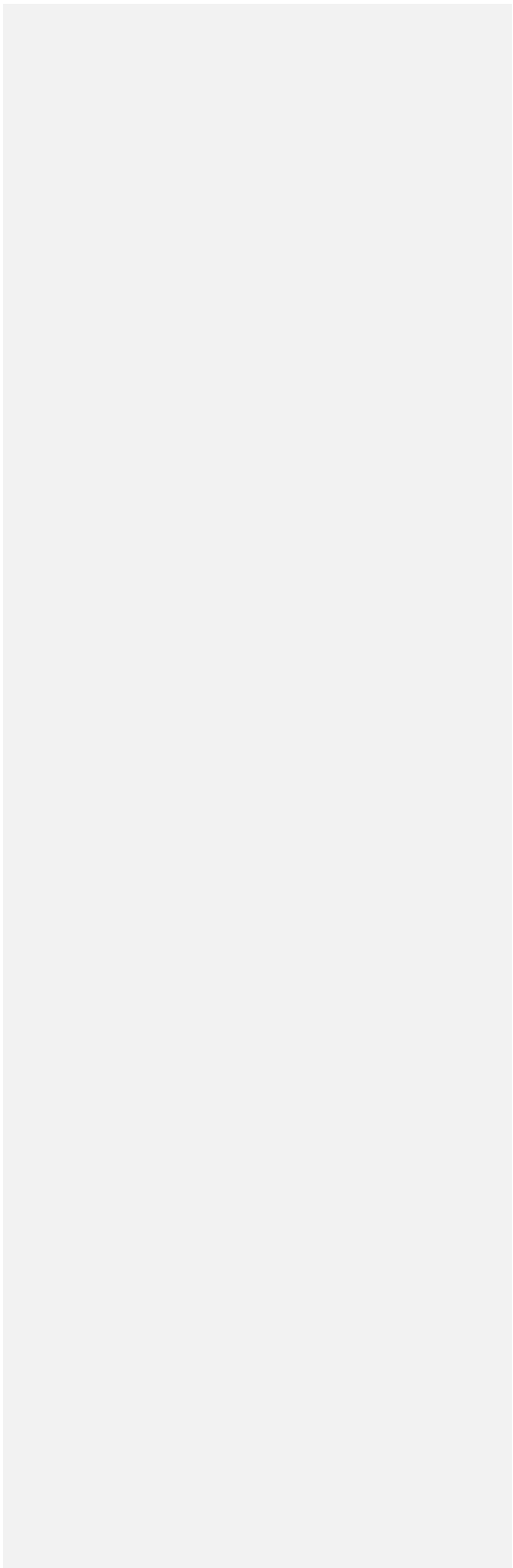


# **TOWN OF BOXFORD**

OPEN SPACE AND RECREATION PLAN 2023 **DRAFT**



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## Section 1 - Plan Summary

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The *Boxford Open Space and Recreation Plan Report* is a community-wide inventory of land parcels and residents' perspectives on the acquisition, maintenance and utilization of Boxford's open space areas. The format of this report follows the model plan report as outlined in the 2008 guidelines entitled *Open Space and Recreation Plan Requirements* developed by the Executive Office of Energy and Environmental Affairs, Division of Conservation Services.

This report was compiled by the Boxford Open Space and Recreation Plan Committee (OSRPC), a group of residents appointed by the Board of Selectmen in October 2022. Ideally, this report should be updated at least at five-year intervals in order to be available for immediate consideration of the Commonwealth's allocation of Land Acquisition for Natural Diversity (LAND), Parkland Acquisitions and Renovations for Communities (PARC) and other state administered grants and for on-going consideration of local planning support.

The protection of water resources, rural character and wildlife habitat and the provision of adequate open space for active and passive recreation are considered priorities for Boxford. Thus, steps to facilitate the protection of the town's natural resources and to develop additional open space for recreation through the preservation, development and management of key parcels of land should be the focus of the town's future endeavors.

The protection of water resources is critical for many obvious reasons. The development of parcels abutting ponds and streams can result in a significant adverse impact on water resources, making the permanent protection of parcels abutting ponds and streams of utmost importance. Because the number of remaining large parcels is limited and development of any large parcel can have a significant impact on the rural character of the town, large parcels should be given careful consideration by the town for acquisition. Likewise, because the preservation of parcels abutting other previously protected parcels can create "greenway corridors", critical to the rural character of the town and wildlife habitat, parcels abutting other protected open space should be considered a priority for preservation. The permanent protection of larger parcels and parcels abutting other protected parcels has the collateral benefit of protecting the trail system in Boxford and providing areas for active recreation which are connected to large areas of open space.

In developing this OSRP, the OSRPC was mindful of responses of Boxford residents to the town-wide survey, of feedback from public forums, and of written statements from town committees and boards. Nearly all residents who responded to the community survey were concerned about the protection of water resources. Boxford residents expressed an overwhelming appreciation of its rural character, woodlands and farms, with many residents indicating that nature and rural character are what they value most about the town. Given this appreciation, it is not surprising that birding was the top rated activity with protection of water and wildlife habitat ranking numbers 1 and 2 and the on the survey.

The OSRPC developed a seven-year action plan based on the results of the survey and input from many residents, town committees and interested parties. It is hoped that the plan and its goals can be actively addressed in order to serve the town of Boxford for its current residents, preserving the quality of life that Boxford's open spaces help provide for generations to come.



*Figure 1. Davis Hayfield.*

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## Section 2 - Introduction

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### A - Statement of Purpose

The purpose of this plan is to: 1) inventory existing open space parcels in town, including the opportunities they provide for active (football, lacrosse, soccer, tennis, etc.) and passive (walking, jogging, horseback riding, etc.) recreational use; 2) to determine the town's needs for open space within the next seven years; 3) to assess the issues affecting the availability, preservation and acquisition of open space within Boxford; and 4) to develop long-term goals, objectives and plans to proactively meet the town's open space and recreation needs. The Open Space and Recreation Plan recognizes that Boxford's open space and character doesn't exist by accident, but rather is the product of decades of planning and generations of Boxford residents taking an active role in community preservation and land use management. These efforts are driven by the desire to preserve the town's rural character and provide residents with open space for both active and passive recreation.

The Open Space and Recreation Plan benefits greatly from the work undertaken by five predecessor committees in 1988, 1994, 2001, 2008 and 2015. In 1994, 2001, 2008 and 2015, and will continue to build off of these previous efforts. Since the previous Plan update, this commitment led to the town's acquisition of the Haynes and Nason and Bergstrom properties, renovation of the playground at Cole School, reconstruction of the dam at Stiles Pond, and rebuilding of the culvert with new stone bridge over Fish Brook in Lockwood Forest. Approval of a \$5 million open space serial bond in 1997 for the acquisition of conservation properties and the town's adoption of the Massachusetts Community Preservation Act in 2001, provides a funding mechanism for the acquisition of open space for conservation, recreation, and historic preservation and affordable housing. The OSRPs issued by the four previous committees reflected the town's strong commitment to open space and provided a firm foundation and approach with which to initiate the 2023 update.

Now, in light of increased development in Essex County, and subsequent impacts on traffic safety in the town, this OSRP update was initiated in order to recognize the town's open space and recreation needs and facilitate meeting those needs through a seven- year action plan.

Within this plan, the term "open space" shall include agricultural land; fields; land to protect existing and future public water supplies, well fields, aquifers and recharge areas; fresh water marshes, vernal pools and other wetlands; conservation land; forests; river, pond, stream and lake frontage; land for wildlife habitat; scenic vistas and heritage landscapes; and land for recreational use. The term "recreation" shall include both active and passive recreation, including the use of land for hiking, horseback riding, organized youth and adult sports, and playgrounds. These definitions are consistent with those in the *Open Space Planner's Workbook* and with those terms in the Massachusetts Community Preservation Act, M.G.L. Ch. 44B.

### B - Planning Process

The Open Space and Recreation Plan Committee convened in October of 2022 to initiate the planning process. The committee consisted of five individuals—Lisa Donahue, Jessica Grigg, Doug Hamilton, Holly Langer, and Dennis Pyburn—who sit on other town boards or committees as well—the Planning Board, BTA/BOLT, the Conservation Commission, and the Recreation Committee. Meetings were held monthly and were posted on the town website \_\_\_ days in advance. This group consisted of members from \_\_ (city council, planning board etc). (name) researched xyz for the plan. Jessica Grigg was the primary writer of the plan. Merrimack Valley Planning Commission reviewed the plan's contents.



The planning committee initiated this update by collecting background information and conducting an inventory of resources to provide a basis for the plan update and analyze the town's current open space and recreation needs. The committee then formulated goals and objectives of the update, informed by public engagement, which molded into a seven year plan for implementation. The plan was further reviewed by staff and municipal boards for comment and revision, and a series of 14 public meetings, a survey mailed February 13-18 and an online survey posted and accessible from February 16, and other outreach was conducted to engage the public and obtain their feedback, including a public meeting on June 22.

This draft open space and recreation plan was prepared following the guidelines established by the Massachusetts Division of Conservation Services for the preparation of state-approved open space and recreation master plans.

### **C- Public Participation**

The OSRP committee revised the previous survey and in March mailed postcards townwide with QR codes for the online version. Respondents had approximately three weeks to complete the survey online or to return it to town hall. The survey was also available online and posted on the town website and on other websites that serve the community. A link to the survey was also emailed to several constituent groups.

Over 410 surveys were submitted, representing about 15% of Boxford households. Almost all respondents completed the survey electronically. The results of the survey appear, along with the written comments, as an appendix to this report (Appendix III). The 2023 survey is a reaffirmation of the town's commitment and interest in the preservation of open space and the town's natural resources and in meeting the recreation needs of the town's residents. Results of the survey, along with other public input, were used to identify the open space and recreation needs of the town and, consequently, the goals and objectives. One strong advantage Boxford has is a remarkable commitment to the town as demonstrated in the large number of dedicated volunteers who serve on all town committees.

Beyond this survey, the public was engaged via Zoom meetings, in-person presentations, and input was requested from the various town boards.

The various forms of public engagement pursued by the Open Space and Recreation planning committee aided greatly in informing the concerns and issues facing Boxford's preservation of open space and recreation opportunities since the prior report. While the town has made great progress in the preservation of open space, it is clear that needs for additional open space and recreational opportunities remains in the community. Boxford will have to plan carefully for its growth with this in mind. Working with the regional planning agency (the Merrimack Valley Planning Commission), regional resource protection organizations, and with the involvement and commitment of the town's numerous volunteers and committees, it is hoped that the town can meet the open space and recreation needs of its residents through proactive and creative approaches.

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## Section 3 - Community Setting

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### A - Regional Context

The town of Boxford is located in north-central Essex County in the state of Massachusetts. It covers approximately 24 square miles or 15,611.3 acres, and extends over ten miles along a southeast to northwest axis. The northernmost point is 1.5 miles from the Merrimack River, bordering the towns of North Andover and Haverhill (Bradford). The southernmost border with Topsfield and Middleton is formed by the Ipswich River and its tributary, Fish Brook. The Atlantic coastline, through neighboring Ipswich, is an average 10 miles distant, easterly. Other towns sharing common boundaries are: Rowley, Georgetown and Groveland. The cities of Boston, Salem, Lowell, Lawrence and Newburyport are all within a 30-mile radius of the town.

Boxford is roughly divided into two portions, once referred to as First and Second Parishes, and currently referred to as Boxford Village and West Boxford Village. The topography throughout the town generally varies from large glacial outwash plains and kame and esker formations in the eastern portion to large undulating drumlins and alluvial plains in the western portion. The town is considered to be rural indicative of its agricultural past. Once a "blue-collar" farming town, the post-1945 suburban and urban expansion and improvement of federal and state transportation infrastructure have prompted Boxford into becoming an upper-income suburb of Boston, commonly referred to as a "bedroom community."

