infrastructure and services, and housing options for families and its aging population by channeling growth into village settings near municipal facilities and services.*

updating its Master Plan, the Town should ensure that the Master Plan Committee includes a health advocate and an older adult.

## **Open Space and Recreation Plan**

This Open Space and Recreation Plan Update provides a timely opportunity to address preservation and linkage of open space, greenways, trails, and parks. The Vision Statement outlined in the Open Space and Recreation Plan contains many elements that benefit healthy living for older residents, as well as for others residing in Pepperell (see sidebar). Establishing connections within the town's greenway and trail network will serve to promote improved public health by encouraging walking and hiking. Access to parks, trails and other natural spaces is an important factor in providing accessible and inclusive recreation and leisure opportunities for older people and people with disabilities, influencing the development of healthy life choices. Green spaces are also important in fostering a connection between community residents and the natural environment, thereby creating a healthier and more livable community.

Simple visual exposure to natural beauty is calming, and integration of green spaces and biotic communities creates positive psychological effects, such as lowering reported levels of stress. Stress has known negative impacts upon human health; these are most tangibly evidenced in physical symptoms such as headaches, upset stomach, elevated blood pressure, chest pain, and problems sleeping.

Access to affordable, inclusive recreational opportunities is important in addressing isolation and in fostering the physical and psychological health and well-being of older people. Social interaction is critical at all ages and stages of life, but is particularly important as one grows older. Isolation can dramatically increase physical problems and impact mental health. It is critical that opportunities for significant social interaction be provided. Accessible recreation promotes community integration by encouraging shared activities among different groups, and a mutual exchange of ideas and socializing between residents of all ages.

Pepperell has made significant gains in the amount of open space preserved. The Town continues to work with neighboring communities and land protection organizations to expand its trail network and establish regional connectivity. The map on page

### ***Open Space and Recreation Plan Vision Statement***

#### ***In the future Pepperell will:***

*-Continue to provide its citizens a healthy place to live*

*-Preserve and protect its natural resources and its rural, small town character*

*-Continue efforts to expand its protected open space and recreational opportunities to keep pace with population growth*

*-Provide access to existing community lands and programs to all citizens*

*-Foster a cooperative approach between community groups and with neighboring towns and other organizations in planning and working for open space and recreation needs.*

10 shows the existing trail network, as well as the location of all sidewalks and existing pedestrian benches. A trail map and more detailed information regarding specific trails is also available on the Conservation Commission page of the Town's website. The most extensive trail is the eight-mile Jeff Smith Trail which is included in the Appalachian Mountain Club guide. The Conservation Commission and the Nashoba Conservation Trust (NCT) are currently developing a guidebook containing detailed information on the properties and trails that are under the control of the Town and NCT.

### **Site Plan Review and Subdivision Regulations**

The Town could modify its Site Plan Review and Subdivision Regulations to ensure that proposed projects provide safe access and internal circulation for older adults. The Americans with Disabilities Act (ADA) sets standards for physical accessibility of buildings and spaces that must be met by most public and commercial projects. However, there are not such standards for private residential projects. Modifications to residential design that would serve to make a project aging friendly include:

- At least one zero-step entrance (e.g., making sure the front door is at ground level);
- Doors and hallways with at 32 inches of clear passable width; and
- A ground floor bathroom that is accessible by wheel chair.

To address the needs of older adults, Site Plan Review can also include improvements to site layout, sidewalks (including ramps and tactile strips), bicycle accommodations and pedestrian amenities, such as benches for resting and street trees to provide shade. While some communities have provided flat benches without backs and "walls" designed for sitting in public spaces, benches with backs are most appropriate for older adults. Sidewalks should have a minimum 4-6 foot pedestrian clearway (the area in which a person is free to move without obstacles such as signs and utility poles). Studies show that vehicle-pedestrian traffic accidents are more than twice as likely to occur in places without sidewalks, and more than 40 percent of pedestrian fatalities occur where no crosswalk is available.<sup>7</sup> The Town's Master Plan makes a number of recommendations for improving the sidewalk standards within the Town's Subdivision Regulations.

Approximately 14% of people over age 65 experience some vision issues. This increases to 23% for those over age 85.<sup>8</sup> These vision issues lead to a need for better lighting in dark situations, increased sensitivity to glare, and decreased perception of contrast. New construction can be designed to assist in mitigating these challenges by providing a large number less powerful lighting fixtures, rather than a small number of very powerful fixtures. In addition, fixtures should be placed and focused so as to minimize glare. Changes in level, such as from a parking lot to a walkway, should be highlighted with contrasting colors and large print.

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<sup>7</sup> *Ten Principles for Building Healthy Places*, Urban Land Institute, 2013.

<sup>8</sup> *Older Americans, 2012: Key Indicators of Well-being*, Federal Interagency Forum on Aging Related Statistics, 2012

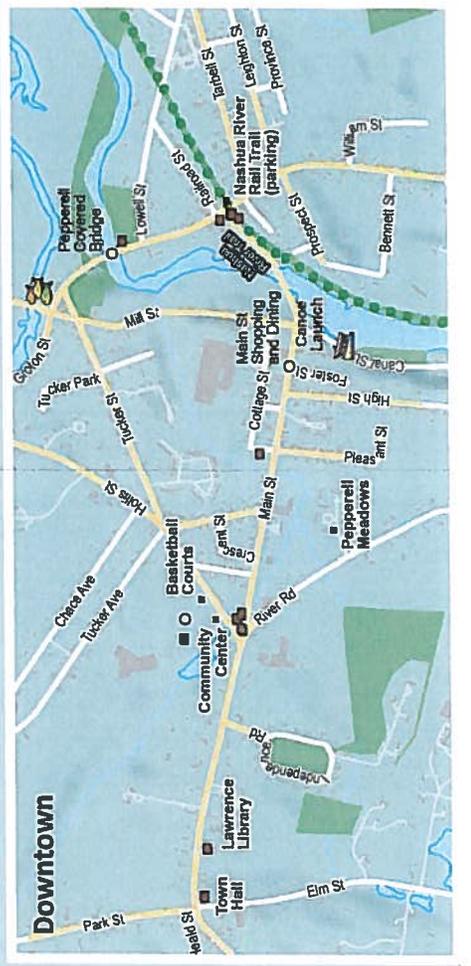
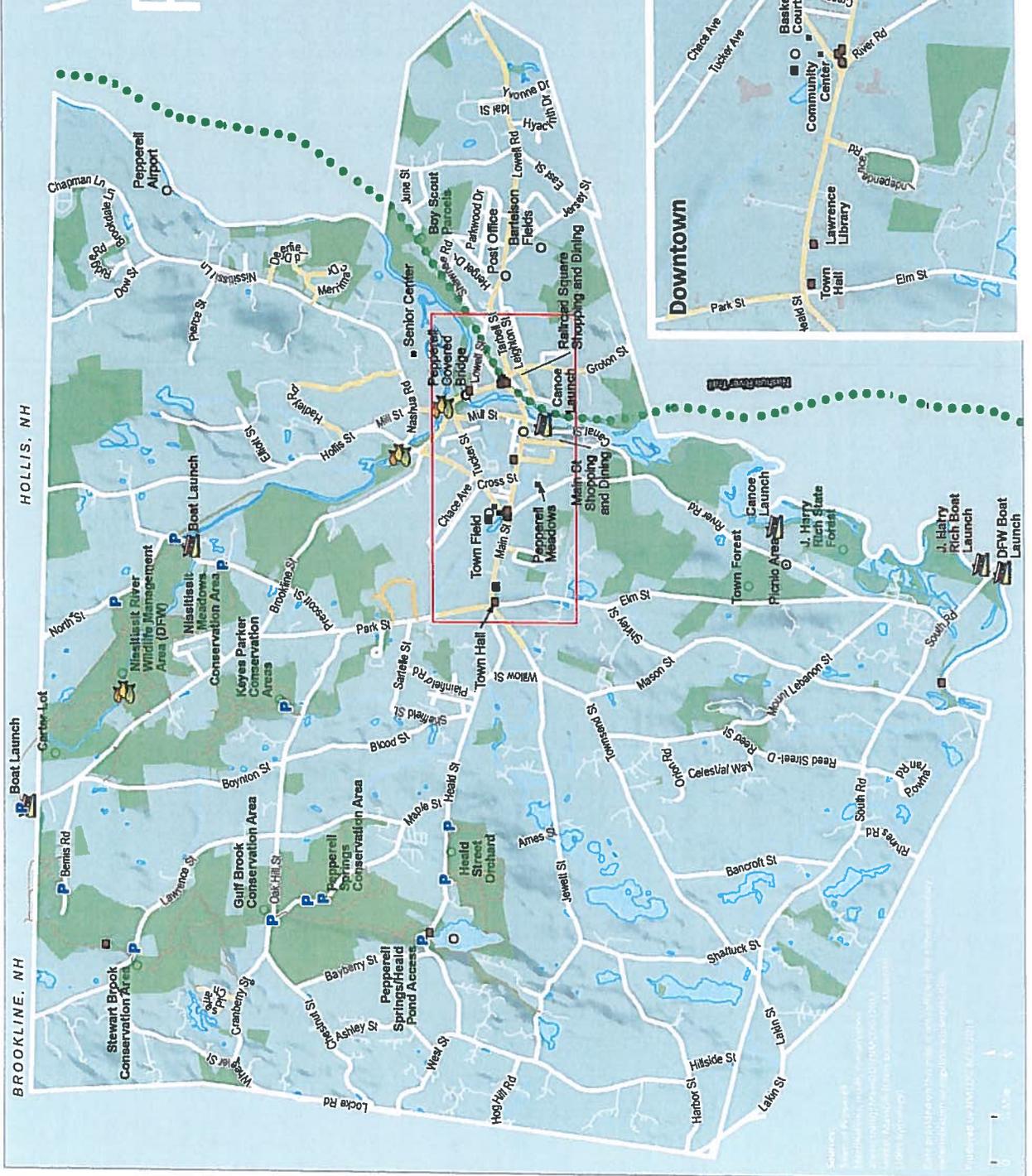
# Walk and Bike Pepperell

Residents may get more trail information at [town-pepperell.ma.us](http://town-pepperell.ma.us)

## Walking Distances:

- Senior Center to Railroad Square: 0.8 mi.
- Town Hall/Lawrence Library to Main Street Shopping and Dining: 1 mi.
- Main St. Shopping and Dining to Railroad Square: 0.25 mi.
- Post Office to Railroad Square: 0.6 mi.

- P** Trail Parking
- Bench
- Nashua River Rail Trail
- Road with Sidewalk
- Boat Launch
- Pepperell Trails\*  
\*Trails on Private Property  
For Information Only
- Fishing Area



Source: Town of Pepperell  
Map updated 12/2011  
Map data © OpenStreetMap contributors, Imagery © Mapbox, © Mapbox, © OpenStreetMap contributors, Imagery © Mapbox, © OpenStreetMap contributors, Imagery © Mapbox  
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To meet the needs of older drivers site plan review should encourage logical parking lot configurations with directional arrows and high contract signs with large lettering. Walkways for pedestrians should be protected from vehicle traffic with well-marked, visible crosswalks. Benches or other resting areas should also be provided within the site.

As pointed out in the Town's Master Plan, the zoning bylaw does not reflect the town's stated goals of retaining a traditional development pattern and preserving its character. Instead current zoning requirements have led to sprawl, loss of farm land and inefficient use of land, as village-style development is not permitted in most zoning districts which require a minimum two-acre lot. In addition, dwelling units above the first floor are only allowed in the Commercial district, which comprises a very small area of Town. The Master Plan encourages higher density mixed uses in other appropriate locations to accommodate the housing and other needs of older adults.

### **Complete Streets Policy**

The Town could adopt a Complete Streets policy to ensure that future improvements to its roadway network accommodate pedestrians and bicyclists, as well as motor vehicles. Incorporating Complete Streets into local standards governing the construction and repair of local roadways can create a safer and more inviting transportation network for motorists, pedestrians and bicyclists. While the inclusion of "reasonable provisions" for Complete Streets planning is required by state law (M.G.L. Chapter 90E), implementation has been gradual with improvements only occurring as roads are reconstructed or repaved. Recently, MassDOT created a competitive grant program to fund Complete Streets projects in communities that adopt a Complete Streets policy and develop a Complete Streets Implementation Plan.

### **Housing Issues**

The Town's Housing Production Plan, completed in 2014, contains a number of planning recommendations that benefit healthy community planning, including consideration of inclusionary zoning, Smart Growth Overlay zoning, mixed use development, and possible adoption of the Community Preservation Act. Mixed use development that allows destinations to be located in proximity to housing is one of the most effective strategies for promoting healthy aging.

Communities should make provisions for ensuring a continuum of housing options to support older adults ranging from those who are fully independent to those requiring progressively more assistance in daily life. Policies and programs should promote affordability, safety and accessibility, incorporate enabling design-based home and energy efficiency modifications, and foster upkeep and sustainability of the housing stock. The design of homes should be adaptable and allow different generations or household types to live in a single home, as well as allow for technologies, devices and in-home management systems that optimize active aging.

During the input session performed at the Senior Center, some participants indicated that the Senior Housing in Pepperell needs to be improved. Any such improvements are the responsibility of the Housing Authority. In addition, a need for more affordable housing was identified by four town departments through the survey conducted for this project.

## **Access to Healthy Food**

Health, physiologic, and functional changes associated with the aging process can influence nutrition needs and nutrient intake. The practice of nutrition for older adults is no longer limited to those who are frail, malnourished, and ill. The population of adults older than age 60 years includes many individuals who are living healthy, vital lives with a variety of nutrition-related circumstances and environments. Access and availability of wholesome, nutritious food is essential to ensure successful aging and well-being. Local strategies that promote access to coordinated food and nutrition services are essential to maintain independence, functional ability, disease management, and quality of life.

In Pepperell, the Council on Aging provides assistance to older residents in the area of food security through the SNAP program and Meals on Wheels. The Agricultural Advisory Board coordinates a Farmer's Market that is held on Town Field every Saturday during the summer and fall months. In addition, there is a full service grocery store located on Main Street, and there are several farm stands in town, at least one of which is opened year round. Input provided by the Pepperell Senior Center forum participants indicates that readily available transportation to the grocery store, farmer's market and local farm stand is the primary challenge to securing fresh and wholesome food for some older adults.

The Board of Selectmen leases 36 acres to Dragonfly for the cultivation of organic produce. In addition, the town has number of agricultural operations that produce dairy and meat products, as well as vegetables and fruit. Pepperell could create a community garden for those residents who would like to grow their own food but do not have a plot of land that is suitable for agriculture.

## **Municipal Policies and Priorities**

Municipalities should set the example by establishing local policies that encourage healthy community design, such as installing benches, water fountains, street trees, and bicycle racks at municipal facilities, within the business district and at municipal parks and open space areas. Municipal policies can require universal design for municipal facilities such as schools, senior centers, town offices and public spaces. The Town should ensure that all roadway design standards comply with ADA standards and meet the needs of people of all abilities.

Investments in public infrastructure to improve existing commercial areas, such as along Main Street where residents can park and walk to multiple destinations, are particularly important to older adults. Possible improvements include improved and extended sidewalks, installing benches, street trees, and public restrooms. Poorly maintained sidewalks are a hazard for all, and tripping and falling is a major concern for many older adults. Funding for regular repairs is needed to address cracking and other distress that results from age, frost, and tree roots. Some communities choose to create a Downtown Improvement District, as a way to fund such improvements.

Improvements to the built environment can take years to bring to fruition and require substantial capital investment; programming is often a quick and inexpensive measure that can produce

instant results. Simple programming, such as street festivals, health fairs, and community events, can get people outside and into the community.

## Public Education

Even with appropriate active living opportunities in place, older adults may not take advantage of these opportunities unless they are well informed about available resources and the benefits of physical activity. For example, a survey conducted by the Town in 2014 indicated that access to existing community lands and programs could be improved through education and increased promotion.

When promoting active living, the most effective messages are frequently those that emphasize the social benefits of physical activity such as “independence,” “fun,” “vitality,” and “being with other people.” To educate residents and promote general awareness of active living, the Town could undertake the following:

- Market active living to older adults through the Senior Center, newspapers, local cable TV, and other venues;
- Continue to partner with the Council on Aging, nonprofit service providers, and other community organizations to promote physical activity;
- Organize physical activity programs such as senior walking groups, community-wide walking programs, and community gardening;
- Advertise programs and activities through the Recreation Department’s Activity List and on the Town’s website;
- Print trail/walking/bicycling maps and brochures;
- Post trail maps on kiosks at trailheads; and
- Educate older residents on safety and security issues through the Police Department.

## Recommendations

Communities need to design policy and planning practices to address the needs of older adults, and take advantage of the contributions of older adults in all community contexts. Inadequate physical design must be recognized as a barrier and addressed to ensure segments of our society are not excluded. Older adults have the skills, connections, and time to put toward helping their communities and are looking to keep active and remain engaged in civic life. Communities that incorporate opportunities and services for older adults in all aspects of planning will allow older adults and their families to engage more fully in community and economic activities. Enabling design standards which respect the varied needs and abilities of older adults can decrease demand for services, increase housing choice, and increase level of functioning, independence, physical activity, social interaction, community involvement, and civic and economic engagement.

The recommendations put forth in this chapter to promote healthy living for Pepperell's older adult population are summarized below:

1. Mix land uses, where possible, to create walkable neighborhoods (currently mixed use zoning can only be found on the former mill site);
2. Enact a leash law, to make walking less intimidating for older adults concerned about unleashed dogs;
3. Work with non-profit partners to provide enhanced home health services and elder care, and to provide additional counseling and mental health support groups;
4. Consider healthy community design in updating the Town's Master Plan, and include a health advocate and an older adult on the Master Plan Committee;
5. To the extent possible, continue to interconnect the town's open space parcels, trail system and sidewalk system to create an extensive active transportation and recreation network;
6. Work with non-profit land trusts to increase the inventory of protected open space in Pepperell and establish trail connections into neighboring communities;
7. Educate residents on avoiding tick borne and mosquito transmitted diseases;
8. Publicize the availability of the Town's trail map and guide, and make trail maps available at the trailhead;
9. Educate users of the Nashua River Trail on littering and the safety and courtesy rules for using the trail;
10. Provide restroom facilities for users of the Nashua River Trail;
11. Provide positive police enforcement, reminding residents and visitors of the law pertaining to pedestrian, bicyclist and motorist safety;
12. Install additional benches in the vicinity of Lorden Hardware, at the recreation fields, along Main Street, and along the Nashua River Trail;
13. Provide affordable, inclusive and accessible recreation and transportation opportunities for older adults and those with disabilities, and improve access to Town Hall;
14. Modify the Town's site plan review process and subdivision regulations to address the needs of older adults by focusing on universal access issues, site layout and circulation, pedestrian and bicycle safety and amenities, streetscaping, ADA compliance, sidewalk standards and lighting;
15. Evaluate the condition of existing sidewalks and crosswalks and address uneven surfaces, cracks tripping hazards and grade changes, and remove poison ivy from the sidewalk edges. The following problem locations for pedestrians were noted by residents:
  - curb height in Railroad Square
  - the need for improved crosswalks and signage in the vicinity of the rotary
  - pedestrian safety at the Lowell Street intersection
16. Extend the Town's sidewalk network, as funding becomes available, and develop a maintenance plan for this infrastructure;
17. Adopt a Complete Streets policy, develop a Complete Streets Implementation Plan, and participate in MassDOT's Complete Street grant program;

18. Implement the recommendations in the Town's Affordable Housing Production Plan and work with the Housing Authority to address the modernization of senior housing;
19. Work to address transportation options for older adults, through the LRTA, COA and private transportation providers;
20. Consider the needs of the Town's growing older adult population in assessing the space and programming needs at the Senior Center;
21. Consider developing a community garden for older adults and other residents who may be interested in growing their own food;
22. Lead by example and establish municipal policies that encourage healthy community design, such as installing benches, water fountains, street trees, public restrooms and bicycle racks at municipal properties and within the downtown business district;
23. Examine town event and programming opportunities for community building such as street festivals, health fairs, public safety fairs, or a fall harvest festival;
24. Market active living opportunities to older adults through the Senior Center, newspapers, local cable, the town website, the Recreation Department's Activity List, and other venues;
25. Work with the Recreation Department and the Senior Center to organize walking events such as senior walking groups and community-wide walking programs; and
26. Education older residents on safety and security issues through the Police Department.

## Conclusion

Older adults interact with the built environment in ways that reflect changing lifestyles and changing physical capabilities. Conditions such as chronic diseases and limited vision may limit mobility and create special needs. Accessible and suitable housing options allow older adults to age in place and remain in their community all their lives. Housing that is convenient to community destinations can provide opportunities for physical activity and social interaction. Communities with a safe pedestrian environment and walkable neighborhoods allow older adults to remain independent, active, and engaged. Combined transportation and land-use planning that offers convenient, accessible alternatives to driving can help the older adults reach this goal of an active, healthy lifestyle.

The health needs of the aging population go well beyond the provision of health care services and must be addressed by integrating improvement efforts at all levels, in order to provide a more cohesive and comprehensive built environment for healthy aging. Healthy communities address basic needs, promote optimal health and well-being, foster civic and social engagement and support the independence of older residents. To accomplish this a broad-based, collaborative approach is required of town policymakers and staff, service providers, businesses, non-profit organizations, individuals and families. The recommendations outlined in this section of the Open Space and Recreation Plan will move Pepperell forward in a way that benefits its aging population, as well as the overall community.



Town of Pepperell  
**BOARD OF HEALTH**  
 One Main St Pepperell, MA 01463-1644  
 (978) 433-0328  
 Email: [health@town.pepperell.ma.us](mailto:health@town.pepperell.ma.us)

Questionnaire

The Pepperell Board of Health (PBOH) is in receipt of mini-grant to develop a healthy living policy as an addendum to the Open Space and Recreation Plan. This policy will incorporate healthy choices which will allow for the promotion of public health into the built environment. This policy is geared towards the sixty-five (65) and older population, which is anticipated almost double by 2030. This policy, termed "Healthy Chapter (HC)" can direct future actions, programs and practices relative to public infrastructure, open spaces, public facilities, approval of development proposals and future community design and improvements.

Below is a brief questionnaire designed to identify potential gaps and redundancies within town departmental activities. This information will establish a baseline for the HC and will help mold future policies and actions.

\_\_\_\_\_ (Department)

1. Does your department of organization offer programs or services to residents over age 65?
  - a. If yes, please list below: \_\_\_\_\_

2. If you answered YES to Question 1, do such services or programs require a fee from participants? YES or NO
3. If you answered YES to Question 2, is there a fee waiver provision based on ability to pay? YES or NO
4. Is your building/business/facility ("site") accessible by public transportation? YES or NO
  - a. If a bus stop was put on Main St. (downtown) how far would a resident have to walk access your site? \_\_\_\_\_ miles
5. In your opinion, which of the following services most need improvement in order to best meet the needs of residents over age 65?

- |  |  |
|--|--|
| <input type="checkbox"/> Animal control  | <input type="checkbox"/> Intergenerational programs        |
| <input type="checkbox"/> Better/ more recreational facilities (parks, trails, community centers) | <input type="checkbox"/> Road maintenance                  |
| <input type="checkbox"/> Healthy family activities   | <input type="checkbox"/> Road safety                       |
| <input type="checkbox"/> Transportation options  | <input type="checkbox"/> Elder care options                |
| <input type="checkbox"/> Availability of employment  | <input type="checkbox"/> Services for disabled people      |
| <input type="checkbox"/> Enhanced home health services   | <input type="checkbox"/> Better/ more healthy food choices |
| <input type="checkbox"/> Counseling/ mental health/ support groups                               | <input type="checkbox"/> Improved Veteran Services         |
| <input type="checkbox"/> Nutrition education/counseling  |  |
| <input type="checkbox"/> More affordable/better housing  |  |

\*\*\*\*\*PLEASE RETURN BY APRIL 30, 2016 by email: [kgendron@nashoba.org](mailto:kgendron@nashoba.org) or Bd. Of Health Office at Town Hall

## **APPENDIX D – Massachusetts Natural Heritage and Endangered Species (NHESP)**

NHESP Letter from Dr. Pat C. Swain

Species List

Cold-water Fishery Resources Map

NHESP Natural Communities and Vernal Pools

BioMap 2



# Division of Fisheries & Wildlife

Wayne F. MacCallum, *Director*

April 2, 2014

Paula Terrasi  
Conservation Administrator  
Town of Pepperell  
One Main Street  
Pepperell, MA 01463

Via E-mail

Re: Open Space Plan: 03 – 11669 Town of Pepperell

Dear Ms Terrasi:

Thank you for contacting the Natural Heritage and Endangered Species Program regarding the update for the Open Space and Recreation Plan for Pepperell. Enclosed is information on the rare species, priority natural communities, vernal pools, and other aspects of biodiversity that we have documented in Pepperell. You are encouraged to include this letter, species list, appropriate maps, and the BioMap2 in the Open Space and Recreation Plan.

Based on the BioMap2 analysis and information discussed below, NHESP recommends land protection in the BioMap2 cores or protecting lands adjacent to existing conservation land – or, best, a combination of both when feasible. All of the areas discussed below are important for biodiversity protection in Pepperell.

Enclosed is a list of rare species and natural communities known to occur or have occurred in Pepperell. This list and the list in BioMap2 differ because this list and discussion include all of the uncommon aspects of biodiversity in Pepperell that NHESP has documented and BioMap2 focused on occurrences with state-wide significance. In addition, the NHESP database is constantly updated and the enclosed list may include species of conservation interest identified in town since BioMap2 was produced in 2010, such as the bats which were added to the MESA list in 2012.

In early 2013 we sent each town copies of its *BioMap2* Town Report which were developed to provide local biodiversity information to assist in conservation efforts at the town or regional level. We encourage inclusion of the town BioMap2 report and fact sheets on its components in the OSRP: they are available from <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/land-protection-and-management/biomap2/biomap2-town-reports.html> The components relevant to Pepperell are Aquatic, Forest, Vernal Pool, and Wetland (Least disturbed Wetland complexes) Cores, and, in CNL, Landscape Block, and Upland Buffers of Aquatic and Wetland Cores. The components are described in full in the BioMap2 summary report.

<http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/land-protection-and-management/biomap2/biomap2-overview-and-summary.html>

[Please note that all of NHESP's web addresses have changed; web addresses in publications from before June 2013, including inside the BioMap2 report, will not work properly.]

I encourage you to download species, natural community, and BioMap2 fact sheets from our website to include in the OSRP with the species list and BioMap2 discussion.

[http://www.mass.gov/dfvele/dfw/nhESP/species\\_info/fact\\_sheets.htm](http://www.mass.gov/dfvele/dfw/nhESP/species_info/fact_sheets.htm) and for some delisted species <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/species-information-and-conservation/mesa-list/non-listed-species-of-conservation-interest.html>

natural communities:

<http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/natural-communities/>



**Natural Heritage & Endangered Species Program**

Route 135, Westborough, MA 01581 Tel: (508) 389-6360 Fax: (508) 389-7891

An Agency of the Department of Fish & Game

<http://www.nhESP.org>

Many rare animal species currently known from Pepperell are associated with wetlands, although most of these species use upland habitat as well. One exception is Bridle Shiner, which as a fish is, of course, truly aquatic. The birds and bats are mostly found in the uplands, although the bats hunt over wetlands.

Bridle Shiners (SC) are small (<5 cm) minnows that swim in schools, going into and out of vegetation along the edges of open, clear water in lakes and ponds and slack areas of streams and rivers. They feed on small insects and other aquatic animals.

Marbled Salamanders (T) inhabit upland forest during most of the year, where they also reside in small-mammal burrows and other subsurface retreats. However, adult Marbled Salamanders migrate during late summer or early fall to breed in dried portions of vernal pools, swamps, marshes, and other predominantly fish-free wetlands. Eggs are deposited under logs, leaf-litter, or grass tussocks and hatch after being inundated by fall rains. After larvae metamorphose during late spring they disperse into upland forest. The Marbled Salamanders in Pepperell occur in an area with clustered vernal pools

Four-toed Salamanders (delisted, that is removed from the state list because they have been shown to be more common than previously thought) nest in patches of sphagnum moss that overhang streams. The young drop into the streams where they live until they become adult, at which point they move to nearby forests to live. Protecting good populations of Four-toed Salamanders will help keep them from needing the additional protections of the endangered species act. While not an obligate vernal pool species, the occurrences in Pepperell are in an area with a small cluster of vernal pools and other wetlands.

There are multiple records of uncommon species of turtles in Pepperell. Protecting all types of wetlands and their surrounding forests and other uplands enhances the habitats of all these species and others, as well as protecting water quality. All of the turtle species nest in sandy upland areas and are susceptible to becoming road kill when they move among parts of their habitats if there are there. Loss of only a few adults annually can cause populations to decline because of their having low replacement rates due to low nest and juvenile survivorship.

Blanding's Turtles (T) inhabit a mix of seasonal pools, marshes, shrub swamps, forest, and open uplands. After overwintering in the deep muds of wetlands, Blanding's Turtles move overland to vernal pools and shrub swamps to feed and mate. Loss of only a few adults annually can cause populations to decline as they do not reproduce until late in life (14-20 yrs), and have low replacement rates due to low nest and juvenile survivorship. Roads are the primary cause of adult mortality. The Blanding's Turtles in Pepperell are part of a large, important regional population, that in town are associated with a variety of wetlands.

Eastern Box Turtles (SC) spend most of their adult lives in Oak-Pine forests, but juveniles live in wetlands and adults stay around wetlands in the hottest part of the summer. In Massachusetts, the best and most viable populations of Eastern Box Turtles are in the southeastern part of the state, the population in Pepperell is scattered and not well studied.

The delisted Spotted Turtle favors wetlands and adjacent forests, and the open sandy areas for nesting. They are often associated with Vernal Pools. The population in Pepperell is in many of the same wetlands that support other turtle species.

The two state-listed birds most recently known from Pepperell, Grasshopper and Vesper Sparrows, are both grassland species that have declined with the reduction in agriculture statewide. Vesper Sparrows (T) are grassland birds whose habitats often include taller woody vegetation interspersed within the grassland. The habitats are typically dry, well-drained sites with a mixture of short grass, bare ground, and shrubs, trees, or other high structures from which males can sing, including telephone lines and poles. Grasshopper Sparrows (T) nest in dry grasslands. Natural situations include sandplain grasslands, but they have adapted well to anthropogenic habitats such as airports and landfills. They are very sensitive to changes in plant composition and respond well the effects of fire management. Grasshopper Sparrows are not currently known in Pepperell. In NHESP's 2003 letter for the Pepperell OSRP, we discussed American Bittern: the record has not been verified in Pepperell, and NHESP does not consider that species to be a part of the fauna of the town. (Not that we wouldn't be very pleased to be proven wrong and have current documentation submitted to us!)