Boxford is rich in water resources. The watershed areas are mainly divided into those tributaries contributing to the Ipswich River and the Parker River. A third smaller area contributes to the Merrimack River. Hovey's, Johnson's and Chadwick (Lily) Ponds within this area are reserve water supplies for the City of Haverhill and Groveland. All of Boxford's private residences are supplied by private wells, whereas neighboring towns have combination private/public or exclusively public water supplies. According to records at the Massachusetts Department of Environmental Protection (Mass DEP), there are 17 public water-supply wells in town. Considerable attention has been paid in the past to conserving this valuable resource. Conservancy Districts (outlined on the Historic Districts map in Appendix II), as well as a few permanent Conservation Restrictions, are used to protect aquifer recharge areas. The Planning Board, Board of Health and Conservation Commission regulations also protect local watershed areas.

To control density and maintain water quality, Boxford began in 1955 to require a minimum of two-acre residential lot size. However, continued development of increasingly marginal land today has raised public concern over the maintenance of adequate aquifer protection buffer areas and Boxford's rural character. Since 1994, Boxford voters have responded to development pressures by approving pond overlay districts and various bylaws set back distances away from wetland resource areas.

Several state forests are contained within the town and are shared with neighboring towns, including Willowdale, Baldpate Pond, Georgetown-Rowley and Boxford State Forests. The Boxford Bay Circuit Program Committee (1990-1991) has established the initial segment dedication of a passive recreational trail linking these existing permanently protected open spaces and various unprotected, privately owned open spaces. This will form part of the 200 mile Bay Circuit Trail, from Newbury to Kingston, Massachusetts. The second edition of a guidebook *The Bay Circuit Guide to Walks in and around Boxford* has been compiled by Boxford Trail Association/Boxford Open Land Trust (BTA/BOLT, Inc.) The premise of the Bay Circuit is to further the creation of this regional recreational system and promote the development of this intrastate greenway through future land acquisition.

## **B - History of Boxford**

At the time of European settlement in the 17th century, the territory of much of the North Shore, including present day Boxford, was in the domain of Masconomo, Sagamore of the Agawams. The Agawams were a sub-tribe, probably of the Pawtucket or Massachuset Tribe. Seasonal encampments were established along the coast and near fresh water, such as the Ipswich and Parker Rivers. The Agawam population was depleted by inter-tribal war and by European-borne diseases. Masconomo sought the protection of the Commonwealth and eventually deeded the rights to his domain to John Winthrop Jr. in 1633 for 20 pounds, thus initiating permanent English settlement north of Salem.

The influx of new English immigrants in the 1630s-1640s, competitive farming practices and the breaking up of large inland land-grants led to the settlement of what was then the western portion of Rowley, between 1645-1650. Known as Rowley Village and set on a plain north of the "fishing brook", the town had six initial land grants of 30-60 acres each. The house lots were fairly spread out around central common land. Two thoroughfares were laid out circa 1650-1660: one path leading from the Topsfield meeting house roughly parallel to the Fish Brook (Topsfield Rd./Main St.), and the second path perpendicular to the first, running to common land. Two other county thoroughfares were built that connected Andover with Ipswich and Newbury. Neither of these roads accessed the village center but contributed to increased settlement in the western portion of the village.

Agriculture and animal husbandry were the main occupations of town residents.

To establish their own minister, the villagers petitioned the General Court and were granted township, choosing the name Boxford on August 12, 1685. However, it would take another seventeen years before they would actually hire a minister or decide on a location for the meeting house. The original bounds of Boxford then contained portions of the present towns of Middleton, Georgetown and Groveland. The deed to the town was settled amongst Masconomo's three grandsons in 1701, in exchange for "silver, rum and vittles enuf."

By the mid-19th century, the amount of land under use for agricultural purposes had peaked. Many families whose main occupation had been agriculture, now supplemented income with low-scale manufactories and had begun to realize modest wealth associated with nearby urban markets and the maritime trade. Rail service, introduced in 1854, facilitated shipment of marketable goods and the movement of people. This was an enticement to city dwellers to summer here. Eventually, as the amount of agricultural land declined toward the late 19th-early 20th century, other methods were employed to maintain the farm: dairying, fodder production, domestic livestock and broods. Specialized crops and truck farming became common. The population sought opportunity elsewhere and dropped from its 1860 high of 1020 to a 1925 low of 581. Much of the landscape reverted from open fields and pastures back to woods.

Up until the period around 1945, not much had changed in the overall agricultural traditions or the quiet rural atmosphere that had been such a prevalent feature of Boxford since early settlement. Farms that did remain were often larger, centralized operations that had specialized functions and did their best to remain economically competitive and financially solvent.

Then came the highway. According to the town's 2007 Master Plan, the opening of Interstate 95 in the 1950s accelerated Boxford's transition to a residential community whose residents work outside of the town and are not reliant on farming. Boxford's close proximity to Boston, high quality schools, and peaceful rural character fueled the increasing value of land to the point where it was far more attractive for landowners to develop their properties than use them for farming. By mid 1995, Boxford had experienced a rapid increase in the number of homes being built and the town began a process of acquiring land for open space to curtail development and protect agriculture and natural resources. The increased population also

prompted the need to expand municipal facilities. From 1995 to 2007, Boxford built a new police station, a new town hall, upgraded the fire stations, improved its roads, and expanded its schools and athletic fields. From 2007 to present, Boxford renovated Lincoln Hall, purchased an adjacent property for a parking lot, and small picnic area and the West Village Improvement Society constructed a gazebo on town land in the West Boxford Village. From 1995 to present, Boxford has purchased a significant amount of land for open space, including a small portion for recreation and community housing.

## C - Population Characteristics

### 1. Population Trends and Density

Until the construction of I-95 in the 1950s, Boxford was mainly an agricultural town. With Boston in commuting distance, the population increased 49% from 1970 to 1990. The town now has two elementary schools and is part of a regional high school system. Recreational facilities, both active and passive, are available. However, as the human population increases within the finite area of our community, an increasing burden will be placed on our constructed infrastructure which includes our existing roadways, municipal buildings and school facilities. An additional burden will inevitably be placed on our natural resources including our groundwater reserves and open space areas.

Though chiefly a bedroom community, Boxford has historically had some limited industry. According to the Boxford Reconnaissance Report - Essex County Landscape Inventory, published by the Massachusetts Department of Conservation and Recreation and the Essex National Heritage Commission in 2005, there were several small shoe factories and textile, shoe peg and sawmills in town in the mid and late 19th century. In 1867 a match factory was founded on Fish Brook, near the current intersection of Main Street and Lawrence Road, which continued to produce matches into the early 20th century. Mill-based industrial activity was never a large contributor to the economic base of Boxford due to the limited waterpower available compared to mill towns along the Merrimack River, such as Lawrence and Lowell.

Commercial activity in Boxford is currently limited to the two village centers (Boxford Village and West Boxford Village) and a small commercial development in the north central section of the town, near the Georgetown line. Each Town Center contains a post office and a general store with limited economic activity. Other business activity is tied to the land and includes farms, farm stands and a golf course.

Boxford provides housing for senior citizens at Four Mile Village, 55-and-older at The Willows at Boxford and affordable housing at Andrews Farm. In addition, certain in-law apartment arrangements are sanctioned by zoning bylaws. These types of comparatively dense housing arrangements create additional sewage and water considerations and increase the need to ensure proper planning by the town for future water protection measures.

**Table 1. Boxford Census Counts 1940-2020**

Census Year	Persons	Increase (%)
1940	778	-
1950	926	19.0%
1960	2,010	117.0%
1970	4,032	100.0%

1980	5,374	33.0%
1990	6,266	16.6%
2000	7,921	26.4%
2010	7,965	00.6%
2020	8,316	4.4%

Table 1. *Boxford Census counts 1940-2020.*

Between the town’s incorporation in 1685 until 1950, a period of 265 years that included the social disruptions in America caused by a Revolutionary War, a Civil War and two World Wars, Boxford’s population reached a high of 1,014 persons. The town’s population continued to grow substantially over the later half of the 20<sup>th</sup> century, with the greatest increase between 1960 and 1970 of 100%. The population increase has since slowed, with a relatively small increase between 2010 and 2020 of 4.4%. The following demographic data reflect the latest information available regarding population and population densities.

**Area** 24.39 sq. miles  
**Population** 8,605

**Population density – persons per sq. mile**

1950	38
1994	287
2000	324
2010	327
2014	346
2022	352

**Voters** 6,538

**Housing units** 2,758

**2. Number and Age of Residents**

The table and graphic below summarize population trends in Boxford between 2010 and 2020.

**Table 2. Boxford Population Distribution Trends by Age, 2000-2010**

Age Spans	2010	2020	Change	Change (%)
Under 5 years	324	328	4	1%
5 to 9 years	604	522	-82	-14%
10 to 14 years	795	678	-117	-15%
15 to 19 years	671	652	-19	-3%
20 to 24 years	271	279	8	3%
25 to 34 years	345	597	252	73%

35 to 44 years	922	686	-236	-26%
45 to 54 years	1768	1635	-133	-8%
55 to 59 years	704	675	-29	-4%
60 to 64 years	512	765	253	49%
65 to 74 years	609	792	183	30%
75 to 84 years	330	466	136	41%
85 years and over	110	241	131	119%
<b>Total population</b>	<b>7,965</b>	<b>8316</b>	<b>351</b>	<b>4%</b>

Table 2. Boxford Population Distribution Trends by Age from 2010-2020.

Figure 2. Boxford Population Distribution Trends by Age, 2010-2020

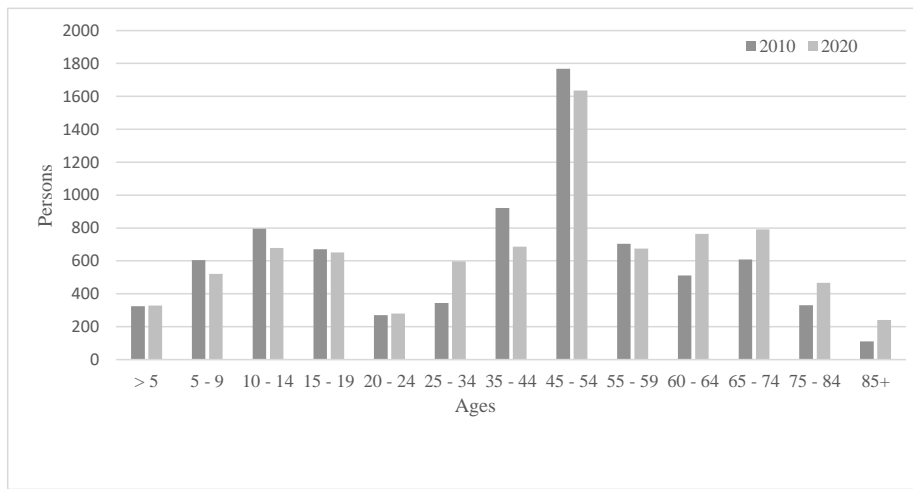


Figure 2. Boxford Population Trends by Age 2010-2020.

The previous table and graphic show that between 2010 and 2020 the population grew by 4%. Age group trends over the past decade include a decreasing number of children/young adults up to the age of ~20 years old, and an increase in adults over 60 years old. The most notable changes include:

1. greatest decrease as a percentage: Adults 35-44 years old
2. greatest decrease in numbers of the population: Adults 35-44 years old
3. greatest increase as a percentage: Adults 85+ years old
4. greatest increase in numbers of the population: Adults 60-64 years old

As can be seen from the above information, over half of the population of Boxford (55%) was over the age of 45 in 2020, like most other communities throughout the commonwealth and the country Boxford is aging. This will lead to the need for more elderly housing and recreational facilities such as indoor program areas and accessible walking trails. The town's aging population will also need more passive recreational

opportunities, like accessible bird watching locations, additional paved trails, and additional seating in park areas. While the town does have programs for the elderly at 10 Elm these may need to be expanded as well.

The town does have recreational facilities available for the handicapped and a camp for handicapped youth at Camp Sacajawea run by the Greater Lawrence Educational Collaborative. Also, BTA/BOLT, Inc. manages many miles of trails throughout Boxford that are open to the public for hiking, biking and horseback riding

### 3 – Income

According to the American Community Survey estimates from the Census, the median household income in Boxford has grown from \$113,212 in 2014 to \$179,375 in 2020 which is a 63% increase. In 2020 Boxford’s median income of \$179,375 was over twice the county and state median at \$82,225 and \$84,385 respectively. The table that follows shows the shifts in Boxford’s Household Incomes from 1999 through 2020.