Recently devastated by the White-Nose Syndrome, it is not clear what the future holds for any of the species of bats in Massachusetts. In Pepperell, the population of Little Brown Myotis (E) has plummeted. This bat preys heavily on flying aquatic insects and is very effective at feeding in patches of insects of the particular size range that they feed on. Forage areas include softwood regeneration areas, along forest roads, trails, streams, ponds and lakes in forest dominated landscapes. It may migrate hundreds of miles between winter and summer habitats. Known winter hibernacula include caves, abandoned mines, and hydroelectric dams. Northern Long-eared Bat (E) is also threatened by the fungal disease. This small bat with long ears hibernates in mines and caves near its summer forested habitat. They are adapted to fly and capture prey below the forest canopy, at small wetlands, and along forest edges. In summer they typically roost in clustered stands of large trees in forest areas, however human-made structures will be used. White-Nose Syndrome is widespread among bats; with the largest known bat hibernaculum in town on protected land, keeping it from being disturbed is probably the best support that can be given to the bats to allow any disease resistant individuals to survive.

Pepperell has two state-listed species of freshwater mussel and another that was recently removed from the list and remains of conservation interest. The presence of these species in streams in town confirms the importance of maintaining the clean, flowing waters for these species and others share the habitats. Brook Floater (also called Swollen Wedge mussel) (E) are small freshwater mussels that inhabit streams and rivers with low to moderate water velocities, stable substrates, low nutrients, and good water quality. They are currently known from only four water bodies in the state – Pepperell's population is very important. Creepers (SC) are freshwater mussels that inhabit low-gradient reaches of small to large rivers with sand or gravel substrates: cool to warm-water with diverse fish assemblages best support Creepers. Triangle Floaters (delisted) are commonly found in low-gradient river reaches with sand and gravel substrates and low to moderate water velocities, although they are found in a wide range of substrate and flow conditions.

Six listed and recently delisted species of dragonflies and a recently delisted species of damselfly have been reported in Pepperell. Clustered along the Nissitissit River, these species also occur in and near other wetlands around town. Although each has its own distinct habitat needs, the nymphs (young) of all are aquatic and burrow in the bottom sediments of the wetlands (types used vary by species) they prefer. Young adults of all of the species make use of surrounding upland forests to provide protection while they reach sexual maturity. Since the nymphs live in stream or lake water, as with the freshwater mussels, maintaining clean, free flowing water is important for maintaining the species.

Of the uncommon plants known from Pepperell, the rarest have not been seen in town for many years. Fogg's Goosefoot (E), an inconspicuous globally rare annual herbaceous plant that inhabits open, dry habitats, was last documented in Pepperell in 1966, despite repeated searches since then. This type of habitat has declined in recent decades as succession to forest has occurred throughout the state. Showy Lady's-slipper (E) is a large pink and white orchid that has not been seen in Pepperell for even longer. It, too, has been sought with no success. NHESP would be very pleased to receive reports of these species in town.

Wild Lupine (on the unregulated Plant Watch Listed (WL) is an herbaceous perennial of the Pea Family that has large sprays of purple flowers in early June. It grows in direct sun on dry, sandy soil in open woods and fields. It, too, has declined throughout the state as forest has reclaimed many of the former agricultural lands, and now is mostly found along edges of forests on sandy soils.

Natural Communities are recurring assemblages of plants and animals in similar chemical, moisture, geological, and topographic environments. In Massachusetts, the types are defined in the *Classification of Natural Communities of Massachusetts*, available on the NHESP website. Occurrences of uncommon types – called Priority Natural Communities - are considered to be priority for conservation. All types of natural communities provide important habitat for common and uncommon species and support the biodiversity of the town. NHESP keeps track of occurrences of Priority Types of Natural Communities, a complete list of which is on the NHESP website. One type of Priority Natural Community has been identified in Pepperell.

Sugar Maple – Oak – Hickory Forest (formerly classified as Circumneutral Talus Forest) communities are diverse forests in eastern and central Massachusetts where conditions, including nutrient richness, support Northern Hardwood species mixed with species of Oak-Hickory Forests. The occurrence in Pepperell is in very good condition. It has excellent species diversity with a nice display of spring ephemeral wildflowers and no exotic invasive species. It extends from west of Heald Pond on town and private land, along Gulf Brook with patches occurring north through Nashoba Conservation Trust land onto the Pepperell Springs town property, interspersed with more common forest types.

Pepperell has 45 Certified Vernal Pools (CVPs) and 132 Potential Vernal Pools (PVPs) (identified from aerial photographs, needing verification on the ground). In addition, areas of swamps will provide habitat for vernal pool species. Pepperell's vernal pools are shown on the included map. Locations of PVPs are available as a datalayer from MassGIS at <http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/pvp.html>. Clusters of vernal pools provide particularly good habitat for species that depend on vernal pools for habitat. The clusters mean that there are alternate habitats if something happens to one pool, and slightly different conditions in each may provide different habitats for pool dependent species. In the very large BioMap2 Core 2887, there is a Vernal Pool Core, a cluster extending into Groton on the Groton line in the Robinson Brook area. Other clusters not selected as BioMap2 cores occur in the same large Core 2887: the area between River Road and the Nashua River just north Rt. 119 has a nice cluster of vernal pools (in a Wetland Core) and another cluster, of CVPs, in the northwestern part of town may extend into Townsend. Although not included as a BioMap2 Vernal Pool Cluster, the latter is Forest Core and Aquatic Core. Another cluster mostly not in a BioMap2 Core of any sort is east of Hollis Street in the northern part of town. Visiting and evaluating more of the PVPs for certification would provide more protection to these wetlands and the species that use them.

DFW's Fisheries section has identified environmentally sensitive streams throughout Massachusetts that provide important habitat for native cold water fisheries (CFR, Coldwater Fisheries Resources). Buffers along these streams that maintain shade and filter inflowing sediments are important for maintaining their water – and habitat – quality. Culverts in the streams should be maintained to allow movement of fish, turtles, and other aquatic species. Identification of CFRs

is based on fish samples collected by staff biologists and technicians with new streams sampled and evaluated yearly. Pepperell has many stream segments that have been identified as CFRs, shown on the enclosed map. Almost all of Pepperell's CFR streams coincide with BioMap2 Cores and CNLs, emphasizing the importance of these areas for protecting all aspects of biodiversity. More information on describing the CFRs is available from <http://www.mass.gov/eea/agencies/dfg/dfw/wildlife-habitat-conservation/coldwater-fish-resources-cfr.html>

The BioMap2 core areas and Contributing Natural Landscape are particularly valuable in ecological terms, and important to the conservation of a variety of species. Completing conservation protection of remaining unprotected land in those areas would enhance the viability of these special areas - size and continuity of open space is particularly important for supporting wildlife populations. Preventing habitat fragmentation is vital in protecting the ecosystem, for the rare species on the enclosed list, as well as for additional common species. Many of the polygons of both aspects of BioMap2 extend into other municipalities: these large polygons provide opportunities to protect large unfragmented areas that will provide the best opportunities to limit further species loss from the Town and region. The BioMap2 Core and CNL polygons are available from MassGIS: <http://www.mass.gov/mgis/biomap2.htm>. There is also an interactive application to see the broad outlines of the polygons in each Town that is linked from the NHESP website. BioMap2 is more up to date than BioMap and Living Waters, which it replaces.

BioMap2 and the original BioMap and Living Waters projects are focused on conservation and intended to be planning tools. They include non-regulated components of biodiversity and include broader areas than do the regulatory maps that NHESP also produces.

Estimated Habitat maps are created for use under the Wetlands Protection Act and Priority Habitat maps for use under the Massachusetts Endangered Species Act. These two sets of maps are created for regulatory use, shown in the *Natural Heritage Atlas* (the 2008 Atlas, the 13<sup>th</sup> edition is the current version). A letter sized map combining these maps is attached to this letter. These data layers are also available from MassGIS, requiring access to some form of GIS to view them, at <http://www.state.ma.us/mgis/wethab.htm> and <http://www.state.ma.us/mgis/prihab.htm>. Town commissions and boards are encouraged to request the assistance of the Natural Heritage and Endangered Species Program in reviewing any project proposed in the habitat areas of the regulatory areas of the maps in the *Natural Heritage Atlas*.

Management and monitoring of conservation lands become important as acquisition and protection are accomplished. All wetlands particularly need to maintain their natural water regime, including normal fluctuations and connections with the uplands and other wetlands. Water quantity and quality are ongoing issues for wetlands. Another aspect of managing conservation lands that is important in many areas is controlling invasive non-native species that alter the habitat and occupy space that native species would otherwise use. We strongly recommend monitoring conservation land, and removing non-native species before they become a problem and impact native species.

Please note that this evaluation is based on the most recent information available in the Natural Heritage database, which is constantly being expanded and updated through ongoing research and inventory. Should new rare species information become available, this evaluation may need to be reconsidered.

Please do not hesitate to contact me at (508) 389-6352 or by email at [pat.swain@state.ma.us](mailto:pat.swain@state.ma.us) if you have any questions.

Sincerely,



Patricia C. Swain, Ph.D.  
Ecologist

cc: Melissa Cryan, EOEEA, DCS



# Division of Fisheries & Wildlife

Wayne F. MacCallum, *Director*

## Rare Species and Natural Communities Documented in the Town of Pepperell AS OF April 2, 2014

<u>Scientific Name</u>	<u>Common Name</u>	<u>MESA Status</u>	<u>Most recent Year</u>
<b>VERTEBRATES</b>			
Notropis bifrenatus	Bridle Shiner	SC	1998
Ambystoma opacum	Marbled Salamander	T	2012
Hemidactylium scutatum	Four-toed Salamander	Delisted	2006
Clemmys guttata	Spotted Turtle	Delisted	1999
Emydoidea blandingii	Blanding's Turtle	T	2013
Glyptemys insculpta	Wood Turtle	SC	2008
Terrapene carolina	Eastern Box Turtle	SC	2003
Ammodramus savannarum	Grasshopper Sparrow	T	1978
Pooecetes gramineus	Vesper Sparrow	T	1993
Myotis lucifugus	Little Brown Myotis	E	1997
Myotis septentrionalis	Northern Long-eared Bat	E	1997
<b>INVERTEBRATES</b>			
Alasmidonta undulata	Triangle Floater (a freshwater mussel)	Delisted	2008
	Brook Floater (Swollen Wedgemussel)	E	2011
Alasmidonta varicosa	Creeper (a freshwater mussel)	SC	2010
Strophitus undulatus	New England Bluet (a damselfly)	Delisted	2003
Enallagma laterale	Spine-crowned Clubtail (a dragonfly)	SC	2004
Gomphus abbreviatus	Beaverpond Clubtail (a dragonfly)	Delisted	2001
Gomphus borealis	Umber Shadowdragon (a dragonfly)	SC	2003
Neurocordulia obsoleta	Brook Snaketail (a dragonfly)	SC	2003
Ophiogomphus aspersus	Spatterdock Darner (a dragonfly)	SC	2003
Rhionaeschna mutata	Kennedy's Emerald (a dragonfly)	E	2007
Somatochlora kennedyi			
<b>VASCULAR PLANTS</b>			
Chenopodium foggii	Fogg's Goosefoot	E	1966
Lupinus perennis	Wild Lupine	WL	1994
<b>NATURAL COMMUNITIES</b>			
Sugar Maple – Oak – Hickory Forest	(Was Circumneutral talus forest/woodland)	S3 - Vulnerable	2000
<b>CERTIFIED VERNAL POOLS</b>			
Certified Vernal Pool (#45)			2012

Most Recent Year means the year of the most recent record in the NHESP database.

**KEY TO MESA STATUS:** E = Endangered. T = Threatened. SC = Special Concern. WL = unofficial Plant Watch List, not regulated. Delisted – species no longer protected under MESA. Occurrences that are more than 25 years old are not regulated; most very old observations have been searched for and not found.

Natural Communities are not regulated. S (state abundance) ranks are on a 1 to 5 scale, with S1 being considered Critically Imperiled, generally having 1 to 5 good occurrences or extremely low acreage



### Natural Heritage & Endangered Species Program

Field Headquarters, Westborough, MA 01581 Tel: (508) 389-6360 Fax: (508) 389-7891

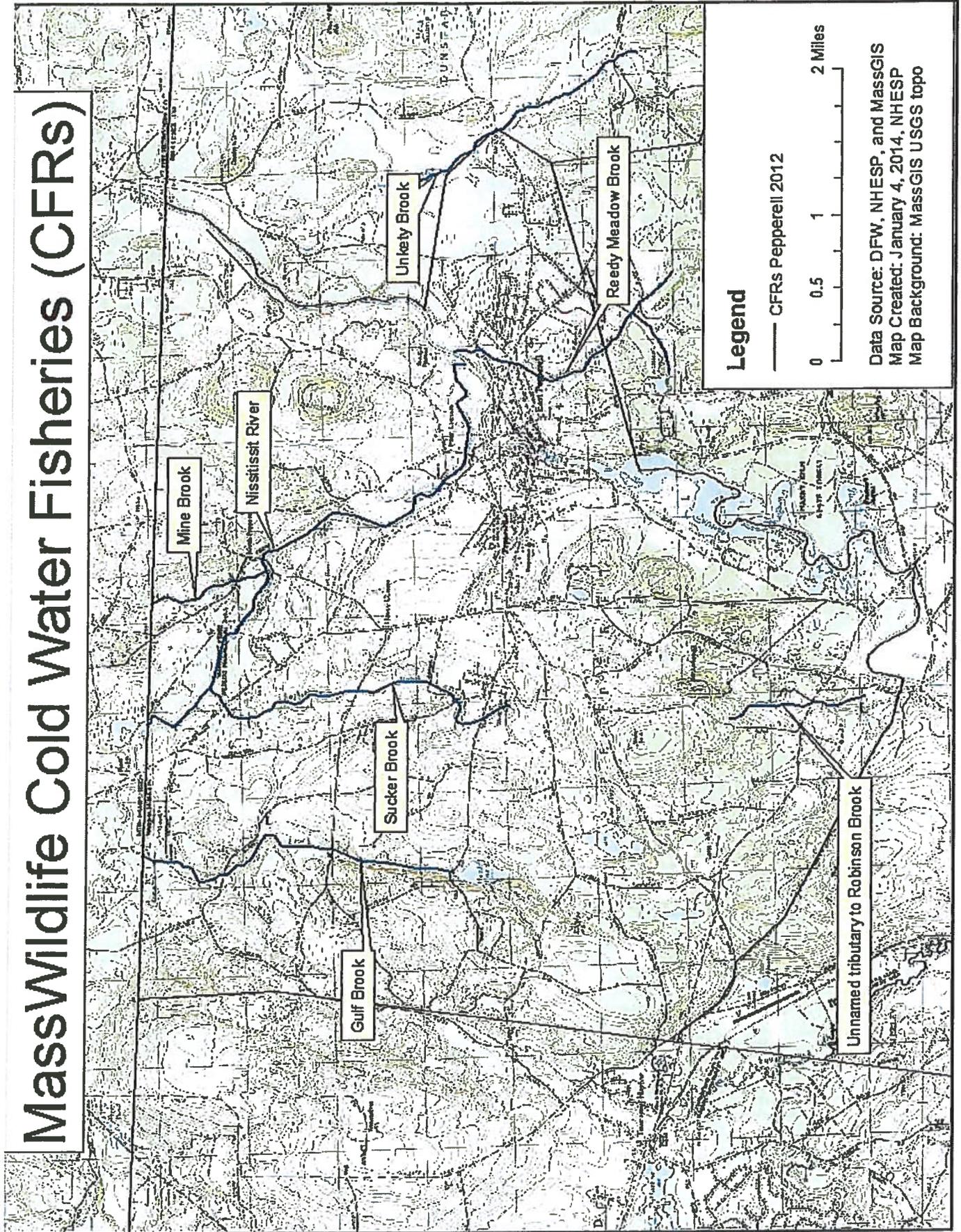
An Agency of the Department of Fish & Game

<http://www.mass.gov/nhosp>

## NHESP rare species and natural communities

statewide, S3 being Vulnerable, and S5 being Demonstrably Secure. Community types ranked S1, S2, and S3 are priority for conservation protection. Communities listed that are ranked S4 or S5 are considered to be exemplary examples of the type.