**Table 5. Boxford Household Income, 1999-2020**

<b>Household Income</b>	<b>1999</b>	<b>(%)</b>	<b>2014</b>	<b>(%)</b>	<b>2020</b>	<b>(%)</b>
Less than \$10,000	42	1.6	11	0.4	19	0.7
\$10,000 to \$14,999	0	0.0	33	1.2	0	0.0
\$15,000 to \$24,999	98	3.8	88	3.3	18	0.6
\$25,000 to \$34,999	62	2.4	66	2.5	151	5.3
\$35,000 to \$49,999	163	6.4	184	6.9	55	1.9
\$50,000 to \$74,999	367	14.3	169	6.3	226	7.9
\$75,000 to \$99,999	303	11.8	282	10.6	274	9.6
\$100,000 to \$149,999	626	24.5	648	24.3	338	11.8
\$150,000 or more	899	35.1	1,190	44.6	1,772	62.1
Households, total	2,560		2,671		2,853	
<b>Median household income</b>	<b>\$113,212</b>		<b>\$127,813</b>		<b>\$179,375</b>	

*Table 3. Boxford Household Income, 1999-2020.*

### 4 – Environmental Justice and Equity

In 2002 the Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA) adopted an Environmental Justice Policy to provide equal protection and meaningful participation for all Massachusetts residents with respect to environmental regulations and policies. This policy also supports equitable access to environmental assets, which include parks, open space, and recreation areas. The State has identified communities that contain Environmental Justice Populations – those with high percentages of minority, non-English speaking, low-income, and foreign-born populations.

Boxford has a very small minority population (% of population in census), and what appears to be a relatively stagnant number of households at poverty level (2.2% in 2014). Boxford does not have any state identified Environmental Justice communities (which would represent a combination of these characteristics). While Boxford does not have any identified EJ populations, this plan considers ways to reduce inequities in access to parks and recreation amenities.

**D - Growth and Development Patterns**

**1 – Patterns and Trends**

As one looks back from the present time within the 21st century to the beginning of the 20th century, perhaps the most significant land use change has been the remarkable rise of residential development in rural areas. Industrialization increased both the number of people in formerly rural areas and the amount of leisure time, decreasing the use of the land for traditional agricultural purposes. New roadways and improved means of transportation helped extend cities and towns into outlying suburban areas. Boxford and surrounding towns are caught between an agrarian, rural past and a suburban future of increased residential development.

The first concerns for future development were addressed in 1940-41 when a monograph listing the town’s natural assets was prepared by a team of state and county planners. As a need for moderately priced housing arose, Boxford’s first zoning bylaws were adopted in 1946. Following World War II, development was guided by local zoning bylaws, most notably a two-acre minimum house lot size which was adopted in 1955. The completion of Interstate 95 (I-95) through town in the early 1950’s led to a dramatic rise in population.

Many of the once-dormant farm pastures, wood lots and fields were slowly subdivided and developed. Although several small areas in town were zoned or grandfathered for business use, there were no industrial areas. Also, in the early 1970’s, the large Commercial Zone around Baldpate Pond was rezoned back to Residential-Agricultural.

Now, Boxford holds 2,853 total housing units, with almost all of them occupied by owners, and very few vacant households. Note that the Willows Development will add 66 units of 55-and-older housing.

The following show the changes in housing from 2000 to 2020.

**Table 7. Boxford Household Characteristics, 2000-2020**

Characteristics	2000	2010	2020
Total households	2,568	2,688	2,853
Family households	2,255	2,289	2,506
Average household size	3.08	2.96	2.91

*Table 4. Boxford Household Characteristics, 2000-2020.*



In order to plan for future growth, the town has conducted numerous build-out analyses. The latest analysis, conducted for the 2007 Master Plan, used the following assumptions: 10 acre or greater vacant, occupied and/or Chapter 61 and 61A lots may be developed;

- Existing pork-chop lots cannot be further subdivided;
- Existing two (2) acre zoning is maintained;
- An allowance of 8% for roadways is provided;
- No building will occur in Conservancy Districts or in wetland areas;
- No building will occur on land that is constrained by deed restriction.

## **2 - Transportation**

The primary cause of growth since 1950 has been the open flow of interstate traffic along I-95 through a portion of east Boxford. Boxford's short commuting distance to metropolitan Boston (about 25 miles) and its rather close proximity to New Hampshire and Maine for shopping and recreation visits make Boxford very attractive to long-term residents and prospective newcomers alike. Commuter rail service is available in adjacent towns. The town is currently not serviced by any commuter buses through MEVA. Major thoroughways that are experiencing increased daily traffic volume within Boxford include Route 133, Route 97, Main Street, Lawrence Road, Topsfield Road, Kelsey Road, and Ipswich Road.

The town's primary form of transportation is driving, with primarily country roads and spread out infrastructure making both walking and biking difficult unless on trail. The only trails that are viable for transportation across the town and to other communities are the Border-to-Boston Trail, and the Bay Circuit Trail.

## **3 – Water Supply**

All of the potable water used by Boxford residents is obtained from wells. The water supply for private residences is derived almost exclusively from private wells located on each individual residential property. Private wells in town rely primarily on the Ipswich River watershed, which supplies 350,000 homes as of 2019. In the summer of 2022 this water resource experienced a severe drought, raising concern for citizens utilizing private wells. A legislative proposal brought forward by Senator Bruce Tarr in the current legislative session seeks to promote effective drought management in communities which utilize the Ipswich River, so private wells may continue to draw upon it for years to come. The careful design and permitting of wells, septic systems, and wetland alteration by the Board of Health and the Conservation Commission is of critical importance in safeguarding Boxford's drinking water supplies. Future growth may necessitate the need for a third and possibly a fourth potential source of protected water supply. The town wells could eventually become fitted out and be used as emergency sources of water for firefighting.

There are a limited number of public water supply wells in Boxford subject to State mandated water quality testing and reporting. These wells are as follows and are tabulated with respect to their DEP identification numbers and flow rates. The Andrews Farm and Four Mile Village housing developments each operate a Community Public Water Supply well and water distribution system serving their respective housing units. Public water supply wells also serve a limited number of commercial establishments in town, consisting of the Boxford Community Store, the Boxford Meeting Place (Georgetown Limited Partnership Building Well No. 1), the Boxford Village Store, Ingaldsby Farms, Nasons Farm, the Four Corners Golf Course, and the office building at 200 Washington Street. Additional public water supply wells serve the Spofford Pond School, the Harry Lee Cole School, the First Congregational Church, the Second Congregational Church, Camp Denison, the Boxford West Library, the Boxford East Library, the Town Beach at Keith Koster Park

(Stiles Pond), and the Town Hall/DPW/Police Station complex. The following table indicates information taken from the MassDEP's list of public water supplies in Boxford.

**Table 6. Usage of Recreational Fields & Facilities**

Public Water Supply Name/Source Name	Mass. DEP Source ID	Gallons Per Day	Zone I Radius (feet)	IWPA Radius (feet)	Mass. DEP Susceptibility
<b>Four Mile Village*</b> Well No. 1	3038001-01G	9,048		NA	
<b>Four Mile Village*</b> Well No. 2	3038001-02G	6,786	240	NA	
<b>Four Mile Village*</b> Well No. 3	3038001-03G	10,080	210	NA	
<b>Spofford Pond School‡</b> Rock Well	3038008-01G	7,860	240	NA	
<b>Harry Lee Cole School‡</b> Cole School Well	3038009-01G	21,600	180	538	High
<b>The Village Store†</b> Blaines Store Well	3038010-01G	955	100	421	
<b>First Church Congregation†</b> Rock Well	3038011-01G	385	100	409	Moderate
<b>Far Corner Farm Golf Course†</b> Well No. 1	3038012-01G	2,500	160	456	
<b>Far Corner Farm Golf Course†</b> Well No. 2	3038012-02G	2,500	160	456	
<b>Boxford Community Store†</b>	3038013-01G	1,225	113	427	High
<b>Andrews Farm Water Co.</b> Well No. 1*	3038020-01G	23,760	306	928	Moderate
<b>Georgetown Limited Partnership Building†</b> Well No. 1	3038021-01G	1,848	170	464	Moderate
<b>Ingaldsby Bakery &amp; Farm Stand†</b> Well No. 1	3038022-01G	1,000	100	422	High
<b>200 Washington Street†</b> Well No. 1	3038023-01G	1,000	100	422	Moderate
<b>East Boxford Library†</b> Well No. 1	3038024-01G	300	100	407	Moderate
<b>Second Congregational Church†</b>	3038025-01G	300	100	422	
<b>Boxford Police Station‡</b>	3038026-01G	2,160	150	448	

Table 5. MassDEP's list of public water supplies in Boxford.<sup>1</sup>

The following information regarding well susceptibility is taken from the MassDEP's website - "susceptibility is a measure of the well's potential to become contaminated by land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA). The possibility of a release from potential contaminant sources is greatly reduced if best management practices (BMPs) are used. The susceptibility determination for the wells did not consider whether BMPs are being used. Susceptibility of a drinking water well does not mean a customer will drink contaminated water. Water suppliers protect drinking water by monitoring water quality, treating water supplies and using BMPs and source protection measures to ensure that safe water is delivered to the tap."

Of the public water supply wells, the one serving the Police Station, Town Hall and the Department of Public Works complex had been determined to have arsenic concentrations that exceed the recently revised Federal Drinking Water Standard of 0.01 mg/l (i.e., 10 parts per billion). An analysis conducted by Weston and Sampson suggests that the arsenic appears to be a natural constituent of the groundwater at this location, rather than an indication of some anthropogenic source such as the nearby abandoned municipal landfill. The town has taken steps to remediate this issue and is now able to provide potable drinking water to the public at these facilities.

Anthropogenic groundwater contamination has occurred in Boxford along the I-95 highway corridor because of poorly considered or improper road salt storage, management, and application practices by MassHighway. To date, fifteen wells within this corridor have exhibited chloride concentrations that exceed either the Secondary Drinking Water Standard of 250 mg/l, or the Drinking Water Advisory standard for sodium of 20 mg/l for individuals on a salt restricted diet. MassHighway has conducted a controversial well replacement program in Boxford to provide replacement wells for selected residences in return for a waiver of liability from the affected homeowner. To date fifteen replacement wells have been installed under this MassHighway program. Local permits for some of these wells have yet to be obtained from the Board of Health and/or the Conservation Commission, reflecting MassHighway's assertion, disputed by the town, that it is not subject to local permitting requirements.

As Boxford is large in area with a minimum building lot size of two acres with 250 feet of frontage, a public water system would be prohibitively expensive. To address the future needs of the town, hydrogeologic tests would be required so that areas which could serve as possible sources of a municipal water supply could be identified and subsequently protected. According to the MassDEP's Priority Resource Map for the area (Appendix I), potentially productive aquifers are located in northwest Boxford, adjacent to Johnson's Pond and along the Parker River. An additional smaller area is located in the extreme northeast corner of town within the Cleveland State Forest. Much of the aquifer area is also designated as Natural Heritage and Endangered Species Program (NHESP) areas, which support rare and endangered species. The relatively small land area designated as a potentially productive aquifer in Boxford reflects the presence of the thin and/or impermeable soil horizons found in much of the town and their poor water-bearing capacity.

Since none of the public water-supply wells in Boxford pump more than 100,000 gallons per day (gpd), they are not required to delineate the Zone II or Zone III, in accordance with the MassDEP's Drinking Water Regulations 310 CMR 22.21. Accordingly, each public- supply well in Boxford (except for those

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<sup>1</sup> NA = "Not applicable" (Zone II delineated)

Public Water Supply Classifications: \* = "Community," † = "Transient Non-Community," ‡ = "Non-transient Non-Community"

serving Four Mile Village as described below) has a Zone I and an Interim Wellhead Protection Area; the radius of each is determined by the approved pumping rate of each well. The only wells within Boxford that have approved Zone II delineations are those serving the Four Mile Village facility; these Zone II delineations were conducted under the MassDEP's Source Water Assessment Program (SWAP). Since the Zone II areas for most of Boxford's public water-supply wells are not delineated, the aquifer recharge areas of these wells can be considered to be the area within the IWPA and Zone I. Public-supply wells located in the adjacent towns of Georgetown and Rowley have delineated Zone II areas which extend into Boxford. A large portion of these Zone II areas exists along streams and in wetland areas; such areas would be protected by state and local wetland protection laws.

#### **4 – Septic Services**

All household sewage is treated by private septic and leaching field systems. As such, Boxford remains the only community in Essex County and only one of a handful of communities in the state that make up greater metropolitan Boston that has no municipal water distribution or public sewer system. As such, Boxford has a greater need to protect its natural water resources than most surrounding towns since all residents are dependent upon the quality of the groundwater on their own property and cannot depend on the town for a source of potable water. At present there is no need for, nor plans for a community-wide or area-wide sewage system in Boxford.

Septic systems are serviced by local or independent operators. The current thinking is conventional septic systems can release some amounts of point source pollutants into nearby groundwater supplies, surface water bodies and streams. For this reason, the Commonwealth overhauled its Title 5 regulations in 1996 to ensure that failed septic systems are upgraded before home ownership title transfers can be approved. Setbacks from water bodies increased in Boxford's Board of Health Regulations in 1994.

Finally, the Commonwealth's enacted Wetlands Protection Act Regulations, including the Rivers Protection Act Regulations, the Stormwater Management Policy and the Community Preservation Act offer substantial support to our local permit-approving authorities in protecting our natural resources. Consideration of larger lot size and/or cluster zoning (sometimes referred to as "open space development") and a wholesale cap on issuance of building permits have all been discussed over the years since 1994. However, three other measures have actually been adopted to protect our natural resources, namely, (1) the Phased Growth Subdivision Regulation of 1997, (2) various restrictive regulations and bylaws initiated by all of the permit-approving authorities and taking violators to court in extraordinary cases where natural resources have been placed in jeopardy and (3) adopting a 75' minimum setback distance from wetlands to the edge of the one-acre minimum Contiguous Buildable Area in the Zoning Bylaw in 1995. Even with numerous laws and regulations in place, it is important to ensure that our town boards follow these measures and not mitigate, ignore, waive or undermine them in order to satisfy developers and landowners.

At the annual spring town meeting in May 2006, the town adopted a Stormwater Management bylaw for the control of stormwater runoff from construction sites of one acre or more within the designated urbanized areas of town. Commercial or industrial sites that have the potential to discharge pollutants, so-called "hotspots", are also regulated by the Stormwater Management Bylaw. The bylaw authorizes the Boxford Conservation Commission to promulgate regulations for the review, permitting and monitoring of construction sites and hotspots. The Conservation Commission adopted Stormwater Management regulations in September 2007. The Conservation Commission continues to update their Stormwater Management bylaw and regulations with proactive low impact development design standards to encourage the mitigation of erosion and stormwater runoff during construction activities.

## 5 – Long-term Development

Boxford is a small rural community with historically slow development patterns highly favoring single family homes on large parcels. Currently, there are no plans on the horizon or in the permitting phase for new large scale subdivisions or other developments. One large development, the Willows, is currently being constructed. This 66 unit multi-family 55 and over housing is helping reconcile the community's need for smaller housing options for their growing elderly population. Municipally, the town is looking to construct a new Department of Public Works facility as the old facility is inadequate for the town's needs. Finally, Masconomet Highschool is currently assessing a new set of athletic fields for their property for sports including soccer and baseball. Beyond these developments, the town of Boxford intends to maintain its rural character in the longterm, with minimal development beyond what is necessary to sustain its population as it evolves, grows, and ages.

## E- Recreation

Town-wide active and passive recreational activities in Boxford are developed and managed by several organizations. Most passive recreation is self-directed, however pre-arranged hikes, horseback rides, and nature walks are organized by BTA/BOLT, Inc.

Trails are maintained by BTA/BOLT, Inc. volunteers, with significant contribution from the Boy Scouts, Eagle Scouts, and Masconomet Regional High School interns.

The Boxford Recreation Committee, board appointed by the Selectmen, provides, supervises and maintains all recreational facilities in the town of Boxford and operates the Boxford Park Program, which offers games, sports, arts and crafts. The Recreation Committee also supervises the use of Camp Sacajawea by the Greater Lawrence Educational Collaborative. This camp is for severely handicapped children from the North Shore area. The site is handicapped accessible with pavement to all outbuildings and activity areas.

Most of the town's active recreation programs are administered by not-for-profit volunteer organizations, such as the Boxford Athletic Association (BAA), Masco Youth Football, Masco Youth Hockey, and Tribal Lacrosse. They offer sports and recreational programs for Boxford's youth and adults, including baseball, basketball, cheerleading, cross country, field hockey, football (flag and tackle), hockey, lacrosse, soccer, softball, swimming classes at Stiles Pond, track & field, the Call to Honor Triathlon, and the Jennifer Tinney 4th of July Road Race.

The associations are governed by members and officers who are elected each year. The members participate in monthly meetings at which they organize the sports programs and activities and establish each program's budget. All boys and girls, regardless of ability, are invited to participate. The primary purpose of the sports programs are to teach individual sports skills, give children the opportunity to compete in a team sport, assist in the development of a sense of responsibility and cooperation, foster good sportsmanship, and have fun.

### 1. Inventory of Recreational Fields and Facilities

Baseball / Softball Fields (9)    Christopher Cargill Fields, at Cole School (2)  
Eric Luther Boy Scout Park, off Cahoon Road  
Johnson Fields, behind the Police Station (2)  
Keith R. Koster Park, at Stiles Pond

	Morse Field, in West Boxford village Spofford Fields, at Spofford Pond School (2)
Multi-Purpose Fields (7)	Boy Scout Park (2) Chadwick Fields, behind Town Hall (3) Boxford Common (2)
Temporary Multi-Purpose (1)	Outfield at Cargill (1/2) Outfield at Boy Scout (1/2)
Basketball Courts-outdoor (3)	Cole School Spofford Pond School West Boxford Village
Basketball Courts-indoor (6)	Cole School Masconomet (4) Spofford Pond School
Tennis Courts (5)	Masconomet (3) Police Station (2)
Hockey Rinks (0)	
Swimming Pools (0)	
Beaches (1)	Stiles Pond
Boat Ramps (3)	Baldpate Pond Hovey's Pond Stiles Pond
Playgrounds (4)	Ackerman playground, at Boy Scout Park Johnson Field Cole School Spofford Pond School

**Table 6. Usage of Recreational Fields & Facilities**

Program	Age	Participants	Facilities & Fields
Baseball (BAA)	4-15	232	Boy Scout, Cargill, Koster, Morse, Spofford
Basketball (BAA)	5-14	250	Masco, Cole School, Spofford Pond School

Cross Country (BAA)	10-14	45	Bradley Parmer State Park
Field Hockey (BAA)	5-14	51	Boxford Common and the baseball outfield at Boy Scout Park
Football, Flag (BAA)	5-14	88	Chadwick
Football, Tackle (Masco Youth Football)	8-14	114	Not in Boxford
Hockey (Masco Youth Hockey)	4-18	140	Not in Boxford
Lacrosse (Tribal Lacrosse)	6-15	167	Limited availability at Boy Scout
Park Program	5-12	270	Cole School, Spofford Pond School
Soccer (BAA)	5-16	432	Boy Scout, Chadwick, baseball outfield at Cargill, Boxford Common
Softball, Girls (BAA)	8-14	42	Johnson
Softball, Men's (BAA)	30+	205	Cargill, Boy Scout, Johnson, Spofford
Track and Field (BAA)	8-15	73	Masco
Ultimate Frisbee	All ages	20	-
Beach (BAA)	All ages	315*	Keith Koster Park (Stiles Pond)
Call to Honor Triathlon (BAA)	All ages	300	Start and finish at Keith Koster Park (Stiles Pond)
Jennifer Tinney Memorial 4th of July Road Race (BAA)	All ages	250	Start and finish in East Village

Table 6. Boxford Housing Units and Tenure, 2000-2010.

\* Families.

## 2. Other Recreational Activities -

### Walking, Biking, and Horseback Riding Trails

The largest single area used for horseback riding and walking trails is the Boxford State Forest which is a collection of contiguous parcels, totaling over 2,000 acres, owned by the Commonwealth of Massachusetts, the Phillips Wildlife Sanctuary, the Essex County Greenbelt Association and other groups. The second largest area is the Wildcat Reservation, an area of over 300 acres purchased by the town in 1974 with a grant from the Commonwealth and managed by the Conservation Commission

Under the direction of BTA/BOLT, Inc., a large network of trails is maintained throughout the town. The Community Preservation Act (CPA) has also provided funding to the Boxford Conservation Commission for preservation and expansion of recreational hiking trails. Some trails are protected by easements granted to the town and BTA/BOLT, Inc., but most are used by permission of individual owners. Other areas are protected by the Essex County Greenbelt Association. Some of these areas are used as part of the Bay Circuit Trail (see Appendix I for map showing trails).

## **Rails to Trails Project**

In 2007, the Mass-Highway Commissioner recognized the regional Borders to Boston trail as an important project to further non-motorized transportation alternatives and created a state-level task force to guide its development.

Surrounding towns are also working on the creation and planning of similar pathways that would link with Boxford's pathway to form a contiguous 30 +/- mile recreational trail stretching from Salisbury to Danvers along the former Newburyport Branch right-of-way, to be known as the Borders to Boston Rail Trail (see map in Appendix I).

US Representative John Tierney earmarked \$800,000 under the SAFETEA-LU program on the list of "high priority projects" to design, engineer, permit, and construct the "Border to Boston Bikeway" rails-trails project for eight north shore towns: Danvers, Wenham, Topsfield, Boxford, Georgetown, Newbury, Newburyport, and Salisbury. The MBTA owns the rail-bed in the southern three towns: Topsfield, Wenham, and Danvers. Given a lease by the MBTA, these three towns converted their MBTA rail bed to a compacted stone dust bike/walking trail and declined their share of the \$800,000. The northern towns have been working with Mass Highway (MA DOT), National Grid, and FST (Fay, Spofford and Thorndike) engineers on their paved bike trail. Newburyport finished the first phase of their paved bike trail several years ago. The northern towns have a license from National Grid, but need a 99 year lease in order to build the rail-trail between the parallel power lines. Under new rules, this lease will only be issued at the 75% design completion.

FST and MA DOT engineers are working together to reach the 25% level of completion. When the 25% completion level is reached, a public hearing will be held and FST, MA DOT, and the Boxford Border to Boston Bikeway Path Committee will take the project to the required permitting Boxford Commissions.

For now, the Boxford rail-bed is open for walking, running, biking, and skiing from Pond Street to the Georgetown Town line and beyond thru Georgetown and from Pye Brook Lane to the Topsfield Town line, connecting with the Topsfield, Wenham, and Danvers Linear Trail.

In 2022 the award of a federal grant of over a million dollars will go towards finish engineering studies, which will allow the building of the Boxford section of the Rail/Trail. This was accomplished with much help from our state representative Tram Nguyen. She was able to get the state to resume work, and brought in Seth Moulton, our national representative who got Congress to approve funding in a multipurpose bill.

## **Cross Country Skiing**

As with horseback riding and hiking, the many open and wooded areas in Boxford offer excellent cross-country skiing when adequate snow cover is available.

## **Skating**

No official skating areas are maintained or supervised by the town, but residents use the town's many ponds and flooded areas when freezing temperatures permit.

## **Tennis**

Tennis courts are available for use beside the Police Station at the corner of Spofford and Ipswich Roads. The DPW is responsible for maintenance of these courts. Many residents also use the courts at Masconomet Regional High School.



## **Playgrounds**

There is a playground behind the Spofford Pond School and a large new playground behind Cole School, as well as Ackerman Playground at Boy Scout Park. A smaller playground is available adjoining Johnson Field and Stiles Pond. The Recreation Committee has received funding in 2023 to improve the playground near the DPW

## **Camping and Picnicking**

The Recreation Committee maintains Camp Sacajawea on Stiles Pond with facilities available for both picnicking and overnight camping. The camp is located on over 30 acres with extensive water frontage. Buildings with running water, electricity, and septic facilities are available for use by contacting the Recreation Committee.