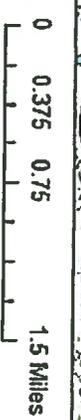
# MassWildlife Cold Water Fisheries (CFRs)



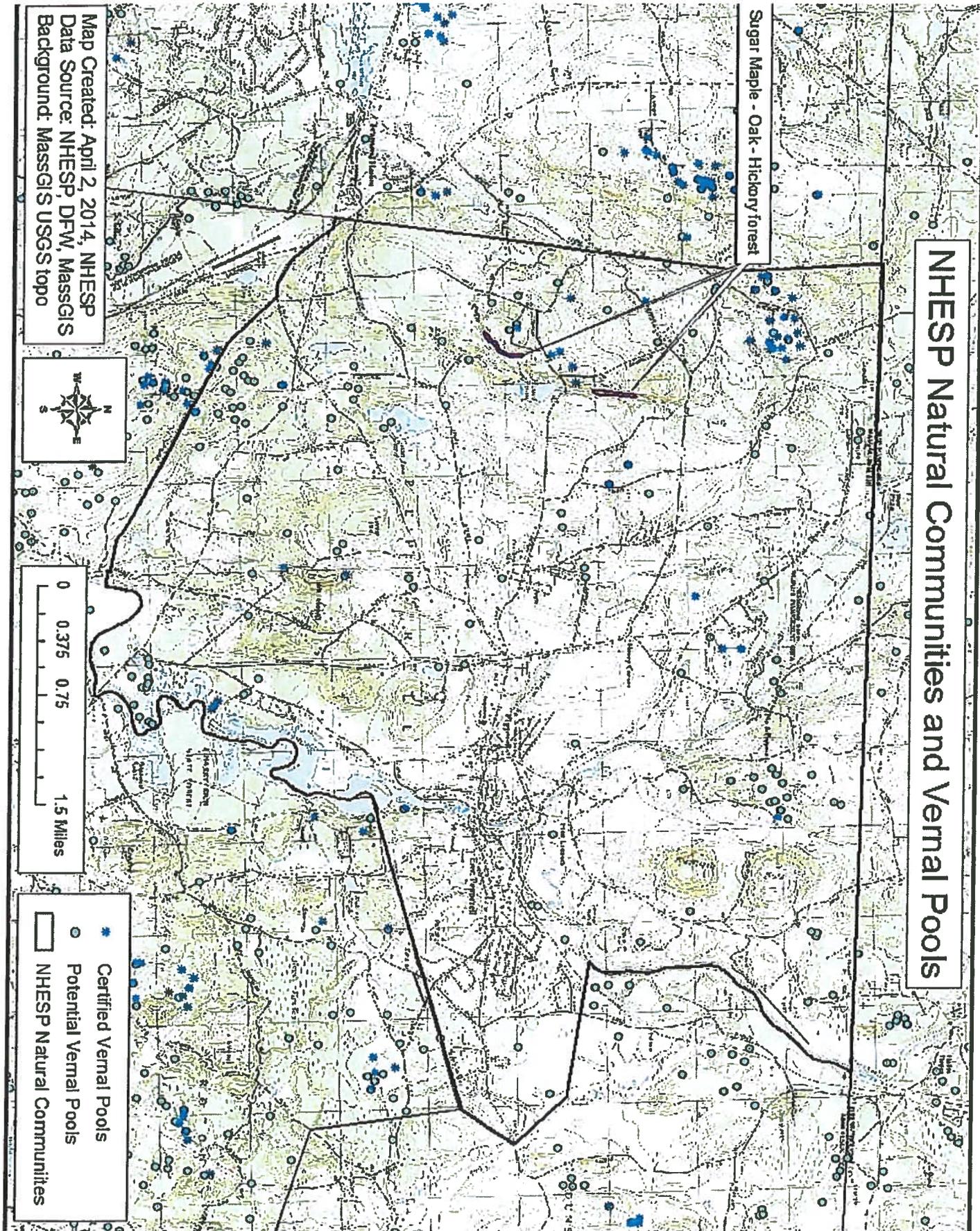
# NHESP Natural Communities and Vernal Pools

Sugar Maple - Oak - Hickory forest

Map Created: April 2, 2014, NHESP  
Data Source: NHESP, DFW, MassGIS  
Background: MassGIS USGS topo



- Certified Vernal Pools
- Potential Vernal Pools
- NHESP Natural Communities





# BioMap2

CONSERVING THE BIODIVERSITY OF  
MASSACHUSETTS IN A CHANGING WORLD

## Pepperell

Produced in 2012

This report and associated map provide information about  
important sites for biodiversity conservation in your area.

This information is intended for conservation planning, and is  
not intended for use in state regulations.



Natural Heritage  
& Endangered Species  
Program

Massachusetts Division of Fisheries & Wildlife

The Nature  
Conservancy   
Protecting nature. Preserving life.™



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Core Habitat and Critical Natural Landscape Summaries

Elements of *BioMap2* Cores

Core Habitat Summaries

Elements of *BioMap2* Critical Natural Landscapes

Critical Natural Landscape Summaries





## Introduction

The Massachusetts Department of Fish & Game, through the Division of Fisheries and Wildlife's Natural Heritage & Endangered Species Program (NHESP), and The Nature Conservancy's Massachusetts Program developed *BioMap2* to protect the state's biodiversity in the context of climate change.

*BioMap2* combines NHESP's 30 years of rigorously documented rare species and natural community data with spatial data identifying wildlife species and habitats that were the focus of the Division of Fisheries and Wildlife's 2005 State Wildlife Action Plan (SWAP). *BioMap2* also integrates The Nature Conservancy's assessment of large, well-connected, and intact ecosystems and landscapes across the Commonwealth, incorporating concepts of ecosystem resilience to address anticipated climate change impacts.

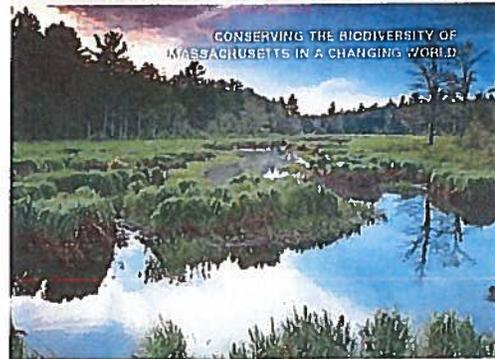
Protection and stewardship of *BioMap2* Core Habitat and Critical Natural Landscape is essential to safeguard the diversity of species and their habitats, intact ecosystems, and resilient natural landscapes across Massachusetts.

## What Does Status Mean?

The Division of Fisheries and Wildlife determines a status category for each rare species listed under the Massachusetts Endangered Species Act, M.G.L. c.131A, and its implementing regulations 321 CMR 10.00. Rare species are categorized as Endangered, Threatened or of Special Concern according to the following:

- Endangered species are in danger of extinction throughout all or a significant portion of their range or are in danger of extirpation from Massachusetts.

# BioMap2



MA Department of Fish & Game / Division of Fisheries & Wildlife / Natural Heritage & Endangered Species Program • The Nature Conservancy

Get your copy of the *BioMap2* report! Download from [www.mass.gov/nhesp](http://www.mass.gov/nhesp) or contact Natural Heritage at 508-389-6360 or [natural.heritage@state.ma.us](mailto:natural.heritage@state.ma.us).

- Threatened species are likely to become Endangered in Massachusetts in the foreseeable future throughout all or a significant portion of their range.
- Special Concern species have suffered a decline that could threaten the species if allowed to continue unchecked or occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become Threatened in Massachusetts.

In addition NHESP maintains an unofficial watch list of plants that are tracked due to potential conservation interest or concern, but are not regulated under the Massachusetts Endangered Species Act or other laws or regulations. Likewise, described natural communities are not regulated by any law or regulations, but they can help to identify



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Species Program

Massachusetts Division of Fisheries and Wildlife  
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ecologically important areas that are worthy of protection. The status of natural communities reflects the documented number and acreages of each community type in the state:

- Critically Imperiled communities typically have 5 or fewer documented sites or have very few remaining acres in the state.
- Imperiled communities typically have 6-20 sites or few remaining acres in the state.
- Vulnerable communities typically have 21-100 sites or limited acreage across the state.
- Secure communities typically have over 100 sites or abundant acreage across the state; however, excellent examples are identified as Core Habitat to ensure continued protection.

In 2005 the Massachusetts Division of Fisheries and Wildlife completed a comprehensive State Wildlife Action Plan (SWAP) documenting the status of Massachusetts wildlife and providing recommendations to help guide wildlife conservation decision-making. SWAP includes all the wildlife species listed under the Massachusetts Endangered Species Act (MESA), as well as more than 80 species that need conservation attention but do not meet the requirements for inclusion under MESA. The SWAP document is organized around habitat types in need of conservation within the Commonwealth. While the original BioMap focused primarily on rare species protected under MESA, *BioMap2* also addresses other Species of Conservation Concern, their habitats, and the ecosystems that support them to create a spatial representation of most of the elements of SWAP.

### ***BioMap2*: One Plan, Two Components**

*BioMap2* identifies two complementary spatial layers, Core Habitat and Critical Natural Landscape.

Core Habitat identifies key areas that are critical for the long-term persistence of rare species and other Species of Conservation Concern, as well as a wide diversity of natural communities and intact ecosystems across the Commonwealth. Protection of Core Habitats will contribute to the conservation of specific elements of biodiversity.

Critical Natural Landscape identifies large natural Landscape Blocks that are minimally impacted by development. If protected, these areas will provide habitat for wide-ranging native species, support intact ecological processes, maintain connectivity among habitats, and enhance ecological resilience to natural and anthropogenic disturbances in a rapidly changing world. Areas delineated as Critical Natural Landscape also include buffering upland around wetland, coastal, and aquatic Core Habitats to help ensure their long-term integrity.

The long-term persistence of Massachusetts biological resources requires a determined commitment to land and water conservation. Protection and stewardship of both Critical Natural Landscapes and Core Habitats are needed to realize the biodiversity conservation vision of *BioMap2*.

### Components of Core Habitat

Core Habitat identifies specific areas necessary to promote the long-term persistence of rare species, other Species of Conservation Concern, exemplary natural communities, and intact ecosystems.

### Rare Species

There are 432 native plant and animal species listed as Endangered, Threatened or Special Concern under the Massachusetts Endangered Species Act (MESA) based on their rarity, population trends, and threats to survival. For





Table 1. Species of Conservation Concern described in the State Wildlife Action Plan and/or included on the MESA List and for which habitat was mapped in *BioMap2*. Note that plants are not included in SWAP, and that marine species such as whales and sea turtles are not included in *BioMap2*.

Taxonomic Group	MESA-listed Species	Non-listed Species of Conservation Concern
Mammals	4	5
Birds	27	23
Reptiles	10	5
Amphibians	4	3
Fish	10	17
Invertebrates	102	9
Plants	256	0
Total	413	62

*BioMap2*, NHESP staff identified the highest quality habitat sites for each non-marine species based on size, condition, and landscape context.

#### Other Species of Conservation Concern

In addition to species on the MESA List described previously, the State Wildlife Action Plan (SWAP) identifies 257 wildlife species and 22 natural habitats most in need of conservation within the Commonwealth. *BioMap2* includes species-specific habitat areas for 45 of these species and habitat for 17 additional species which was mapped with other coarse-filter and fine-filter approaches.

#### Priority Natural Communities

Natural communities are assemblages of plant and animal species that share a common environment and occur together repeatedly on the landscape. *BioMap2* gives conservation

priority to natural communities with limited distribution and to the best examples of more common types.

#### Vernal Pools

Vernal pools are small, seasonal wetlands that provide important wildlife habitat, especially for amphibians and invertebrate animals that use them to breed. *BioMap2* identifies the top 5 percent most interconnected clusters of Potential Vernal Pools in the state.

#### Forest Cores

In *BioMap2*, Core Habitat includes the best examples of large, intact forests that are least impacted by roads and development, providing critical habitat for numerous woodland species. For example, the interior forest habitat defined by Forest Cores supports many bird species sensitive to the impacts of roads and development, such as the Black-throated Green Warbler, and helps maintain ecological processes found only in unfragmented forest patches.

#### Wetland Cores

*BioMap2* used an assessment of Ecological Integrity to identify the least disturbed wetlands in the state within undeveloped landscapes—those with intact buffers and little fragmentation or other stressors associated with development. These wetlands are most likely to support critical wetland functions (i.e., natural hydrologic conditions, diverse plant and animal habitats, etc.) and are most likely to maintain these functions into the future.

#### Aquatic Cores

To delineate integrated and functional ecosystems for fish species and other aquatic





Species of Conservation Concern, beyond the species and exemplary habitats described above, *BioMap2* identifies intact river corridors within which important physical and ecological processes of the river or stream occur.

### Components of Critical Natural Landscape

Critical Natural Landscape identifies intact landscapes in Massachusetts that are better able to support ecological processes and disturbance regimes, and a wide array of species and habitats over long time frames.

### Landscape Blocks

*BioMap2* identifies the most intact large areas of predominately natural vegetation, consisting of contiguous forests, wetlands, rivers, lakes, and ponds, as well as coastal habitats such as barrier beaches and salt marshes.

### Upland Buffers of Wetland and Aquatic Cores

A variety of analyses were used to identify protective upland buffers around wetlands and rivers.

### Upland Habitat to Support Coastal Adaptation

*BioMap2* identifies undeveloped lands adjacent to and up to one and a half meters above existing salt marshes as Critical Natural Landscapes with high potential to support inland migration of salt marsh and other coastal habitats over the coming century.

The conservation areas identified by *BioMap2* are based on breadth and depth of data, scientific expertise, and understanding of Massachusetts' biodiversity. The numerous sources of information and analyses used to

### Legal Protection of Biodiversity

*BioMap2* presents a powerful vision of what Massachusetts would look like with full protection of the land most important for supporting the Commonwealth's biodiversity. While *BioMap2* is a planning tool with *no regulatory function*, all state-listed species enjoy legal protection under the [Massachusetts Endangered Species Act \(M.G.L. c.131A\)](#) and its implementing regulations ([321 CMR 10.00](#)). Wetland habitat of state-listed wildlife is also protected under the [Wetlands Protection Act Regulations \(310 CMR 10.00\)](#). The *Natural Heritage Atlas* contains maps of [Priority Habitats](#) and [Estimated Habitats](#), which are used, respectively, for regulation under the Massachusetts Endangered Species Act and the Wetlands Protection Act. For more information on rare species regulations, and to view Priority and Estimated Habitat maps, please see the [Regulatory Review](#) page at <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/>.