## **Swimming**

Under the direction of the Boxford Athletic Association (BAA), a swimming program is offered at Stiles Pond. Both swimming privileges and lessons are available to residents for a modest fee. Last year approximately 315 families signed up and paid for use of the beach. The proceeds from beach use are allocated exclusively to operate the beach area and to maintain its docks and facilities.

## **Boating/Canoeing/Fishing**

Boxford offers a great variety of ponds and rivers for this use, many with well-marked public landings. Stiles, Hovey's and Baldpate ponds all have boat ramps. Access can be had to Sperry, Stevens and Spofford ponds via the fire hydrant areas, but these are not boat ramps per se. Portions of the Ipswich River and Parker River are suitable for canoeing and kayaking. Baldpate and Stiles are stocked with trout, although all of these surface water bodies are fished on a regular basis. According to the MassDEP, there are nine great ponds (those with an area greater than 10 acres) wholly or partially located in Boxford: Bald Pate Pond, Chadwick Pond, Four-Mile Pond, Hovey's Pond, Johnson's Pond, Sperry Pond, Spofford Pond, Stevens Pond and Stiles Pond. All Massachusetts residents have certain rights to use and enjoy Great Ponds.

## **Basketball**

In addition to indoor courts at Masco and courts inside and outside of each of the two elementary schools, a court is available in the West Boxford Village and at Keith Koster Park (Stiles Pond).

## **Bicycling**

Bicycling is a major pastime in Boxford, both for town residents and for visitors, as indicated in the survey. In addition to many miles of wonderful roads, there are trails through the woods for mountain bikers. Survey results indicate that Boxford is a destination for bikers and there are concerns about safety because of the increase in vehicular traffic.

## **Recent Additions or Improvements to Fields and Facilities**

Boxford Common – 2 multipurpose fields, paved walking paths, Masco Football storage unit

In 2014, a new playground was built at the Cole School. CPA funds were used for this project.

### **Survey Results Regarding Recreation (see Appendix III)**

Birding, jogging and bicycling continue to be popular leisure activities in Boxford. There are many other popular recreation activities cited by respondents: tennis, fishing, soccer, ice skating, cross-country skiing, snow-shoeing, picnicking, and playground use.

Support for acquiring land for passive recreation was generally more supported with nearly two thirds of respondents indicating it continues to be important. Sixty two percent of respondents also indicated support for the rail trail and fifty six percent indicated support for sidewalks around schools. A slight majority also supported paved bike paths (53%) and bike lanes (55%), though more than 20% indicated these were less important and another 20% indicated they were not important.



*Figure 3. Soccer Game, Chadwick Field*

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## Section 4 - Environmental Inventory and Analysis

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### A- Geology, Soils and Topography

According to the 1983 U.S.G.S. Bedrock Geologic Map of Massachusetts, the bedrock in the vicinity of Boxford consists of Silurian and Ordovician-aged (395 to 500 million year old) igneous and metamorphic rocks. The main bedrock units are the Sharpner's Pond pluton, the Fish Brook gneiss and the Nashoba formation. Boxford is located between two major fault lines – the Clinton-Newbury fault and the Bloody Bluff fault. The Clinton-Newbury fault trends northeast through West Boxford, bisecting Johnson's Pond. The Bloody Bluff fault also trends northeast through Topsfield and Ipswich, separating the Sharpner's Pond pluton from other igneous rocks further east (e.g., the Cape Ann pluton). The bedrock geologic map also indicates the presence of several smaller faults in the area. Numerous small faults are also shown on the 1977 U.S.G.S. Preliminary Bedrock Geologic Map of the Georgetown Quadrangle, which includes East Boxford. The presence of these faults has important implications for Boxford, as fault zones are often good water-supply sources due to their relatively high permeability.

The topography in Boxford is varied with the northwestern and central sections rather hilly and the eastern sections more flat and gently rolling. A series of rounded hills are composed of firm, relatively impermeable till which causes seep spots and springs on the hillsides. The most notable are Mt. Hayman, Austin Hill, Byers Hill, Shaven Crown Hill, Wood Hill and Baynes Hill. The average height is 298 feet. Some of the hills have an elongate form and are oriented north-northwest. These drumlins (Bald Hill, Jobs Hill and a small unnamed hill off of Bald Hill Road) reflect the glacial history of the area and are similar to other drumlins found in eastern Massachusetts. The topography between the hills is generally flat with swampy areas composed of fine-grained glacial sediments or till. These areas are usually associated with or bordered by ponds. Other glacial features abound throughout the topography of Boxford including eskers, kames, moraines and kettle hole ponds. A 2005 open space conservation purchase by the town of Anvil Farm in West Boxford preserved a beautiful example of an esker.

In the western and northwestern sections of town there are many large fields, some still being used for agricultural purposes. In East and West Boxford, there are some fields that are actively farmed for hay and pasture, while most of the open lands are small, idle or abandoned fields. Many of the open fields in town that aren't farmed have already been developed for residential use. It is with increasing regularity that the town Boards are being approached with sites that are difficult to develop due to the presence of wetlands, hilly terrain or other nonconforming features.

Many of the soils occurring in Boxford are generally unsuitable for providing sufficient quantities of drinking water for other than single-family residential dwellings. These soils are either rocky, gravelly or contain hardpan or relatively impermeable layers that preclude intensive development or the development of large water-supply wells. Many of the private water-supply wells in town are bedrock wells due to the thin, impermeable soil horizon. The following descriptions of the local soils are taken from the 1981 U.S.D.A.

Soil Conservation Service's soil survey of Essex County. The soil survey indicates that the main soil associations found in Boxford are the Hinckley-Windsor-Merrimack association, the Paxton-Woodbridge-Montauk association, the Canton-Charlton-Sutton association and the Charlton-Rock Outcrop-Medisapristis association. The soil survey's descriptions of these soil associations are as follows.

### **Hinckley-Windsor-Merrimack Association**

These sandy and loamy soils are formed in outwash deposits. They are found on nearly level to steep slopes and are excessively or somewhat excessively drained due to their relatively high permeability. Soils of this association are generally suitable for farming and residential development. Some parts of the association are droughty and steep, and most of the minor soils have a seasonal high-water table in winter and spring.

### **Paxton-Woodbridge-Montauk Association**

These loamy soils are formed in compact glacial till. They are found on nearly level to steep slopes and are well drained and moderately well drained. The soils of the association are suitable for dairy farming, orchards and truck crops. They are well suited to residential development if sewage disposal facilities are available. The main limitations for residential development are the slowly permeable fragipan, steep slopes in some areas, and a seasonal high-water table in areas of the Woodbridge soils.

### **Canton-Charlton-Sutton Association**

These loamy soils are formed in friable glacial till. They are found on nearly level to steep slopes and are well drained and moderately well drained. The soils of this association are suitable for dairy farming, orchards and truck crops. Most areas are well suited for residential development. The main limitations of the Canton and Charlton soils for residential development are slope and stones in and on the surface layer. Use of the Sutton soils is limited by the seasonal high-water table.

### **Charlton-Rock Outcrop-Medisapristis Association**

These loamy and mucky soils are formed in glacial till and organic deposits. The loamy soils are found on nearly level to steep slopes and are well drained. The mucky soils are found in nearly level areas and are very poorly drained. The soils of this association, especially the Charlton soils, are suitable for woodland and woodland wildlife habitat.

Medisapristis have good potential for wetland wildlife habitat. The Charlton soils are suitable for residential development, but wetness and a high organic matter content limit the Medisapristis for this use. The main limitations of the higher areas of the association are the frequent bedrock outcroppings and slope.

A Surficial Geology Map (based upon data from the U.S. Geological Survey) is included in this report (Appendix I) that shows soil types within Boxford. The map shows that Boxford is mainly covered by sand and gravel deposits or glacial till with bedrock outcrops. Minor amounts of floodplain alluvium are found near surface water bodies (ponds and streams).

## **B - Landscape Character**

Woodlands and forests are the dominant features in Boxford. Once a quiet farming community, many of the former fields and agricultural lands have reverted back to secondary growth hardwood and soft wood forest. The landscape consists of numerous wooded hills and fields interspersed with ponds and wetlands. These features provide the town with a rural character that is heightened by the lack of any centralized commercial areas. The landscape characteristics which comprise the town's rural character are the woodlands, fields and farms in town; it is these features that Boxford's residents are striving to preserve. Since 2016, Boxford has preserved over 94.5 acres of open space for conservation and passive recreation and has 1,183.82 acres of farmland and forest protected by Chapter 61, 61A or other restrictions.

The town's farms, hayfields and winding roads are often bounded by dry stone walls that meander thru the landscape. The stone walls help define the rural character. Currently the Planning Board is considering regulations to better define the administration of the Scenic Roads Act for the protection of stone walls and trees within the towns road right of ways. The few remaining farms are a valuable asset to the town and reflect the area's agrarian past. The abundant ponds in town are also an important water resource, providing recreational opportunities to the residents as well as many scenic vistas.

## **C - Water Resources**

### **1 - Watersheds**

There are three drainage basins in Boxford (the Parker, Ipswich and Merrimack River basins). A small part of northwest Boxford lies in the Merrimack River basin. West Boxford Village lies in the Parker River basin while East Boxford Village is situated in the Ipswich River basin. In Boxford the Merrimack River basin consists of Hovey's, Johnson's and Chadwick Ponds and their associated wetlands and intermittent streams. Much of the Merrimack River basin in Boxford is a public water supply watershed, as indicated on the Water Supply Protection Map.

The Parker River originates in West Boxford in wetlands west of Sperry's Pond and flows northeast under Willow Rd into Groveland, Georgetown and on through Newbury. Baldpate Pond and some small tributaries of the Mill River and Penn Brook in central Boxford also lie within the Parker River basin. Much of the Parker River basin in Boxford is designated as an approved Zone II for five municipal water-supply wells located along the Parker River in Georgetown and for one municipal water-supply well located along the Mill River in Rowley. It should be noted that the Parker River has been determined to be hydrologically stressed. Why are we deleting this?

For central and southern portions of Boxford, Fish Brook and Pye Brook are the main drainage systems. Both these systems flow into the Ipswich River in Topsfield. These two brooks and their associated wetlands and tributaries drain many of the larger ponds in Boxford, including Four Mile, Spofford, Stiles, Lowe and Kimball Ponds. All of these water bodies help to contribute water flow into the Ipswich River. The Ipswich River is widely recognized as one of the most severely stressed rivers in the country due to excessive withdrawals by bordering communities and low stream flow.

### **2 - Surface Water**

The town's rivers and brooks are rather slow moving and much of their water flows through marshland, maple swamps and wetland areas which have major resource value. They are important since they contribute to numerous water-supply wells in Boxford and adjacent towns (as evidenced by the Zone II delineations), assist in the aquifer recharge of groundwater, provide habitat cover and food for wildlife, serve as a buffer between developed areas and store excess surface runoff to reduce peak storm discharges and flooding. They provide area for open space, passive recreational activities and environmental study. Many of the wetlands in Boxford are designated as NHESP habitat. Notable surface waters in the town of Boxford include Stiles Pond, Baldpate Pond, Fish Brook, Hovey's Pond, and Steven's Pond. These resources are valued as they contribute to numerous water supply wells in Boxford, and provide both passive and active recreational opportunities for residents.

### **3 - Flood Hazard Areas**

Flood zones for Boxford and vicinity are shown on the Flood Hazard Zones map. The map shows the 100 and 500-year flood zones based on Flood Insurance Rate Maps (FIRMs) provided by the Federal

Emergency Management Agency (FEMA) updated in 2012. The map shows that the flood hazard zones are predominantly limited to the river valleys and areas around ponds. Boxford has adopted a flood plain overlay district as part of the Zoning Code in May 2012 Article 14 to restrict development in flood zone areas.

#### **4 - Wetlands**

Boxford's landscape includes an abundance of wetlands or areas of land whose soils are saturated with moisture either permanently or seasonally. They include marshes, swamps, vernal pools, and bogs and often life within floodplains. Wetlands are critical to the preservation of the towns' water resources. They receive and transmit large volumes of precipitation, thus ensuring a steady supply of groundwater. They also provide natural storage for runoff during storm events, thereby reducing downstream flooding and the attendant effects of erosion and sedimentation. State laws support the Conservation Commission's efforts to protect wetlands. The Town's has adopted a bylaw (by the Town Meeting of the Town of Boxford 5-13-1986 ATM, Art. 33, updated in 1994) to protect the wetlands, water resources and adjoining land areas in the Town by controlling activities deemed by its Conservation Commission likely to have a significant or cumulative effect upon resource area values, including but not limited to the following: public or private water supply, groundwater, flood control, erosion and sedimentation control, storm damage prevention, water quality, water pollution control, fisheries, wildlife habitat, rare species habitat including rare plant species, agriculture, recreation values deemed important to the community and riverfront area values (collectively, the "resource area values protected by this bylaw").