*BioMap2* is a conservation planning tool that does not, in any way, supplant the Estimated and Priority Habitat Maps which have regulatory significance. Unless and until the *BioMap2* vision is fully realized, we must continue to protect our most imperiled species and their habitats.

create Core Habitat and Critical Natural Landscape are complementary, and outline a comprehensive conservation vision for Massachusetts, from rare species to intact landscapes. In total, these robust analyses define a suite of priority lands and waters that, if permanently protected, will support Massachusetts' natural systems for generations to come.





## Understanding Core Habitat Summaries

Following the Town Overview, there is a descriptive summary of each Core Habitat and Critical Natural Landscape that occurs in your city or town. These summaries highlight some of the outstanding characteristics of each Core Habitat and Critical Natural Landscape, and will help you learn more about your city or town's biodiversity. You can find out more information about many of these species and natural communities by looking at specific fact sheets at [www.mass.gov/nhesp](http://www.mass.gov/nhesp).

## Additional Information

For copies of the full *BioMap2* report, the Technical Report, and an [interactive mapping tool](#), visit the *BioMap2* [website](#) via the Land Protection and Planning tab at [www.mass.gov/nhesp](http://www.mass.gov/nhesp). If you have any questions about this report, or if you need help protecting land for biodiversity in your community, the Natural Heritage & Endangered Species Program staff looks forward to working with you.

### Contact the Natural Heritage & Endangered Species Program

By phone 508-389-6360  
By fax 508-389-7890  
By email [natural.heritage@state.ma.us](mailto:natural.heritage@state.ma.us)  
By Mail 100 Hartwell Street, Suite 230  
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The GIS datalayers of *BioMap2* are available for download from MassGIS at [www.mass.gov/mgis](http://www.mass.gov/mgis).



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## Town Overview

Pepperell lies within the Southern New England Coastal Plains and Hills Ecoregion, an area comprised of plains with a few low hills. Forests are mainly central hardwoods with some transition hardwoods and some elm-ash-red maple and red and white pine. Many major rivers drain this area.



## Pepperell at a Glance

- Total Area: 14,843 acres (23.2 square miles)
- Human Population in 2010: 11,497
- Open space protected in perpetuity: 2,492 acres, or 16.8% percent of total area\*
- BioMap2 Core Habitat: 5,516 acres
- BioMap2 Core Habitat Protected: 1,200 acres or 21.8%
- BioMap2 Critical Natural Landscape: 2,804 acres
- BioMap2 Critical Natural Landscape Protected: 1,101 acres or 39.3%.

## BioMap2 Components

### Core Habitat

- 1 Exemplary or Priority Natural Community
- 2 Forest Cores
- 7 Wetland Cores
- 1 Aquatic Core
- 1 Vernal Pool Core
- 3 Species of Conservation Concern Cores\*\*
  - 2 reptiles, 2 amphibians, 1 fish, 6 insects, 2 mussels

### Critical Natural Landscape

- 3 Landscape Blocks
- 7 Wetland Core Buffers
- 3 Aquatic Core Buffers

\* Calculated using MassGIS data layer "Protected and Recreational Open Space—March, 2012".

\*\* See next pages for complete list of species, natural communities and other biodiversity elements.

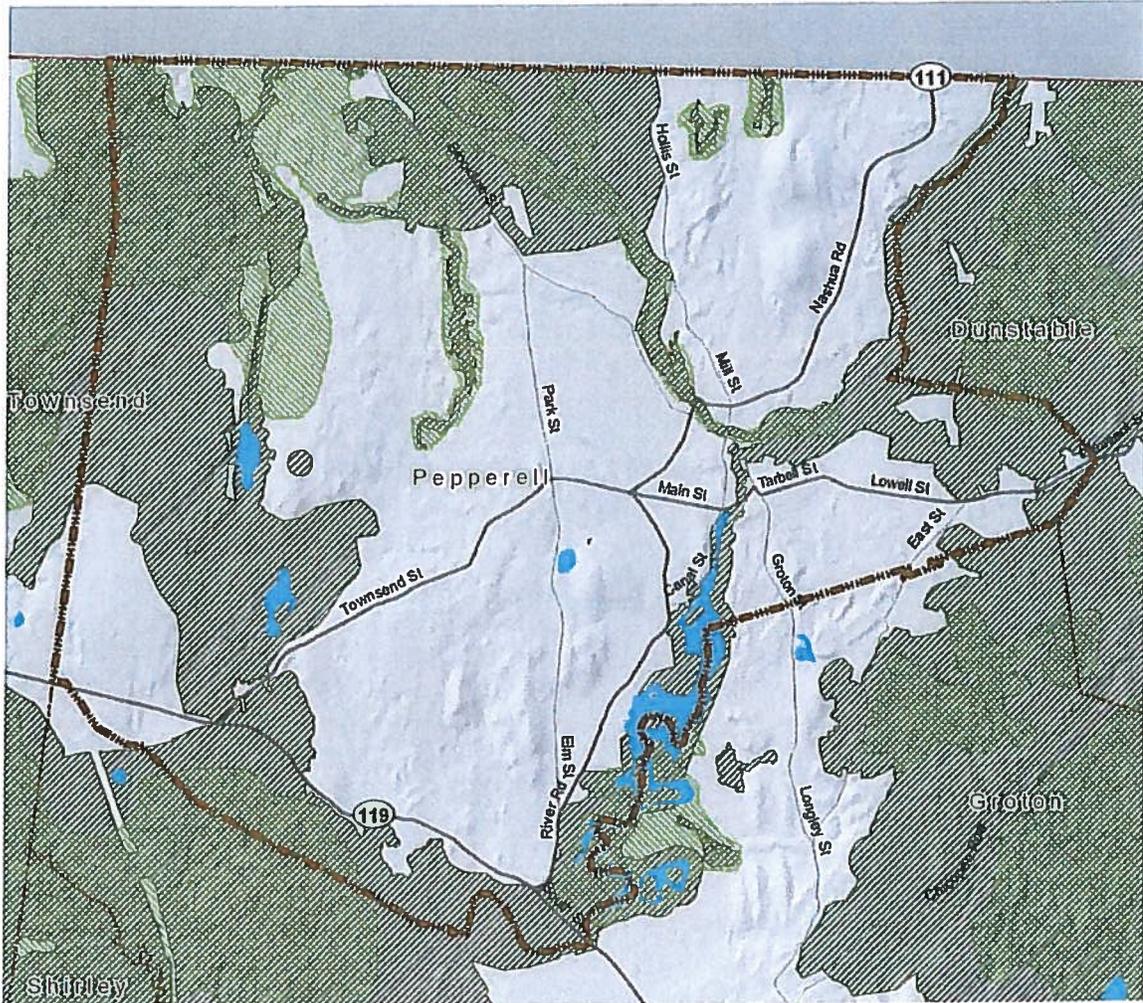




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### BioMap2 Core Habitat and Critical Natural Landscape in Pepperell



-  BioMap2 Core Habitat
-  BioMap2 Critical Natural Landscape

1 Mile  




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**Species of Conservation Concern, Priority and Exemplary Natural Communities,  
and Other Elements of Biodiversity in Pepperell**

**Mussels**

[Brook Floater \(Swollen Wedgemussel\)](#), (*Alasmidonta varicosa*), E  
[Triangle Floater](#), (*Alasmidonta undulata*), Non-listed SWAP species

**Insects**

**Damselflies**

[New England Bluet](#), (*Enallagma laterale*), Non-listed SWAP species

**Dragonflies**

[Kennedy's Emerald](#), (*Somatochlora kennedyi*), E  
[Spine-crowned Clubtail](#), (*Gomphus abbreviatus*), SC  
[Umbler Shadowdragon](#), (*Neurocordulia obsoleta*), SC  
[Brook Snaketail](#), (*Ophiogomphus nersus*), SC  
[Spatterdock Darner](#), (*Rhionaeschna mutata*), SC

**Amphibians**

[Four-toed Salamander](#), (*Hemidactylium scutatum*), Non-listed SWAP  
[Marbled Salamander](#), (*Ambystoma opacum*), T

**Fishes**

[Bridle Shiner](#), (*Notropis bifrenatus*), SC

**Reptiles**

Smooth Green Snake, (*Ophedrys vernalis*), Non-listed SWAP  
[Blanding's Turtle](#), (*Emydoidea blandingii*), T

**Priority Natural Communities**

[Circumneutral Talus Forest/Woodland](#), S3

**Other BioMap2 Components**

[Forest Core](#)  
[Aquatic Core](#)  
[Wetland Core](#)  
[Vernal Pool Core](#)  
[Landscape Block](#)  
[Aquatic Core Buffer](#)  
[Wetland Core Buffer](#)





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E = Endangered

T = Threatened

SC = Special Concern

S1 = Critically Imperiled communities, typically 5 or fewer documented sites or very few remaining acres in the state.

S2 = Imperiled communities, typically 6-20 sites or few remaining acres in the state.

S3 = Vulnerable communities, typically have 21-100 sites or limited acreage across the state.



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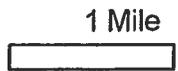


### BioMap2 Core Habitat in Pepperell

Core IDs correspond with the following element lists and summaries.



-  BioMap2 Core Habitat
-  BioMap2 Critical Natural Landscape



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Elements of BioMap2 Cores

This section lists all elements of BioMap2 Cores that fall *entirely or partially* within Pepperell. The elements listed here may not occur within the bounds of Pepperell.

**Core 2786**

Species of Conservation Concern

New England Bluet

*Enallagma laterale*

Non-listed SWAP

**Core 2875**

Wetland Core

**Core 2880**

Wetland Core

**Core 2883**

Aquatic Core

**Core 2887**

Forest Core

Aquatic Core

Wetland Core

Vernal Pool Core

Priority & Exemplary Natural Communities

Acidic Graminoid Fen

S3

Alluvial Red Maple Swamp

S3

Circumneutral Talus Forest/Woodland

S3

High-terrace Floodplain Forest

S2

Low-energy Riverbank

Pitch Pine - Scrub Oak Community

S2

Riverside Seep

S2

Small-river Floodplain Forest

S2

Species of Conservation Concern

Cat-tail Sedge

*Carex typhina*

T

Climbing Fern

*Lygodium palmatum*

SC

Houghton's Flatsedge

*Cyperus houghtonii*

E

Low Bindweed

*Calystegia spithamea*

E

New England Blazing Star

*Liatris scariosa* var. *novae-angliae*

SC

Ovate Spike-sedge

*Eleocharis ovata*

E

Philadelphia Panic-grass

*Panicum philadelphicum* ssp. *philadelphicum*

SC

Small Bur-reed

*Sparganium natans*

E

Wild Senna

*Senna hebecarpa*

E

Brook Floater (Swollen Wedgemussel)

*Alasmidonta varicosa*

E

Creeper

*Strophitus undulatus*

SC

Triangle Floater

*Alasmidonta undulata*

Non-listed SWAP



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Intricate Fairy Shrimp	<i>Eubranchipus intricatus</i>	SC
Pine Barrens Speranza	<i>Speranza exonerata</i>	SC
Pine Barrens Zanclognatha	<i>Zanclognatha martha</i>	T
Pink Sallow	<i>Psectraglaea carnososa</i>	SC
Twilight Moth	<i>Lycia rachelae</i>	E
Twelve-spotted Tiger Beetle	<i>Cicindela duodecimguttata</i>	SC
New England Bluet	<i>Enallagma laterale</i>	Non-listed SWAP
Arrow Clubtail	<i>Stylurus spiniceps</i>	Non-listed SWAP
Brook Snaketail	<i>Ophiogomphus aspersus</i>	SC
Kennedy's Emerald	<i>Somatochlora kennedyi</i>	E
Spatterdock Darner	<i>Rhionaeschna mutata</i>	SC
Spine-crowned Clubtail	<i>Gomphus abbreviatus</i>	SC
Umber Shadowdragon	<i>Neurocordulia obsoleta</i>	SC
Zebra Clubtail	<i>Stylurus scudderii</i>	Non-listed SWAP
Blue-spotted Salamander	<i>Ambystoma laterale</i>	SC
Four-toed Salamander	<i>Hemidactylium scutatum</i>	Non-listed SWAP
Marbled Salamander	<i>Ambystoma opacum</i>	T
Northern Leopard Frog	<i>Rana pipiens</i>	Non-listed SWAP
Spring Salamander	<i>Gyrinophilus porphyriticus</i>	Non-listed SWAP
Blanding's Turtle	<i>Emydoidea blandingii</i>	T
Eastern Hognose Snake	<i>Heterodon platirhinos</i>	Non-listed SWAP
Eastern Ribbon Snake	<i>Thamnophis sauritus</i>	Non-listed SWAP
Northern Black Racer	<i>Coluber constrictor</i>	Non-listed SWAP
Smooth Green Snake	<i>Ophiodryas vernalis</i>	Non-listed SWAP
Spotted Turtle	<i>Clemmys guttata</i>	Non-listed SWAP
Wood Turtle	<i>Glyptemys insculpta</i>	SC
Bridle Shiner	<i>Notropis bifrenatus</i>	SC
American Bittern	<i>Botaurus lentiginosus</i>	E
Eastern Whip-poor-will	<i>Caprimulgus vociferus</i>	SC
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	T
Least Bittern	<i>Ixobrychus exilis</i>	E
Sora	<i>Porzana carolina</i>	Non-listed SWAP
Upland Sandpiper	<i>Bartramia longicauda</i>	E
Vesper Sparrow	<i>Poocetes gramineus</i>	T
Water Shrew	<i>Sorex palustris</i>	SC



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### Core Habitat Summaries

#### **Core 2786**

A 10-acre Core Habitat featuring a Species of Conservation Concern.

New England Bluets are damselflies whose habitat includes coastal plain ponds, open water in swamps, and other ponds and lakes. It occurs only in the northeastern United States and is most common from eastern Massachusetts into Connecticut.

#### **Core 2875**

A 11-acre Core Habitat featuring Wetland Core.

Wetland Cores are the least disturbed wetlands in the state within undeveloped landscapes—those with intact buffers and little fragmentation or other stressors associated with development. These wetlands are most likely to support critical wetland functions (i.e., natural hydrologic conditions, diverse plant and animal habitats, etc.) and are most likely to maintain these functions into the future.

#### **Core 2880**

A 11-acre Core Habitat featuring Wetland Core.

Wetland Cores are the least disturbed wetlands in the state within undeveloped landscapes—those with intact buffers and little fragmentation or other stressors associated with development. These wetlands are most likely to support critical wetland functions (i.e., natural hydrologic conditions, diverse plant and animal habitats, etc.) and are most likely to maintain these functions into the future.

#### **Core 2883**

A 3-acre Core Habitat featuring Aquatic Core.

Aquatic Cores are intact river corridors within which important physical and ecological processes of the river or stream occur. They delineate integrated and functional ecosystems for fish species and other aquatic Species of Conservation Concern.

#### **Core 2887**

A 50,549-acre Core Habitat featuring Forest Core, Wetland Core, Aquatic Core, Vernal Pool Core, Priority Natural Communities, and Species of Conservation Concern.

The Nashua River and three of its tributaries in Massachusetts, the Nissitissit River, the Squannacook River, and Unkety Brook, are the watery framework for a complex landscape that supports an exceptionally high number of rare and uncommon species. Forty-one such turtles, dragonflies, freshwater mussels, salamanders, plants and other species inhabit these rivers, brooks, and vernal pools. Good populations of the globally rare Brook Floater mussel inhabit the Nissitissit River, while the equally rare Ringed Boghaunter dragonfly can be found in four boggy sites across this large Core Habitat. The





wide-ranging and regionally rare Blanding's Turtle inhabits almost all of this Core; these turtles use many parts of this landscape throughout their decades-long lives, from feeding and over-wintering in deep vernal pools and buttonbush swamps to nesting in open, sunny, well-drained fields and abandoned gravel pits.

Acidic Graminoid Fens are sedge- and sphagnum-dominated acidic peatlands that experience some groundwater and/or surface water flow but no calcareous seepage. Standing water is often present throughout much of the growing season. This is a good example of a variant of Acidic Graminoid Fen dominated by Water Willow. It has good structural characteristics and no exotic invasive species.

Alluvial Red Maple Swamps are a type of red maple swamp that occurs in low areas along rivers and streams. Regular flooding enriches the soil with nutrients, resulting in an unusual set of associated trees and plants. This example of Alluvial Red Maple Swamp is of excellent quality and is associated with several small oxbow ponds.

Circumneutral Talus Forest communities develop on boulder strewn slopes below slightly acidic cliffs or rock outcrops. There is often a gradient of vegetation density as the slope changes, with more trees on the lower slope. This example of Circumneutral Talus Forest, though small, is in very good condition. It has excellent diversity and no exotic invasive species, but has only a small buffer to development.

High-Terrace Floodplain Forests are deciduous hardwood forests that occur along riverbanks, above the zone of annual flooding. Although they do not flood annually, they flood often enough for the soil to be moderately enriched. This Core has two examples of High-Terrace Floodplain Forest which are moderate sized, but fairly disturbed with exotic invasive species present.

Low-Energy Riverbanks are open herbaceous communities occurring on sandy or silty mineral soils of river and streambanks that do not experience severe flooding or ice scour. This example of Low-Energy Riverbank is in good condition, with few exotics, and is part of a larger complex of riverine and wetland ecosystems.

Pitch Pine/Scrub Oak Communities are globally rare, fire-dependent, shrub-dominated communities, with scattered trees and occasional openings. They provide habitat for many rare species, and develop on dry, poor, usually sandy, soils. This example of Pitch pine-Scrub Oak community is in good condition, with intact natural processes like fire, and good species and habitat diversity.

Riverside Seeps are a mixed herbaceous community that occurs at the base of steep riverbanks where groundwater seeps out of the bottom of the upland slope. This enrichment leads to high species diversity. This example of Riverside Seep is relatively undisturbed and of high quality, and consists of several Black Ash-dominated seepy areas occurring along a slope above floodplain forest.

Small-River Floodplain Forests are silver maple/green ash forests occurring on alluvial soils of small rivers and streams. They occur on small tributaries of the Connecticut and Nashua Rivers and along some small rivers of eastern Massachusetts. This small example of Small-River Floodplain Forest is in good condition.

Forest Cores are the best examples of large, intact forests that are least impacted by roads and development. Forest Cores support many bird species sensitive to the impacts of roads and development and help maintain ecological processes found only in unfragmented forest patches.





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Conserving the Biodiversity of Massachusetts in a Changing World

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Wetlands Cores are the least disturbed wetlands in the state within undeveloped landscapes—those with intact buffers and little fragmentation or other stressors associated with development. These wetlands are most likely to support critical wetland functions (i.e., natural hydrologic conditions, diverse plant and animal habitats, etc.) and are most likely to maintain these functions into the future.

Aquatic Cores are intact river corridors within which important physical and ecological processes of the river or stream occur. They delineate integrated and functional ecosystems for fish species and other aquatic Species of Conservation Concern.

Vernal pools are small, seasonal wetlands that provide important wildlife habitat, especially for amphibians and invertebrate animals that use them to breed. *BioMap2* identifies the top 5 percent most interconnected clusters of Potential Vernal Pools in the state.



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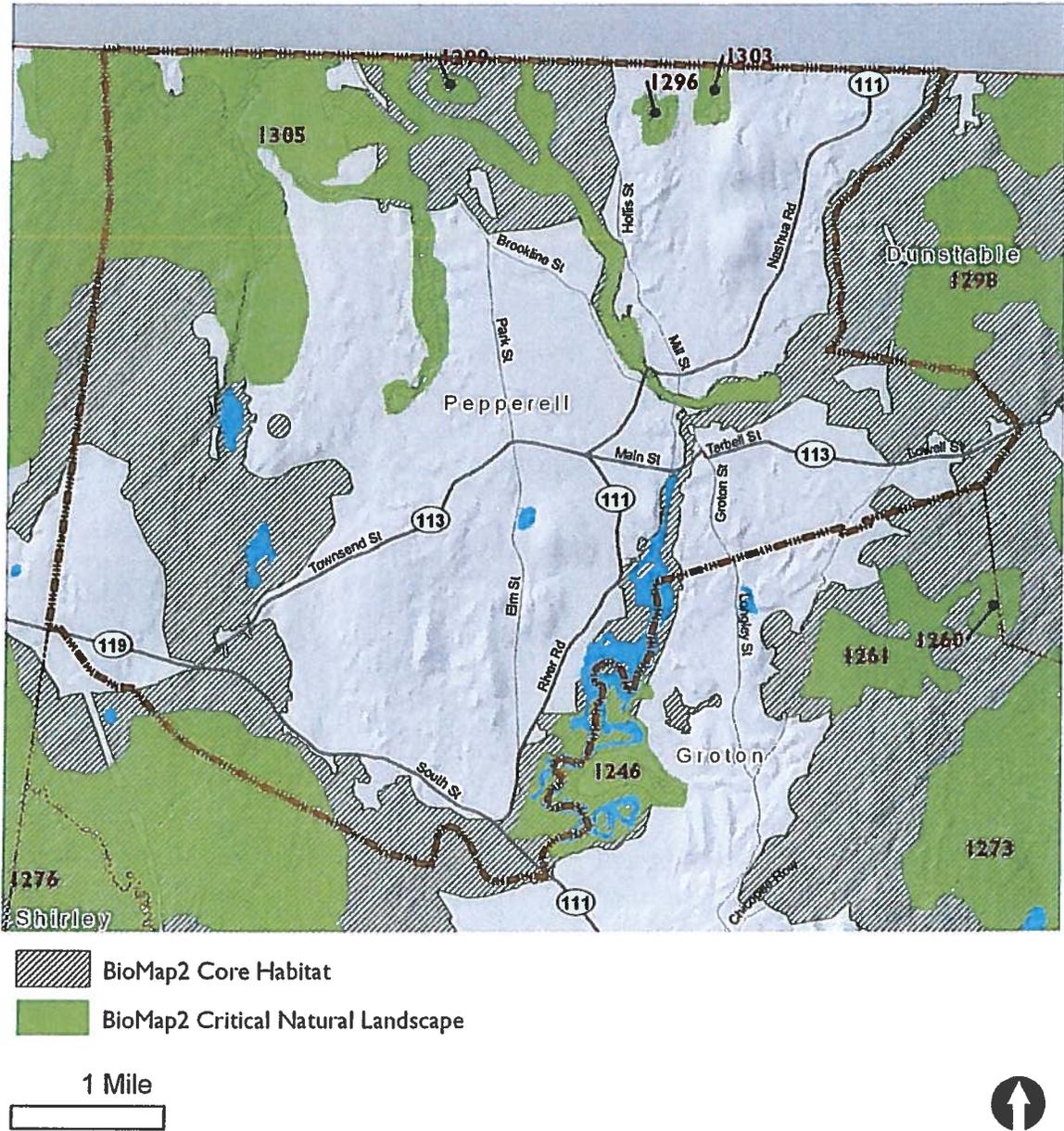
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### BioMap2 Critical Natural Landscape in Pepperell

Critical Natural Landscape IDs correspond with the following element lists and summaries.



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phone: 508-389-6360 fax: 508-389-7890

For more information on rare species and natural communities, please see our fact sheets online at [www.mass.gov/nhesp](http://www.mass.gov/nhesp).



Elements of BioMap2 Critical Natural Landscapes

This section lists all elements of BioMap2 Critical Natural Landscapes that fall *entirely or partially* within Pepperell. The elements listed here may not occur within the bounds of Pepperell.

**CNL 1246**

Wetland Core Buffer

**CNL 1276**

Aquatic Core Buffer  
Landscape Block  
Wetland Core Buffer

**CNL 1296**

Wetland Core Buffer

**CNL 1298**

Landscape Block  
Wetland Core Buffer

**CNL 1299**

Wetland Core Buffer

**CNL 1303**

Wetland Core Buffer

**CNL 1305**

Aquatic Core Buffer  
Landscape Block  
Wetland Core Buffer





### Critical Natural Landscape Summaries

#### **CNL 1246**

A 504-acre Critical Natural Landscape featuring Wetland Core Buffer.

A variety of analyses were used to identify protective upland buffers around wetlands and rivers. One, the variable width buffers methodology, included the most intact areas around each wetland and river, by extending deeper into surrounding unfragmented habitats than into developed areas adjacent to each wetland. Other upland buffers were identified through the rare species habitat analysis. In this way, the conservation of wetland buffers will support the habitats and functionality of each wetland, and also include adjacent uplands that are important for many species that move between habitat types.

#### **CNL 1276**

A 6,761-acre Critical Natural Landscape featuring Aquatic Core Buffer, Wetland Core Buffer and Landscape Block.

A variety of analyses were used to identify protective upland buffers around wetlands and rivers. One, the variable width buffers methodology, included the most intact areas around each wetland and river, by extending deeper into surrounding unfragmented habitats than into developed areas adjacent to each wetland. Other upland buffers were identified through the rare species habitat analysis. In this way, the conservation of wetland buffers will support the habitats and functionality of each wetland, and also include adjacent uplands that are important for many species that move between habitat types.

Landscape Blocks, the primary component of Critical Natural Landscapes, are large areas of intact predominately natural vegetation, consisting of contiguous forests, wetlands, rivers, lakes, and ponds, as well as coastal habitats such as barrier beaches and salt marshes. Pastures and power-line rights-of-way, which are less intensively altered than most developed areas, were also included since they provide habitat and connectivity for many species. Collectively, these natural cover types total 3.6 million acres across the state. An Ecological Integrity assessment was used to identify the most intact and least fragmented areas. These large Landscape Blocks are most likely to maintain dynamic ecological processes such as buffering, connectivity, natural disturbance, and hydrological regimes, all of which help to support wide-ranging wildlife species and many other elements of biodiversity.

In order to identify critical Landscape Blocks in each ecoregion, different Ecological Integrity thresholds were used to select the largest intact landscape patches in each ecoregion while avoiding altered habitat as much as possible. This ecoregional representation accomplishes a key goal of *BioMap2* to protect the ecological stages that support a broad suite of biodiversity in the context of climate change. Blocks were defined by major roads, and minimum size thresholds differed among ecoregions to ensure that *BioMap2* includes the best of the best in each ecoregion.

#### **CNL 1296**

A 45-acre Critical Natural Landscape featuring Wetland Core Buffer.

A variety of analyses were used to identify protective upland buffers around wetlands and rivers. One, the variable width buffers methodology, included the most intact areas around each wetland and river,



**Natural Heritage  
& Endangered  
Species Program**

**Massachusetts Division of Fisheries and Wildlife**  
1 Rabbit Hill Road, Westborough, MA 01581  
phone: 508-389-6360 fax: 508-389-7890



by extending deeper into surrounding unfragmented habitats than into developed areas adjacent to each wetland. Other upland buffers were identified through the rare species habitat analysis. In this way, the conservation of wetland buffers will support the habitats and functionality of each wetland, and also include adjacent uplands that are important for many species that move between habitat types.

#### CNL 1298

A 1,819-acre Critical Natural Landscape featuring Wetland Core Buffer and Landscape Block.

A variety of analyses were used to identify protective upland buffers around wetlands and rivers. One, the variable width buffers methodology, included the most intact areas around each wetland and river, by extending deeper into surrounding unfragmented habitats than into developed areas adjacent to each wetland. Other upland buffers were identified through the rare species habitat analysis. In this way, the conservation of wetland buffers will support the habitats and functionality of each wetland, and also include adjacent uplands that are important for many species that move between habitat types.

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In order to identify critical Landscape Blocks in each ecoregion, different Ecological Integrity thresholds were used to select the largest intact landscape patches in each ecoregion while avoiding altered habitat as much as possible. This ecoregional representation accomplishes a key goal of *BioMap2* to protect the ecological stages that support a broad suite of biodiversity in the context of climate change. Blocks were defined by major roads, and minimum size thresholds differed among ecoregions to ensure that *BioMap2* includes the best of the best in each ecoregion.

#### CNL 1299

A 43-acre Critical Natural Landscape featuring Wetland Core Buffer.

A variety of analyses were used to identify protective upland buffers around wetlands and rivers. One, the variable width buffers methodology, included the most intact areas around each wetland and river, by extending deeper into surrounding unfragmented habitats than into developed areas adjacent to each wetland. Other upland buffers were identified through the rare species habitat analysis. In this way, the conservation of wetland buffers will support the habitats and functionality of each wetland, and also include adjacent uplands that are important for many species that move between habitat types.

#### CNL 1303

A 53-acre Critical Natural Landscape featuring Wetland Core Buffer.

A variety of analyses were used to identify protective upland buffers around wetlands and rivers. One, the variable width buffers methodology, included the most intact areas around each wetland and river,





by extending deeper into surrounding unfragmented habitats than into developed areas adjacent to each wetland. Other upland buffers were identified through the rare species habitat analysis. In this way, the conservation of wetland buffers will support the habitats and functionality of each wetland, and also include adjacent uplands that are important for many species that move between habitat types.

#### CNL 1305

A 4,843-acre Critical Natural Landscape featuring Aquatic Core Buffer, Wetland Core Buffer and Landscape Block.

A variety of analyses were used to identify protective upland buffers around wetlands and rivers. One, the variable width buffers methodology, included the most intact areas around each wetland and river, by extending deeper into surrounding unfragmented habitats than into developed areas adjacent to each wetland. Other upland buffers were identified through the rare species habitat analysis. In this way, the conservation of wetland buffers will support the habitats and functionality of each wetland, and also include adjacent uplands that are important for many species that move between habitat types.

Landscape Blocks, the primary component of Critical Natural Landscapes, are large areas of intact predominately natural vegetation, consisting of contiguous forests, wetlands, rivers, lakes, and ponds, as well as coastal habitats such as barrier beaches and salt marshes. Pastures and power-line rights-of-way, which are less intensively altered than most developed areas, were also included since they provide habitat and connectivity for many species. Collectively, these natural cover types total 3.6 million acres across the state. An Ecological Integrity assessment was used to identify the most intact and least fragmented areas. These large Landscape Blocks are most likely to maintain dynamic ecological processes such as buffering, connectivity, natural disturbance, and hydrological regimes, all of which help to support wide-ranging wildlife species and many other elements of biodiversity.