Wetlands need to maintain their natural water regime, including normal fluctuations and connections with the uplands and other wetlands in order to provide maximum water quality and quantity and wildlife habitat benefits. Protected lands within Boxford that help preserve the integrity and function of wetlands include Willowdale State Forest, Cleveland Farm, Wildcat Forest, Boxford State Forest, and others.

#### **5 - Recreational Waters**

Boxford's lakes and ponds provide ample recreational opportunities for residents and visitors. The town beach is located on Stiles Pond with opportunities for swimming, sunbathing and boating. Some of the other ponds are adjacent to nature trails, providing scenic views and opportunities for bird watching, horseback riding and diverse landscapes for nature hikes. There are also three YMCA camps on Stiles Pond owned by the towns of Lynn, Wakefield and Danvers and Georgetown's Camp Dennison located on Baldpate Pond with an easement to the pond approved by Boxford voters in 1999.

#### **D - Vegetation**

In July 2000, Boxford conducted its first-ever Boxford Biodiversity Days. This community-wide event identified over 515 species of plant and wildlife. The combination of extensive forests and wetlands provide rich habitat for the following list of vegetation found in our area. It includes approximately 128 varieties of plantlife and 14 varieties of trees.

##### **Plantlife**

The following listing was prepared by Phyllis Fischer and is listed primarily by the order of seasonal appearance.

##### *Earliest Spring*

<i>Benzoin (Spice Bush)</i>	<i>False Hellebore Skunk Cabbage</i>	<i>Trout Lily</i>
<i>Colt's Foot Hepatica Fumitory (Rare)</i>	<i>Jack-in-the-Pulpit Marsh</i>	<i>Water Hemlock</i>
<i>Early Saxifrage Spring</i>	<i>Marigold Shad Blow</i>	<i>Wood and Rue Anemone Blood Root</i>

Later

<i>Amaryllis</i>	<i>Orchids - Lady Slipper and Lady's Tresses</i>	<i>Trilium</i>
<i>American Star Flower</i>	<i>Partridge Berry</i>	<i>Violets: Yellow, Woolly, White, Canada White, many varieties of blue with various shaped leaves, including the rare Bird's Foot Violet.</i>
<i>Blue Flag</i>	<i>Pipsissiwa</i>	
<i>Blue-Eyed Grass</i>	<i>Quaker Ladies (Bluets)</i>	<i>Wild Geranium</i>
<i>Canada Lily</i>	<i>Rattlesnake Plantain</i>	<i>Wild Lily of the Valley</i>
<i>Dandelions</i>	<i>Rhododendron</i>	<i>Wild Oats</i>
<i>Dutchman's Breeches</i>	<i>Solomon's Seal and False Solomon's Seal</i>	<i>Wild Red Columbine</i>
<i>Gold Thread</i>	<i>Swamp Azalea</i>	<i>Winter Green</i>
		<i>Wood Betony</i>

June

- Barren Raspberries
- Bastard Toadflax
- Beach plum
- Bear Berry
- Bindweed
- Bittersweet
- Black Raspberries
- Bladder Campion
- Blazing Star
- Blue Flag Iris
- Blueberries
- Bouncing Bet
- Bunch Berry
- Butter & Eggs
- Buttercups
- Buttonbush
- Carrion Flower
- Catnip
- Celandine
- Chicory

- Cinquefoil Self Heal
- Clintonia
- Clover - Rabbits Foot, White, Pink and Alfalfa
- Cranberries
- Daisy Fleabane
- Dame's Racket
- Deptford Pink
- Elderberry
- Evening Primrose
- Frost Weed
- Golden Ragwort
- Greenbriar
- Hawkweed
- Hobble Bush
- Jersey Tea
- Knapweed
- Leather Leaf
- Milkweed
- Mullein
- Ox Eye Daisies
- Pokeweed
- Purple Vetch
- Queen Anne's Lace
- Ragged Robin
- Rattlebox
- Roses - Small white, large pink
- Spiderwort
- Spreading Dogbane
- St. John's Wort
- Steeple Bush
- Strawberries
- Tall Meadow Rue
- Tansy
- Thermopsis
- Thistle
- Turtlehead
- Virginia Creeper
- Yarrow

Later

- Asters
- Bayberry
- Blue Vervain
- Boneset
- Brown-eyed Susans



- Golden Rods (many varieties)
- Jewelweed
- Joe Pye Weed
- Loosestrife
- Nightshade
- Pearly Everlasting
- Sweet Fern

#### Ferns

- Bracken
- Christmas
- Cinnamon
- Hayscented
- Interrupted
- Marsh
- New York
- Ostrich
- Polypody
- Rattlesnake Grape
- Royal
- Sensitive

#### Rare

- Cardinal Flower
- Fringed Gentian
- Pitcher plant

#### Non-Flowering (in addition to ferns)

- Beech drops
- Ground Pine
- Indian Pipe
- Mosses

A listing of major species within the forested areas are as follows:

#### **Hardwoods**

- Oak - White, Red and Black
- Maple - Sugar and Swamp
- Birch - White and Gray
- Hickory - Pignut and Shagbark
- Beech
- Ash - White
- Elm - American
- Hornbeam
- Sassafrass

## **Conifers**

- Pine - White, Red and Pitch
- Hemlock
- Spruce - Blue
- Cedar - White, red
- Juniper
- Tamarack (Eastern Larch)

### **1 - Wetland Vegetation**

Wetland vegetation includes plants that are distinct in that they are well adapted to life in saturated soil. Although some species grow only in areas that are wet year-round, most wetland plants are able to tolerate a range of hydrologic conditions and may occur in uplands as well as wetlands. Wetland vegetation types in Boxford ranges from forests to swamps, bogs and meadows. Invasive plant species are a threat to wetlands vegetation and entire wetland systems throughout the state and region, including Boxford. More information on wetland invasive species is referenced in Environmental Challenges.

### **2 – Forested Land**

Boxford maintains a substantial amount of their community as forested land, defined as an ecosystem with a tree crown density of 10% or more and are stocked with trees capable of producing timber or other wood products. In Boxford, forested lands are typically comprised of stands of Beech, Maple, Oak, and Hickory. The most notable stand in the town is a large Beech copse in the Boxford Town Forest. Forested land in Boxford is preserved through numerous entities and has not decreased substantially in recent years.

### **3 - Agricultural Land**

Boxford is fortunate to retain a good deal of agricultural land that is reflective of its early farming history and today meets the needs of both crop and equestrian farms. In the western and northwestern sections of town there are many large fields, some still being used for agricultural purposes. In East and West Boxford, there are some fields that are actively farmed for hay and pasture, while most of the open lands are small, idle or abandoned fields.

### **4 - Shade Trees**

Public shade trees, including street trees and trees within parks, cemeteries and other public places contribute to the town's character, to its ecological and human health and comfort. Shade trees help clean the air of toxins and pollutants, mitigate temperatures, help reduce stormwater runoff and provide food and habitat for a variety of native and migrating species. Trees can also provide buffers for privacy or to screen uses. The town's tree warden is responsible for the health and removal of public shade trees in Boxford and for working with National Grid to minimize tree removal as new power lines are planned. Boxford has designated all roads in town (except state numbered routes) as subject to the Scenic Roads Act. Removal of trees within scenic road right-of-way require a hearing before the Planning Board.

### **5 - Natural Communities and Core Habitats**

A good summary of Boxford's plant habitats can be found in the Natural Heritage and Endangered Species Program's (NHESP) 2012 report entitled *BioMap2, Conserving the Biodiversity of Massachusetts in a*

*Changing World, Boxford.* BioMap2 identifies habitats that if protected will advance biodiversity in Massachusetts. It is a planning tool to help local and state agencies protect the state’s most important habitat resources. BioMap2 maps resources as outlined below.

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: BioMap2 identifies the top five 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.

Wetland Cores: BioMap2 used an assessment of Ecological Integrity to identify the least disturbed wetlands in the state within undeveloped landscapes – those with intact butters and little fragmentation or other stressors associated with development. These wetlands are most likely to support critical wetland functions and are most likely to maintain these functions into the future.

Aquatic Cores: BioMap2 identifies intact river corridors within which important physical and ecological processes of the river or stream occur.

The BioMap2 report identifies fourteen BioMap core habitats totally or partially within Boxford, encompassing Forest Cores, wetland Cores, Vernal Pool Cores, Aquatic Cores and Exemplary or Priority Natural Community Cores.

BioMap2 also identifies Critical Natural Landscapes, or intact landscapes that are better able to support ecological processes and disturbance regimes, and a wide array of species and habitats over long time frames. In Boxford, these include one Landscape Block (the most intact large areas of predominately natural vegetation), and fifteen Uplands Buffers of Wetland (8) and Aquatic (7) Cores.

In total BioMap2 identifies 7,199 acres of Core Habitat in Boxford, 31 percent of which is protected, and 2,652 acres of Critical Natural Landscape, 62% of which is protected. Some lands are identified as Core Habitat and Critical Natural Landscape.

The Natural Heritage and Endangered Species Program also lists seventeen varieties of rare vascular plants identified within the town:

**Table 7. Rare Plant Species in Boxford**

Scientific Name	Common Name	Status
<i>Asclepias purpurascens</i>	Purple Milkweed	E
<i>Carex livida</i>	Glaucous Sedge	E
<i>Celastrus scandens</i>	American Bittersweet	T
<i>Eriophorum gracile</i>	Slender Cottongrass	T
<i>Gentiana andrewsii</i>	Andrews' Bottle Gentian	E
<i>Houstonia longifolia</i>	Long-leaved Bluet	E
<i>Liatris scariosa var. novae-angliae</i>	New England Blazing Star	SC

<i>Myriophyllum alterniflorum</i>	Alternate-flowered Water-milfoil	E
<i>Ophioglossum pusillum</i>	Adder's-tongue Fern	T
<i>Panicum philadelphicum ssp. philadelphicum</i>	Philadelphia Panic-grass	SC
<i>Platanthera flava var. herbiola</i>	Pale Green Orchis	T
<i>Potamogeton vaseyi</i>	Vasey's Pondweed	E
<i>Senna hebecarpa</i>	Wild Senna	E
<i>Sparganium natans</i>	Small Bur-reed	E
<i>Viola adunca</i>	Sand Violet	SC
<i>Carex livida</i>	Livid Sedge	E
<i>Myriophyllum alterniflorum</i>	Slender Water-milfoil	E

E-Endangered | T-Threatened | SC-Special Concern

Table 7. Rare Plant Species in Boxford.

## 6 - Vegetation and Recreation

The diverse and captivating vegetation which inhabits Boxford lends itself to a multitude of recreational uses, including scenic viewing along nature trails, hunting in some forested areas, and hiking and camping amongst vegetative cover. The presence of several rare or endangered species of vegetation throughout Boxford makes protecting the natural landscapes they reside in essential to maintaining biodiversity. Further, the plethora of unique vegetative landscapes like those found in core habitats throughout Boxford should continue to be protected from an ecosystem standpoint so they may continue delivering their essential ecosystem services including providing food and shelter to associated fauna, and recreational value to town residents.

## E- Fisheries and Wildlife

The following extensive inventory of wildlife sighted in Boxford speaks for the interest of Boxford residents in taking to the fields, forests and streams to spot wildlife. Many residents thrive on fishing, bird watching and observing all kinds of native wildlife. Many observed species have been documented with the Conservation Commission. Retaining our uninterrupted forest and wetland corridors is of major importance to this town and the surrounding communities for the preservation of species diversity. Many of the large protected upland tracts and wetlands corridors provide wildlife corridors, offering habitat for breeding, nesting and feeding. A black bear was sighted in Boxford for the first time in many years during the winter of 2006-2007, and as recently as the summer of 2022. Increases in the population of coyote, turkeys, fisher, and beaver have also been noted. The NHESP report lists nine rare animal species in Boxford, comprising the blue-spotted salamander, marbled salamander, four-toed salamander, barn owl, bridle shiner, eastern pond mussel, Blanding's turtle, Ringed Boghaunter and Wood turtle.