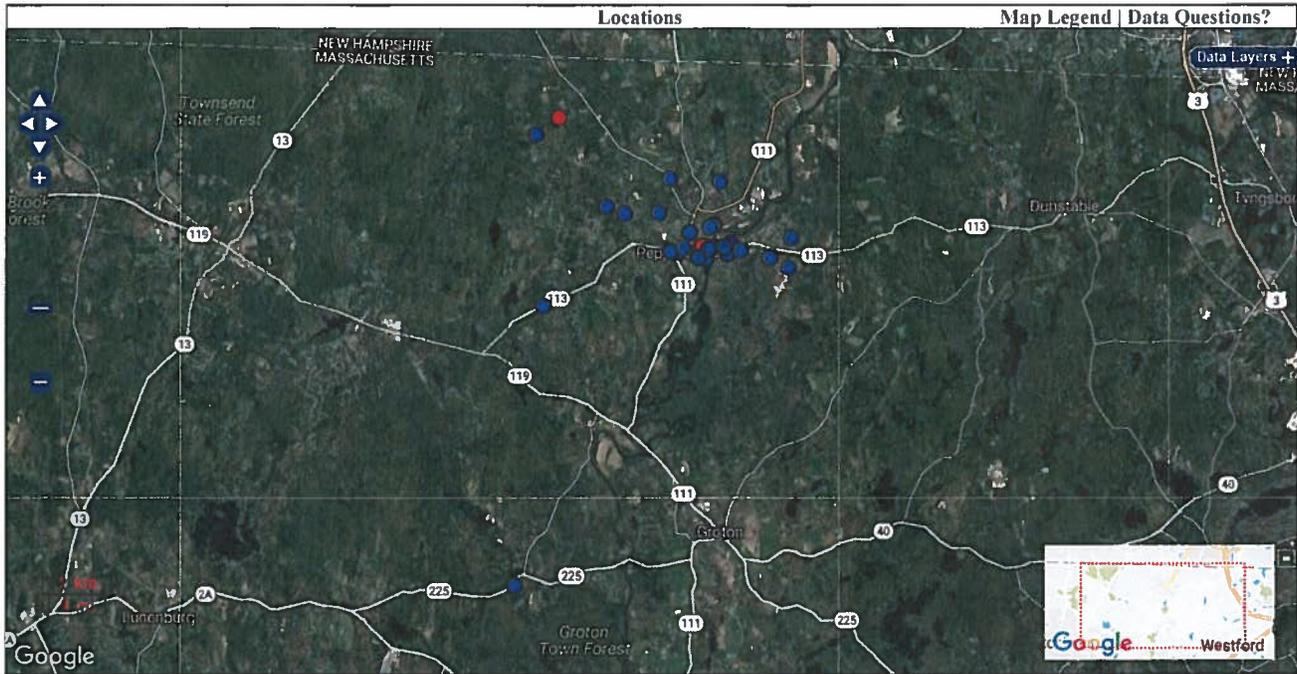
In order to identify critical Landscape Blocks in each ecoregion, different Ecological Integrity thresholds were used to select the largest intact landscape patches in each ecoregion while avoiding altered habitat as much as possible. This ecoregional representation accomplishes a key goal of *BioMap2* to protect the ecological stages that support a broad suite of biodiversity in the context of climate change. Blocks were defined by major roads, and minimum size thresholds differed among ecoregions to ensure that *BioMap2* includes the best of the best in each ecoregion.



## **APPENDIX E – Hazardous Waste**

### Hazardous Waste Sites and Spills

Reportable Release Lookup



● Open Sites ● Closed Sites ● Closed Sites with Use Limitation

The search returned 37 results | Search Keywords >> 'PEPPERELL' | Data last updated: 10/21/2016

Select	RTN	City/Town	Release Address	Site Name Location AId	Reporting Category	Notification Date	Compliance Status	Date	Phase	RAO Class	Chemical Type	Files	GIS
<input type="checkbox"/>	2-0000116	PEPPERELL	NASHUA RD RTE 111	PEPPERELL ABANDONED DRUMS	NONE	1987-01-15	DEPNFA	1993-09-03				Files	
<input type="checkbox"/>	2-0000447	PEPPERELL	324 MAIN ST	JAMES RIVER PAPER MILL	NONE	1988-10-15	WCSPRM	1995-02-21				Files	
<input type="checkbox"/>	2-0010320	PEPPERELL	128 MAIN ST	PEPPERELL PAPER CO	TWO HR	1994-05-27	RAO	1994-07-27		A1	Oil	Files	MAP
<input type="checkbox"/>	2-0010329	PEPPERELL	128 MAIN ST	PEPPERELL PAPER CO	TWO HR	1994-06-03	RAO	1994-07-20		A1	Oil	Files	
<input type="checkbox"/>	2-0011154	PEPPERELL	121 MAIN ST	CUMBERLAND FARMS 2038	72 HR	1996-03-11	RAO	2005-11-28	PHASE III	A2	Oil	Files	MAP
<input type="checkbox"/>	2-0011373	PEPPERELL	JERSEY ST	EXCAVATOR FIRE	TWO HR	1996-08-22	RAO	1996-10-22		A1	Oil	Files	MAP
<input type="checkbox"/>	2-0011517	PEPPERELL	PARKWOOD DR	POLE 4	TWO HR	1996-12-10	RAO	1997-02-07		A1	Oil	Files	MAP
<input type="checkbox"/>	2-0011705	PEPPERELL	45 BROOKLINE ST	RESIDENCE	TWO HR	1997-04-30	RAO	1997-06-27		B1	Oil	Files	MAP
<input type="checkbox"/>	2-0011786	PEPPERELL	121 MAIN ST	CUMBERLAND FARMS	TWO HR	1997-06-30	RAO	1997-09-05		A1	Oil	Files	MAP
<input type="checkbox"/>	2-0011832	PEPPERELL	BOYNTON ST	WETLANDS DOWNGRADIANT OF LANDFILL	TWO HR	1997-08-12	ADEQUATE REG	1997-08-14			Hazardous Material	Files	MAP
<input type="checkbox"/>	2-0012129	PEPPERELL	MAIN ST	TRANSFORMER POLE 55	TWO HR	1998-03-04	RAO	1998-05-14		A1	Oil	Files	MAP
<input type="checkbox"/>	2-0012362	PEPPERELL	49 MAIN ST	CIRCLE CITGO	72 HR	1998-08-24	RAO	2003-01-08	PHASE II	A2	Oil	Files	MAP
<input type="checkbox"/>	2-0012465	PEPPERELL	45 LOWELL RD	PEPPERELL DPW	72 HR	1998-10-22	RAO	2002-01-15	PHASE II	A2	Oil and Hazardous Material	Files	MAP
<input type="checkbox"/>	2-0013115	PEPPERELL	NEAR 114 TOWNSEND RD	WASTE MANAGEMENT CORP ROADWAY RELEASE	TWO HR	2000-01-04	RAO	2000-03-07		A1		Files	MAP
<input type="checkbox"/>	2-0013376	PEPPERELL	1 CHAPEL PL	CURWOOD INC	120 DY	2000-07-14	RAO	2001-01-11		B1	Hazardous Material	Files	MAP
<input type="checkbox"/>	2-0014232	PEPPERELL	HADLEY RD	TRANSFORMER NO 9	120 DY	2002-03-18	RAO	2002-03-18		A2	Oil	Files	MAP
<input type="checkbox"/>	2-0014507	PEPPERELL	33 CHACE AVE	NISSITISSIT MIDDLE SCHOOL	TWO HR	2002-10-07	RAO	2002-12-12		A2	Oil	Files	MAP
<input type="checkbox"/>	2-0014582	PEPPERELL		ROADWAY	TWO HR	2002-12-10	RAO	2003-01-17		A1	Oil	Files	MAP

Select	RTN	City/Town	Release Address	Site Name Location Aid	Reporting Category	Notification Date	Compliance Status	Date	Phase	RAO Class	Chemical Type	Files	GIS
			PLAINFIELD AND SARTELLE RD										
<input type="checkbox"/>	2-0014605	PEPPERELL	16 GROTON ST	SHATTUCK OIL COMPANY	120 DY	2002-12-31	RAO	2010-12-09		TN	Oil	Files	MAP
<input type="checkbox"/>	2-0015059	PEPPERELL	49 MAIN ST	CITGO STATION	TWO HR	2004-02-13	RAO	2004-02-19		A1	Oil	Files	MAP
<input type="checkbox"/>	2-0015425	PEPPERELL	9 RAILROAD ST	GRANTS CLEANERS	120 DY	2004-10-05	RAO	2006-01-25	PHASE II	A2	Hazardous Material	Files	MAP
<input type="checkbox"/>	2-0015443	PEPPERELL	16 GROTON ST P O BOX 273	SHATTUCK OIL CO.	72 HR	2004-10-20	RTN CLOSED	2004-12-22			Hazardous Material	Files	MAP
<input type="checkbox"/>	2-0015677	PEPPERELL	GROTON ST	MASSACHUSETTS ELECTRIC COMPANY	120 DY	2005-04-04	RAO	2005-10-03		A2	Hazardous Material	Files	MAP
<input type="checkbox"/>	2-0017275	PEPPERELL	15 LAWRENCE ST	RESIDENCE	TWO HR	2008-10-06	RAO	2009-10-01		A2	Oil	Files	MAP
<input type="checkbox"/>	2-0017306	PEPPERELL	52 GROTON ST	FORMER KEMPS GAS STATION	72 HR	2008-10-31	RAO	2008-12-31		A2	Oil	Files	MAP
<input type="checkbox"/>	2-0017571	PEPPERELL	9 RAILROAD ST	FORMER GRANTS DRY CLEANER	TWO HR	2009-07-01	TIER 1D	2010-07-08			Hazardous Material	Files	MAP
<input type="checkbox"/>	2-0018192	PEPPERELL	29 MILL ST.	FORMER PAPER MILL	TWO HR	2011-05-13	RAO	2012-05-14	PHASE IV	C1	Oil	Files	MAP
<input type="checkbox"/>	2-0018200	PEPPERELL	29 MILL ST.	POWER PLANT BUILDING	TWO HR	2011-05-16	RAO	2011-09-20		A1		Files	MAP
<input type="checkbox"/>	2-0018237	PEPPERELL	29 MILL ST.	FORMER PEPPERELL PAPER MILL	TWO HR	2011-06-16	RAO	2011-08-22		A1		Files	MAP
<input type="checkbox"/>	2-0018602	PEPPERELL	38 PARK STREET	POLE MOUNTED TRANSFORMER MODF RELEASE	TWO HR	2012-06-13	RAO	2012-08-13		A2		Files	MAP
<input type="checkbox"/>	2-0018742	PEPPERELL	23 - 29 HOLLIS STREET	CONWAY CHEVROLET BUICK, INC.	120 DY	2012-11-10	RAO	2012-11-29		B1	Hazardous Material	Files	MAP
<input type="checkbox"/>	2-0019286	PEPPERELL	22 LEIGHTON ST	VACANT PROPERTY	72 HR	2014-08-19	PSNC	2015-02-24		PN	Oil	Files	MAP
<input type="checkbox"/>	2-0019362	PEPPERELL	105 MAIN ST	HYDRAULIC OIL SPILL	TWO HR	2014-11-18	PSNC	2014-12-10		PN	Oil	Files	MAP
<input type="checkbox"/>	2-0019373	PEPPERELL	8 CHAPEL PLACE	FORMER BEMIS PROPERTY	120 DY	2014-10-08	TIER 2	2015-10-08	PHASE II		Hazardous Material	Files	MAP
<input type="checkbox"/>	2-0019449	PEPPERELL	16 GROTON ROAD	SHATTUCK OIL COMPANY	TWO HR	2015-03-10	RTN CLOSED	2016-03-08			Oil	Files	MAP
<input type="checkbox"/>	2-0019800	PEPPERELL	HOLLIS AND CROSS STREETS	HOLLIS STREET AND CROSS STREET	TWO HR	2016-02-26	PSNC	2016-04-22		PN		Files	MAP
<input type="checkbox"/>	2-0019837	PEPPERELL	LORDEN LAND	LORDEN LANE	TWO HR	2016-04-02	UNCLASSIFIED	2016-04-02				Files	

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## **APPENDIX F – SECTION 504: Handicapped Accessibility Self Evaluation**

Designation of Section 504 Coordination

Policy: People with Disabilities

Grievance Policy

Employment Application

Program/Facilities Accessibility and Transition Plan



# TOWN OF PEPPERELL

## BOARD OF SELECTMEN

August 14, 2015

To Whom It May Concern:

The Town of Pepperell's ADA Coordinator is Mark Andrews, Town Administrator.

The Town of Pepperell currently does not have any members on its Disabilities Commission due to lack of interest.

Sincerely,

Peggy Mazzola  
Administrative Assistant to the Board of Selectmen

**TOWN OF PEPPERELL**

**POLICY: PEOPLE WITH DISABILITIES**

It shall be the policy of the Town of Pepperell that no qualified handicapped person shall, on the basis of handicap, be excluded from participation in, be denied the benefits of, or otherwise be subject to discrimination under any program or activity.

Adopted: Board of Selectmen, April 13, 1998

**TOWN OF PEPPERELL**  
**EQUAL ACCESS TO FACILITIES AND ACTIVITIES**  
**GRIEVANCE POLICY**

Maximum opportunity will be made available to receive citizen comments, complaints, and/or to resolve grievances or inquiries.

STEP 1: The Town Administrator will be available to meet with citizens and employees during business hours.

When a complaint, grievance, request for program policy interpretation or clarification is received either in writing or through a meeting or telephone call, every effort will be made to create a record regarding the name, address, and telephone number of the person making the complaint, grievance, program policy interpretation or clarification. If the person desires to remain anonymous they may.

A complaint, grievance, request for program policy interpretation or clarification will be responded to within ten working days (if the person making the complaint is identified) in a format that is sensitive to the needs of the recipient, (i.e. verbally, enlarged type face, etc.).

Copies of the complaint, grievance, request for program policy interpretation or clarification and response will be forwarded to the appropriate department, Board, Commission or Town Agency with property or program jurisdiction. If the grievance is not resolved at this level it will be progressed to the next level.

STEP 2: A written grievance will be submitted to the Town Administrator. Assistance in writing the grievance will be available to all individuals. All written grievances will be responded to within ten working days by the Town Administrator in a format that is sensitive to the needs of the recipient, (i.e. verbally, enlarged type face, etc.). If the grievance is not resolved at this level it will be progressed to the next level.

STEP 3: If the grievance is not satisfactorily resolved, citizens will be informed of the opportunity to meet and speak with the Board of Selectmen, with whom local authority for final grievance resolution lies.

Adopted: Board of Selectmen, April 13, 1998

# APPLICATION FOR EMPLOYMENT

NAME: \_\_\_\_\_

POSITION: \_\_\_\_\_

DATE: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

We consider applicants for all positions without regard to race, color, religion, creed, gender, national origin, age, disability, sexual orientation, citizenship status, genetic information or any other legally protected status.

(PLEASE PRINT)

Position(s) Applied For	Date of Application
How Did You Learn About Us?	
<input type="checkbox"/> Advertisement	<input type="checkbox"/> Relative
<input type="checkbox"/> Employment Agency	<input type="checkbox"/> Friend
	<input type="checkbox"/> Inquiry
	<input type="checkbox"/> Other _____

Last Name	First Name	Middle Name
Address	Number	Street
	City	State
Telephone Number(s)	Social Security Number (Voluntary)	
	<del>XXXXXXXXXX</del>	

Best time to contact you at home is: \_\_\_\_\_:\_\_\_\_\_ <sup>AM</sup>/<sub>PM</sub>

If you are under 18 years of age, can you provide required proof of your eligibility to work?  Yes  No

Have you ever filed an application with us before?  Yes  No  
If Yes, give date \_\_\_\_\_

Have you ever been employed with us before?  Yes  No  
If Yes, give date \_\_\_\_\_

Do any of your friends or relatives, other than spouse, work here?  Yes  No

Are you currently employed?  Yes  No

May we contact your present employer?  Yes  No

Are you prevented from lawfully becoming employed in this country because of Visa or Immigration Status?  Yes  No  
Proof of citizenship or immigration status will be required upon employment.