## Mammals

Beaver	Gray Fox	Red Squirrel
Big Brown Bat	Gray Squirrel	River Otter
Bobcat	House Mouse	Short-Tailed Shrew
Coyote	Little Brown Bat	Short-Tailed Weasel

Deer Mouse  
Eastern Chipmunk  
Eastern Cottontail Rabbit  
Eastern Mole  
Fisher  
Flying Squirrel

Mink  
Muskrat  
Opossum  
Raccoon  
Red Bat  
Red Fox

Star-Nosed Mole  
Striped Skunk  
Voles, Unknown Species  
White-Footed Mouse  
White-Tailed Deer  
Woodchuck

### Fish

American Eel  
Black Crappie  
Bridled Shiner  
Brook Trout  
Brown Bullhead/  
Tessellated Darter

Catfish  
Chain Pickerel  
Golden Shiner  
Hornpout  
Lake Trout  
Large and Smallmouth Bass

Pumpkinseed Sunfish  
Rainbow Trout  
Tessellated Darter  
White Crappie  
Yellow Perch

### Reptiles

Black Racer  
Blanding's Turtle  
Eastern Box Turtle  
Eastern Garter Snake  
Hog-Nosed Snake  
Milk Snake

Musk (Stinkpot) Turtle  
Northern Water Snake  
Painted Turtle  
Red-Bellied Snake  
Ribbon Snake  
Ring-Necked Snake

Smooth Green Snake  
Snapping Turtle  
Spotted Turtle  
Wood Turtle

### Amphibians

American Toad  
Blue-Spotted Salamander  
Bullfrog  
Gray Tree Frog  
Green Frog

Leopard Frog  
Marbled Salamander  
Pickerel Frog  
Red-Backed Salamander  
Red-Spotted Newt

Spotted Salamander  
Spring Peeper  
Two-Lined Salamander  
Wood Frog

### Birds<sup>2</sup>

Acadian Flycatcher (M) UC  
Alder Flycatcher (M) UC  
American Bittern (M) R  
American Coot (M) UC

Eastern Wood Pewee (M) C  
Evening Grosbeak (M) N  
Field Sparrow (M) UC  
Fox Sparrow (M) UC

Red-breasted Nuthatch (R) UC  
Red-eyed Vireo (M) C  
Red-shouldered Hawk (M) UC  
Red-tailed Hawk (R) C

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<sup>2</sup> Characters following the species' common name indicates:

- (R) A resident species, one that may be found year round  
(M) A migratory species, one that temporarily passes through, or is here for only part of the year.  
C Common, seen regularly  
UC Uncommon, seen infrequently, small numbers yearly  
R Rare, seen very infrequently, usually not yearly  
N Nomadic, depending on food supply in the north these species may be common or absent from our area in any given year(s).

American Crow (R) C  
 American Goldfinch (R) C  
 American Kestrel (R) UC  
 American Redstart (M) C  
 American Robin (R) C  
 Barn Swallow (M) C  
 Barred Owl (R) UC  
 Bay-breasted Warbler (M) UC  
 Belted Kingfisher (M) C  
 Black Duck (M) C  
 Black-and-white Warbler (M) C  
 Black-billed Cuckoo (M) UC  
 Blackburnian Warbler (M) UC  
 Black-capped Chickadee (R) C  
 Blackpoll Warbler (M) UC  
 Black-throated Blue Warbler (M) UC  
 Black-throated Green Warbler (M) C  
 Blue Jay (R) C  
 Blue-gray Gnatcatcher (M) UC  
 Blue-winged Teal (M) UC  
 Blue-winged Warbler (M) UC  
 Bohemian Waxwing R  
 Broad-winged Hawk (M) C  
 Brown Creeper (R) C  
 Brown Thrasher (M) R  
 Brown-headed Cowbird (M) C  
 Bufflehead (M) C  
 Canada Goose (R) C  
 Canada Warbler (M) UC  
 Canvasback (M) R  
 Cape May Warbler (M) R  
 Carolina Wren (R)  
 Cedar Waxwing (R) C  
 Chestnut-sided Warbler (M) UC  
 Chimney Swift (M) C  
 Chipping Sparrow (M) C  
 Common Goldeneye (M) UC  
 Common Grackle (M) C  
 Common Merganser (M) UC  
 Common Nighthawk (M) UC  
 Common Redpoll (M) N  
 Common Snipe (M) R  
 Common Yellowthroat (M) C  
 Connecticut Warbler (M) R  
 Cooper's Hawk (M) R  
 Dark-eyed Junco (M) C  
 Double-crested Cormorant (M) C  
 Downy Woodpecker (R) C  
 Eastern Bluebird (R) C  
 Eastern Kingbird (R) C  
 Golden-crowned Kinglet  
 Goshawk (R) UC  
 Gray Catbird (M) C  
 Great Black-backed Gull (R) UC  
 Great Blue Heron (M) C  
 Great Cormorant (M) C  
 Great Crested Flycatcher (M) C  
 Great Horned Owl (R) UC  
 Green-backed Heron (M) R  
 Green-Winged Teal (M) UC  
 Hairy Woodpecker (R) C  
 Hermit Thrush (M) C  
 Herring Gull (R) C  
 Hooded Merganser (M) UC  
 Horned Lark (M) C  
 House Finch (R) C  
 House Sparrow (R) C  
 House Wren (M) C  
 Indigo Bunting (M) UC  
 Least Bittern (M) R  
 Least Flycatcher (M) UC  
 Lesser Scaup (M) R  
 Lincoln's Sparrow (M) UC  
 Louisiana Waterthrush (M) UC  
 Magnolia Warbler (M) UC  
 Mallard (R) C  
 Merlin (M) UC  
 Mourning Dove (R) C  
 Mourning Warbler (M) R  
 Mute Swan (R) UC  
 Nashville Warbler (M) UC  
 Northern Cardinal (R) C  
 Northern Flicker (R) C  
 Northern Mockingbird (R) C  
 Northern Oriole (M) C  
 Northern Parula (M) UC  
 Northern Shrike (M) R  
 Northern Waterthrush (M) UC  
 Osprey (M) UC  
 Ovenbird (M) C  
 Palm Warbler (M) C  
 Peregrine Falcon (M) R  
 Pied-billed Grebe (M) UC  
 Pileated Woodpecker (R) UC  
 Pine Grosbeak (M) N  
 Pine Siskin (M) N  
 Pine Warbler (M) UC  
 Prairie Warbler (M) UC  
 Purple Finch (M) UC  
 Red Crossbill (M) N  
 Red-winged Blackbird (M) C  
 Ring-billed Gull (R) UC  
 Ring-necked Ducks (M) C  
 Ring-necked Pheasant (R) UC  
 Rock Dove (R) C  
 Rose-breasted Grosbeak (M) C  
 Rough-winged Swallow (M) R  
 Ruby-crowned Kinglet (M) C  
 Ruby-throated Hummingbird (M) C  
 Ruddy Duck (M) UC  
 Ruffed Grouse (R) C  
 Rufous-sided Towhee (M) C  
 Rusty Blackbird (M) R  
 Savannah Sparrow (M) C  
 Scarlet Tanager (M) C  
 Screech Owl (R) UC  
 Sharp-shinned Hawk (R) C  
 Snow Bunting (M) R  
 Solitary Sandpiper (M) R  
 Solitary Vireo (M) UC  
 Song Sparrow (R) C  
 Starling (R) C  
 Swainson's Thrush (M) UC  
 Swamp Sparrow (M) UC  
 Tennessee Warbler (M) R  
 Tree Sparrow (M) UC  
 Tree Swallow (M) C  
 Tufted Titmouse (R) C  
 Turkey (R) C  
 Turkey Vulture (M) C  
 Veery (M) C  
 Warbling Vireo (M) UC  
 Whip-poor-will (M) R  
 White-breasted Nuthatch (R) C  
 White-crowned Sparrow (M) UC  
 White-throated Sparrow (M) C  
 White-winged Crossbill (M) N  
 Willow Flycatcher (M) UC  
 Wilson's Warbler (M) UC  
 Winter Wren (M) UC  
 Wood Duck (M) C  
 Wood Thrush (M) C  
 Yellow Warbler (M) C  
 Yellow-bellied Sapsucker (M) UC  
 Yellow-billed Cuckoo (M) UC  
 Yellow-rumped Warbler (M) C  
 Yellow-throated Vireo (M) UC

Eastern Phoebe (M) C

Red-bellied Woodpecker (R) UC

### 1 - Vernal Pools

Vernal pools are an ecosystem created by small depressions in the earth that temporarily collect seasonal precipitation. They are characterized by periods of dryness and a lack of fish which allow for the safe development of natal amphibian and insect species. Vernal pool habitat is important to a variety of wildlife species including some amphibians that breed exclusively in vernal pools, and other organisms such as fairy shrimp, which spend their entire life cycles in the vernal pool. Other wildlife species utilize vernal pools for breeding and feeding. Certified vernal pools are protected by state regulations. BioMap2 identifies 7 Vernal Pool Cores in Boxford. There are at least one hundred and fifteen (115) certified vernal pools, with 100-foot buffer zones that serve as areas of critical wildlife habitat, with perhaps two hundred and nine (209) more that have been documented but not yet certified. It is believed that many more vernal pools have not yet been documented or certified. Vernal pools also fall under the jurisdictions of the town, Commonwealth and Natural Heritage Program.

### 2 - Wildlife Corridors

Wildlife corridors are contiguous tracts of land that provide habitat suitable to accommodate wildlife migration patterns. Because Boxford is relatively sparsely developed, wildlife corridors are plentiful. They often follow water courses and their associated wetlands where development is limited. Large protected forest lands that cross municipal boundaries and connect to other undeveloped lands are extraordinary corridors as well. It is important to protect lands that contribute to these corridors.

### 3 - Rare Animal Species

The Natural Heritage and Endangered Species Program lists seven species in Boxford that are classified as Threatened or a Species of Concern. It is essential that the habitats in which these species reside are protected to ensure their populations may increase in size and eventually move off of these lists.

**Table 10. Rare Animal Species in Boxford**

Taxonomic Group	Scientific Name	Common Name	Status
Amphibian	<i>Ambystoma laterale</i>	Blue-Spotted Salamander	SC
Amphibian	<i>Ambystoma opacum</i>	Marbled Salamander	T
Bird	<i>Tyto alba</i>	Barn Owl	SC
Crustacean	<i>Eubbranchipus intricatus</i>	Intricate Fairy Shrimp	SC
Dragonfly	<i>Williamsonia linteri</i>	Ringed Boghunter	T
Fish	<i>Noropis bifrenatus</i>	Bridle Shiner	SC
Mussel	<i>Ligumia nasuta</i>	Eastern Pondmussel	SC
Reptile	<i>Emydoidea blandingii</i>	Blanding's Turtle	T
Reptile	<i>Glyptemys insculpta</i>	Wood Turtle	SC

Table 7. Rare Animal Species in Boxford.

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

Boxford's visual character is reflective of its agricultural past. Since the decline of the region's agricultural economy, much open farmland has reverted back to forest in a process known as ecological succession. Suburban development will continue to create pressure on the remaining open space areas. These areas contain many interrelated, intangible benefits or critical groundwater protection values to the public that should be evaluated for conservation as open space. It is difficult to account for and determine their true value. These values, be they aesthetic, cultural/historic or ecological and recreational, do contribute to the community's overall sense of rural character. With these values in mind, existing scenic areas and areas of unique environmental resources are as follows:

### **1- Scenic Landscapes**

The Department of Environmental Management's (DEM) scenic landscape inventory lists the Lake Cochichewick unit as a prime scenic resource. This unit extends from North Andover to Bradford and contains a portion of West Boxford. The topography is gentle rolling farmland and contains several water bodies. Portions of this unit in Boxford are permanently protected through the town Forest and State Agricultural Preservation Restriction (APR) program. Most land in this area, however, is privately owned and unprotected from future development. Other areas considered for protection of scenic landscapes include: Main Street from Lawrence Road to Middleton Road, Boxford Woods area at Baldpate Pond and possible expansion of the West Boxford, Nason and Hovey's Pond Conservation Area. Lake Cochichewick

### **1- Major characteristics or unusual geologic features**

About 70% of Boxford is tree-covered; there are also significant areas of wetlands and numerous ponds and lakes. Examples are the Wildcat Conservation Area, the area around Baldpate Pond and the esker system on the Anvil Farm property. Portions of each of these three areas are protected permanently through town and Commonwealth ownership. However, many other areas are privately owned and are at risk of future development.