Date available for work \_\_\_/\_\_\_/\_\_\_ What is your desired salary range? \_\_\_\_\_

Are you available to work:  Full Time (Please indicate 1 2 3 shift)  
 Part Time (Please indicate Mornings Afternoon Evenings)  
 Temporary (Please indicate dates available \_\_\_/\_\_\_ - \_\_\_/\_\_\_)

Are you currently on "lay-off" status and subject to recall?  Yes  No

Can you travel if a job requires it?  Yes  No

WE ARE AN EQUAL OPPORTUNITY EMPLOYER

## EDUCATION

School	Name and Address of School	Course of Study	Number of Years Completed	Diploma / Degree
Elementary School				
High School				
Undergraduate College				
Graduate/ Professional				
Other (Specify)				

## EMPLOYMENT EXPERIENCE

Start with your present or last job. Include any job-related military service assignments and volunteer activities. You may exclude organizations which indicate race, color, religion, gender, national origin, disabilities or other protected status.

Employer		Dates Employed		Work Performed
		From	To	
Address				
Telephone Number(s)		Hourly Rate/Salary		
Job Title	Supervisor	Starting	Final	
Reason for Leaving				
Employer		Dates Employed		Work Performed
		From	To	
Address				
Telephone Number(s)		Hourly Rate/Salary		
Job Title	Supervisor	Starting	Final	
Reason for Leaving				
Employer		Dates Employed		Work Performed
		From	To	
Address				
Telephone Number(s)		Hourly Rate/Salary		
Job Title	Supervisor	Starting	Final	
Reason for Leaving				
Employer		Dates Employed		Work Performed
		From	To	
Address				
Telephone Number(s)		Hourly Rate/Salary		
Job Title	Supervisor	Starting	Final	
Reason for Leaving				

Comments: Include explanation of any gaps in employment.


NAME: \_\_\_\_\_

POSITION: \_\_\_\_\_

DATE: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

Describe any specialized training, apprenticeship, skills and extra-curricular activities.


Describe any job-related training received in the United States military.


List professional, trade, business or civic activities and offices held.

You may exclude membership which would reveal gender, race, religion, national origin, age, ancestry, disability or other protected status:


**ADDITIONAL INFORMATION**

**Other Qualifications** Summarize special job-related skills and qualifications acquired from employment or other experience.


**SPECIALIZED SKILLS** (Check Skills/Equipment Operated)

<input type="checkbox"/> Terminal	<input type="checkbox"/> Spreadsheet	<input type="checkbox"/> Production/Mobile Machinery (list)	<input type="checkbox"/> Other (list)
<input type="checkbox"/> PC/MAC	<input type="checkbox"/> Word Processing	_____	_____
<input type="checkbox"/> Typewriter	<input type="checkbox"/> Shorthand	_____	_____
WPM _____	WPM _____	_____	_____

State any additional information you feel may be helpful to us in considering your application.


Note to Applicants: DO NOT ANSWER THIS QUESTION UNLESS YOU HAVE BEEN INFORMED ABOUT THE REQUIREMENTS OF THE JOB FOR WHICH YOU ARE APPLYING.

Can you perform the essential functions of the job, for which you are applying, either with or without a reasonable accommodation?  YES  NO

**REFERENCES**

Name	Phone Number
1. _____	_____
2. _____	_____
3. _____	_____

## APPLICANT'S STATEMENT

I certify that answers given herein are true and complete.

I authorize investigation of all statements contained in this application for employment as may be necessary in arriving at an employment decision.

This application for employment shall be considered active for a period of time not to exceed 45 days. Any applicant wishing to be considered for employment beyond this time period should inquire as to whether or not applications are being accepted at that time.

I hereby understand and acknowledge that, unless otherwise defined by applicable law, any employment relationship with this organization is of an "at will" nature, which means that the Employee may resign at any time and the Employer may discharge Employee at any time with or without cause.

In the event of employment, I understand that false or misleading information given in my application or interview(s) may result in discharge. I understand, also, that I am required to abide by all rules and regulations of the employer.

\_\_\_\_\_  
Signature of Applicant

\_\_\_\_\_  
Date

This Application For Employment is sold for general use throughout the United States. Amsterdam Printing assumes no responsibility for the use of said form or any questions which, when asked by the employer of the job applicant, may violate State and/or Federal Law.



Rev 11/13

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**Amsterdam**

## 2016 Pepperell Open Space and Recreation Plan Update Section 504 Self-Evaluation

**Designation of Section 504 Coordinator:**

The designated Section 504 Coordinator is Mark Andrews, Town Administrator. Included in Appendix F.

**Grievance Procedure:**

Included in Appendix F.

**Public Notification Requirements:**

The Employment Application and all job listings contain non-discriminatory statements. Included in Appendix F.

**Participation of Individuals or Organizations Representing Individuals with Disabilities:**

The Town of Pepperell does not have a Disability Commission

**Program Accessibility:**

All programs provided by the town are readily accessible and useable by persons with disabilities. Programs are held at facilities or buildings that provide full accessibility.

### PROGRAM/FACILITY/ACCESSIBILITY AND TRANSITION PLAN

The following inventory of facilities, programs, and services includes only those elements, under the jurisdiction of either the Conservation or Recreation Commissions, with specific provisions for public use. There are other parcels designated as conservation land with no road access, maintained trails, parking, or signage, and although they are technically open for public use, such use is not advertised or encouraged. Those parcels are not included in this inventory.

The Conservation Commission, working with the Nashoba Conservation Trust, will be evaluating all land trust and town-owned conservation property trails using guidelines established by the Department of Justice.

Currently, an ADA accessible trail is being constructed on town-owned library land by members of the Nashoba Conservation Trust. The trail is expected to be completed by the summer of 2017.

**CONSERVATION AREAS**

**Facility:** Keyes and Parker Conservation Areas/Sucker Brook

**Location:** 31 Oak Hill Street

**Manager:** Conservation Commission

Activity	Equipment	Assessment	Transition Plan
Parking	Gravel parking area	Accessible	N/A
Signage	Kiosk	Accessible	N/A
Scenic Views	Fields	Accessible from parking	N/A
Scenic Views	Pond	Not accessible from parking	Under evaluation

**Facility:** Pepperell Springs Conservation Areas

**Location:** Chestnut Street, Maple Street, Bayberry Street

**Manager:** Conservation Commission

Activity	Equipment	Assessment	Transition Plan
Parking	Gravel parking area	Accessible	N/A
Signage	Kiosk	Accessible	N/A
Trails	Unimproved surface, rocky, steep ravine	Not accessible	N/A

**Facility:** Nissitissit Meadows Conservation Area

**Location:** Prescott Street

**Manager:** Conservation Commission

Activity	Equipment	Assessment	Transition Plan
Parking	Gravel parking area	Accessible	N/A
Signage	Signs & kiosk	Accessible	
Trails	Mowed trail through meadow continuing to trail with uneven surfaces through woods, stream crossing, steep slopes	Not accessible	
Scenic Views	Fields	Accessible from parking	N/A
Scenic Views	Pond	Not accessible	Under evaluation

**Facility:** Heald Pond Conservation Area

**Location:** Heald Street

**Manager:** Conservation Commission

Activity	Equipment	Assessment	Transition Plan
Parking	Pull off on roadside	Not accessible-No room to make handicapped accessible parking	N/A
Signage	Signs & kiosk	Not accessible	N/A
Scenic Views	Pond	Accessible-fully in view from road	N/A
Trails	Unimproved surface, rocky woodland, steep slopes	Not accessible-slopes and obstacles are prohibitive	N/A

**Facility:** Heald Street Orchard

**Location:** Heald Street

**Manager:** Conservation Commission

Activity	Equipment	Assessment	Transition Plan
Parking	Gravel parking area	Accessible	N/A
Signage	Kiosk at East & West Gates	Accessible	N/A
Scenic Views	Orchard Views	DOJ Evaluation Needed	Under evaluation
Trails	Mown field lanes	DOJ Evaluation Needed	Under evaluation

**Facility:** Gulf Brook Conservation Area

**Location:** Oak Hill and Chestnut Streets

**Manager:** Conservation Commission

Activity	Equipment	Assessment	Transition Plan
Parking	Pull-off on roadside	Not accessible-No room to make handicapped parking space	N/A
Signage	Name of area only no kiosk	Not accessible	N/A
Trails	Unimproved woodland paths with steep slopes, stream fords	Not accessible	N/A

**Facility:** Stewart Brook Conservation Area/Mentions Pond

**Location:** Lawrence Street

**Manager:** Conservation Commission

Activity	Equipment	Assessment	Transition Plan
Parking	Pull-off on roadside	Not accessible-No room to make handicapped parking space	N/A
Signage	Name of area only, no kiosk	Not accessible	N/A
Trails	Unimproved woodland paths with steep slopes, stream	Not accessible	N/A

**Facility:** Blood Brook Ravine Trail

**Location:** Jewett Street

**Manager:** Conservation Commission

Activity	Equipment	Assessment	Transition Plan
Parking	Pull-off on roadside	Not accessible-No room to make handicapped parking space	N/A
Signage	Sign & kiosk	Not accessible	N/A
Trails	Unimproved woodland paths with steep slopes, stream fords	Not accessible	N/A

**Facility:** Nashua River Westside Trail/Walent

**Location:** Off River Road

**Manager:** Conservation Commission

Activity	Equipment	Assessment	Transition Plan
Parking	Gravel driveway and grassed parking area on DCR land	Grass not always mowed making ADA accessibility challenging – Drop off on gravel driveway possible	N/A
Signage	Sign, no kiosk	Accessible	N/A
Scenic Views	River	DOJ Evaluation Needed	Under evaluation

**Facility:** Bemis Road Conservation Area

**Location:** Bemis Road

**Manager:** Conservation Commission

Activity	Equipment	Assessment	Transition Plan
Parking	Pull-off on roadway	Not accessible-No room to make handicapped parking space	N/A
Trails	Unimproved walking paths, gate necessary to discourage vehicle access, steep slopes	Wetland crossings and steep banks	N/A

**Facility:** Canal Street Canoe Access

**Location:** Canal Street

**Manager:** Conservation Commission

Activity	Equipment	Assessment	Transition Plan
Parking	Pull-off on roadway	Not accessible-No room to make handicapped parking space	N/A
Signage	Kiosk	Not accessible	N/A
Kayak and canoe launching	Earth ramp into water	Not accessible	N/A
Scenic Views	River	Accessible	Visible from road

**Facility:** River Road Canoe Access/Pepperell Pond Launch

**Location:** River Road

**Manager:** Conservation Commission

Activity	Equipment	Assessment	Transition Plan
Parking	At end of gravel driveway	Not accessible-No room to make handicapped parking space	N/A
Signage	Signs & Kiosk	Not accessible	Eagle Scout Project Underway
Kayak and canoe launching	Unimproved steeper bank	Not accessible	N/A
Scenic Views	River	Accessible	Visible from parking area

**Facility:** Land Beside Covered Bridge

**Location:** Groton Street

**Manager:** Conservation Commission

Activity	Equipment	Assessment	Transition Plan
Parking	Pull-off on roadway	Not accessible	N/A
Trails	No trails – Mowed field	Not accessible	N/A
Signage	None	Not accessible	N/A
Scenic Views	Scenic Views of Nashua River from Covered Bridge	Accessible	Visible from roadside

**Facility:** Boy Scout Parcels

**Location:** Off East Street

**Manager:** Conservation Commission

Activity	Equipment	Assessment	Transition Plan
Parking	Pull-off on roadway	Not accessible-No room to make handicapped parking space	N/A
Signage	None		N/A
Trails	Unimproved walking paths, wetlands	Not accessible	

**Facility:** Nashua River Shoreline/Anderson

**Location:** Off Rail Trail

**Manager:** Conservation Commission

Activity	Equipment	Assessment	Transition Plan
Parking	None	N/A	N/A
Signage	None	Not accessible	N/A
Trails	Unimproved walking paths from rail trail through woods, wetlands	Not accessible	N/A

**Facility:** Town Forest Picnic Area

**Location:** River Road

**Manager:** Town Forest Committee

Activity	Equipment	Assessment	Transition Plan
Parking	Compact gravel area	Accessible	N/A
Signage	Name of property only, no kiosk		N/A
Picnic Facilities	3 handicapped accessible picnic tables	Accessible	N/A

The following Town-owned fields are jointly managed by several groups. Scheduling is handled by the Recreation Commission. The majority of the programs offered are run by private sports leagues.

### **RECREATION AREAS**

**Facility:** Margaret "Sis" McGrath Community Center

**Location:** One Hollis Street

**Manager:** Recreation Commission

Activity	Equipment	Assessment	Transition Plan
Parking	Paved 35 space parking lot	Accessible – 3 marked handicapped van spaces	N/A
Meeting Space	Activities Room (upstairs)	Accessible	N/A
Meeting Space	Activities Room (downstairs)	Access challenging through side door when snow is present	Under evaluation
Restrooms	2 ADA Facilities	Accessible to Upstairs Meeting Space	N/A

**Facility:** Town Field

**Location:** One Hollis Street

**Manager:** Recreation Commission

Activity	Equipment	Assessment	Transition Plan
Parking	Paved 35 space parking lot	Accessible -- 3 marked handicapped van spaces	N/A
Playground	Standard playground equipment - 2 handicapped swings	Accessible over crushed stone, compacted surface	N/A
Restrooms	Exterior bathrooms	Non-accessible	Under evaluation
Basketball courts	N/A	Accessible	N/A
Community festivals & activities	Lawn area	Accessible with entire back parking lot designated for handicapped parking	N/A

**Facility:** Bartelson Fields

**Location:** Jersey Street

**Manager:** DPW/Recreation Commission

Activity	Equipment	Assessment	Transition Plan
Parking	Gravel parking lot	Accessible from area along fence	Establish handicapped parking space(s)
Playing fields	Mowed fields	No barriers to accessibility	N/A
Viewing area	Portable bleachers	No barriers to accessibility	N/A
Bathrooms	Portapotty	Not accessible	Under evaluation

**Facility:** Kennedy Field

**Location:** Main Street (behind Police Station)

**Manager:** DPW/Recreation Commission

Activity	Equipment	Assessment	Transition Plan
Parking	Gravel parking lot	Not accessible	Establish handicapped parking space(s)
Playing fields	Mowed fields	No barriers to accessibility	N/A
Viewing area	Portable bleachers	No barriers to accessibility	N/A

**Facility:** Comisky & Town Fields

**Location:** Hollis Street

**Manager:** DPW/Recreation Commission

Activity	Equipment	Assessment	Transition Plan
Parking	Paved parking lot with handicapped spaces	Accessible	N/A
Playing fields	Mowed fields	No barriers to accessibility	N/A
Viewing area	Portable bleachers	No barriers to accessibility	N/A

**Facility:** Varnum Brook Fields

**Location:** Hollis Street (behind Varnum Brook Elementary School)

**Manager:** DPW/Recreation Commission

Activity	Equipment	Assessment	Transition Plan
Parking	Paved parking lot	Not accessible	Establish handicapped parking space(s)
Playing fields	Mowed fields	No barriers to accessibility	N/A
Viewing area	Portable bleachers	No barriers to accessibility	N/A

**Facility:** Leao Fields

**Location:** Tucker Street (behind Nissitissit Middle School)

**Manager:** DPW/Recreation Commission

Activity	Equipment	Assessment	Transition Plan
Parking	Paved parking lot	Not accessible	Establish handicapped parking space(s)
Playing fields	Mowed fields	No barriers to accessibility	N/A
Viewing area	Portable bleachers	No barriers to accessibility	N/A