### **3- Cultural, archeological and historic areas**

Local historic areas include Boxford Village Historic District, Howe Village Historic District, West Boxford Village, Lowe Pond mill site, Howe's Pond mill site, Lockwood's Fish Brook mill and bloomery site and the Ipswich River at Masconomet Regional High School. Boxford also has a plethora of old archeological stone walls built from outwash following glacial retreat which are important both to the town's character and history.

### **4- State and National Registers of Historic Places**

The National Register of Historic Places is the official federal list of districts, sites, buildings, structures and objects that have been determined significant in American history, architecture, archaeology, engineering and culture. National Register listings include three districts and five individual properties. Districts include the Boxford Village Historic District, consisting of 43 resources, Howe Village Historic District, having 14 resources, and the Rowley Village Forge Site. Individual listings comprise three First Period dwellings, the Palmer School (known as District School #2 or the Little Red Schoolhouse), Towne Farm and the Spofford-Barnes House. All National Register listings are automatically listed in the State Register of Historic Places.



## 5 - Heritage Landscapes Identified by Community<sup>3</sup>

This list is a revised summary of landscapes discussed in the Boxford Reconnaissance Report Essex County Landscape Inventory by the Massachusetts Heritage Landscape Inventory Program. Landscapes are grouped by type.

### *Agriculture*

**Alderbrook Farm** | Lake Shore Road

APR. Hay is grown here. Cattle and horses grazed. Managed for grassland birds.

**Cargill Field**

Owned by the town and managed by the Conservation Commission. Leased for farming. CR held by BTA/BOLT. Also used for educational, historic and cultural events.

**Haynes Hayfield** | Main St. & Middleton Rd.

Owned by the town and managed by the Conservation Commission. Leased for farming.

**Ingaldsby Farm** | Washington St.

See West Boxford listing in Priority Heritage Landscapes. Farm stand with agricultural fields.

**Ingaldsby West 40\*** | Main Street

APR. Heritage Landscape on Hovey's Pond, farmed

**King's Tree Farm** | Washington St.

Privately owned nursery that sells trees and shrubs. Contains wetlands. CR Held by Greenbelt

**Morss Berry Farm** | Oak Ridge Rd. & Lake Shore Rd.

APR. Working farm.

**Otis Curtis Farm/Small Ox Farm** | Ipswich Rd

Actively farmed. CR held by Conservation Commission.

**Paisley Farm\*** | Washington St.

See West Boxford listing in Priority Heritage Landscapes.

**Woodspell Farm** | Main St.

This farm is south of Witch Hollow Farm, on Main Street.

**North of Boston Farm** | 9 Ipswich Rd

Farm stand.

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<sup>3</sup> Please refer to the Massachusetts Heritage Landscape Inventory Program, Boxford Reconnaissance Report.

Abbreviations and symbols used here:

\* Priority Landscape

APR Agricultural Preservation Restriction

BTA/BOLT Boxford Trail Association/Boxford Land Trust

CR Conservation Restriction

LHD Local Historic District

NR National Register

OSRP Open Space & Recreation Plan

PR Preservation Restriction

TTOR The Trustees of Reservations

### ***Burial Grounds and Cemeteries***

#### **Brookside Cemetery** | Main St.

In West Boxford Village. Old West Parish Burial Ground. From 1838.

#### **Civil War Grave** | Off Great Pond Rd.

This grave is reported to be in a Boxford “meadow” off Great Pond Rd. This “meadow” now woods is owned by the town.

#### **Harmony** | Ipswich Rd.

From 1717. Near the site of former Schoolhouse #3 and near Kelsey Road.

#### **Killam Cemetery** | Endicott St.

On the Masconomet Regional Junior & Senior High School property, next to Rt. 95.

#### **Mt. Vernon Cemetery** | Mt. Vernon Rd.

Just west of Main Street, this 1716 cemetery is framed by a high stone wall with a small iron gate entrance. Markers are marble and granite, with some slate in the earlier section.

#### **Old Burial Ground** | Main St./Mill Run

From 1693. Expansion of Boxford Village NR and LHD to include this burial ground is recommended in OSRP. Clean up and maintenance plan done in 2003 as part of an Eagle Scout project.

#### **Russell Cemetery** | Bald Hill

Family burial ground from the Revolutionary War with three graves from that period.

#### **Village Cemetery** | Georgetown Rd.

NR, LHD. On land that is site of first meetinghouse, now opposite First Congregational Church. Land donated by Asa Peabody in 1807.

### ***Industrial***

#### **Chadwick Mill** | Main St.

This 1.5-acre site, owned by the Boxford Trail Association/Boxford Open Land Trust (BTA/BOLT) is near Hovey’s Pond. Has a mill race and the original mill stone.

#### **Howe’s Pond Mill** | Fish Brook

Once a grist mill followed by a sawmill, the site has been converted into a Japanese garden. A small mill building with a wheel was reconstructed as part of the garden. A new bridge, completed in 2004, carries Mill Road over Fish Brook at this mill site.

#### **Lockwood’s Grist Mill** | Lockwood Lane

On Fish Brook the site of this grist mill is next to the Rowley Village Forge Site. This site is marked by a metal turn wheel still standing in Fish Brook mill race.

#### **Lowe’s Pond Mill** | Off Depot Rd.

Once known as the Chapman Sawmill and later as Killam’s, the site on Pye Brook includes a raceway, a dam, the mill pond called Lowe’s Pond. It is near the old railroad station which was used to ship lumber. The dam has been reconstructed and the mill race is evident; however, no buildings remain.

#### **Match Factory** (John Boardman House) | 6 Lawrence Rd.

Located on Fish Brook is the superintendent’s house which also served as a dormitory. The factory building, the dam and the pond no longer exist.

**Morss Mill Site** | Lake Shore Rd.

This mill site is within the agricultural preservation restriction area of the Morss Berry Farm.

**Pye Brook Mill** | Georgetown Rd.

Part of the stonework of the mill remains as evidence of the early history.

**Rowley Village Forge Site\*** | Lockwood Ln.

See Priority Heritage Landscapes in Report. Bloomery included at the site.

*Natural Features*

**Baldpate Pond** | Boxford State Forest

The view of this pond from Great Pond Road or Baldpate Road, is one of the more spectacular views in town.

**Cole's Pond** | Main St.

The pond is on the northeast side of Main Street near West Boxford Village. The pond's features are a significant beaver dam, many lily pads and invasive plant material. Pond contributes to the Parker River.

**Fish Brook**

Viewed from Middleton Road. Headwaters include Mosquito Brook in North Andover, and Stiles and Towne ponds in Boxford.

**Hovey's Pond\*** | West Boxford

See West Boxford Village in Priority Heritage Landscapes in report.

**Ipswich River**

Off Endicott St. Along the southern border of Boxford through the Masconomet Regional School property.

**Johnson's Pond**

Most of pond is in Groveland & Haverhill. Boxford's zoning regulating development at pond edges is more restrictive than regulations in abutting communities, particularly Haverhill.

**Kimball Pond** | Main St.

Located north of Sheffield Rd. One of the ponds that is drained by Fish Brook and contributes to the public water supply of the Ipswich River.

**Lowe Pond** | Off Depot Rd.

Connected to Pye Brook – See Industrial listings above.

**Parker River** | Along Rt. 133

Habitat for endangered turtle species, Blanding's Turtle.

**Pye Brook**

Viewed from Depot Road. Flows through Lowe Pond. Originates at Four Mile Pond.

**Spofford Pond**

Between Ipswich & Spofford Rd. The Pond is threatened by nitrogen loading due to septic systems along the shore.

**Stevens Pond**

South of Ipswich Rd. Most of the surrounding 22 acres of land is protected under the ownership of BTA/BOLT. There are a few privately held house lots with water frontage.

**Stiles Pond\*** | Main St.

See Priority Heritage Landscapes in Report.

**Towne Pond**

Part in North Andover. Located in the southwest corner of Boxford. Zoning is an issue with denser allowances along the North Andover shores of the pond.

*Open Space – Parks.*

**Chadwick Mill** | Main St. West Boxford

Owned and managed by BTA/BOLT (see BTA/BOLT guidebook for details).

**Cleveland Farm State Forest** | Rowley Rd.

CR protecting 17 acres. Owned and managed by DCR. Within the State Forest a key feature is the (former) Haynes Property Esker system.

**Haynes Recreation and Conservation Area** | Middleton Rd.

75 acres of woodlands, meadows, trails, as well as walking paths, play structures, and athletic fields. The Town holds the CR on 57 acres of the area.

**Kelsey Arboretum** | 18 Kelsey Rd.

This property is named for landscape architect Harlan P. Kelsey (1872-1958). The Arboretum was planted in 1929 as a display garden for Kelsey-Highlands Nursery. It is now owned by Kelsey Condominium Assn and open from dawn to dusk. The Horticultural Society of Boxford was formed to hold the CR. It is a stop on the Bay Circuit Trail.

**Nason Conservation Land** | Washington St. West Boxford

46 acres on Hovey's Pond, with trails and spectacular views of the Pond.

**Round Top\*** | Round Top Rd.

At Chapman Way. See Priority Heritage Landscapes in Report. Camp Curtis Guild.

**Wildcat Conservation Area** | Herrick Rd.

Off Ipswich Rd. Located southwest of Stiles Pond, the 319.2 acre Conservation Area is town owned and under the jurisdiction of the Conservation Commission. It was originally taken by the Town for water resource protection. The vicinity has been identified as having archaeological potential. Historically the land was pasture, woodlots and orchards. White pine was harvested by the Diamond Match Factory at the end of the 19th century. Now the area is wetlands and wooded uplands.

**Witch Hollow** | Main St. & Ipswich Rd.

Town owned property under Conservation Commission. The 1690s meadow is planted with native deep meadow/prairie grass which has 6' to 20' roots into ground providing a fine habitat for wildlife, especially grassland birds.

*Transportation*

**Bay Circuit Trail**

The trail passes through Boxford and is an important part of the town's trail system.

**Railroad Right-of-Way**

The railroad right-of-way has been partially developed into a rail trail.

**Scenic Roads\***

See Priority Heritage Landscapes in Report. Rural character of roadside views.

**Walking Trails**

BTA/BOLT maintains a system of trails for passive recreation through the efforts of volunteers.

**6 - Areas of Critical Environmental Concern (ACEC)**

This section is typically a special listing of areas that directs state environmental agencies to review projects under their jurisdiction and preserve the resources of that particular area. None are currently listed in Boxford. However, there are similar programs that both the Commonwealth and the town can utilize in protecting these valuable resources.

In the Riverways Program, Division of Fisheries and Wildlife has cited Fish Brook as one of the critical resources needed to protect the Ipswich River Watershed. The objective should be to establish an overlay plan identifying properties and areas on the brook worthy of permanent protection, or a Best Management Plan should be established. To protect water quality and quantity, Pye Brook and the Parker River, also sensitive regional resources, should have areas designated for protection in addition to the Rivers Protection Act regulations. Greenways are deeded, protected areas along rivers that can help connect dispersed open space parcels. Although there is no formal Stream Team to monitor Pye Brook, the Parker River has its own Clean Water Association of volunteers to monitor river changes each month. In addition, the Ipswich River Watershed Association has a volunteer River Watch group that monitors two sites along Fish Brook: one site at Fish Brook by Middleton Road and the other at Fish Brook by Washington Street in Topsfield. Volunteers monitor water-quality parameters such as temperature, water clarity (turbidity), and dissolved oxygen content. Data collected over the past eight years is available from the IRWA's website.

About 14% of North Andover's Lake Cochichewick watershed is located in Boxford. Most of this land is under agricultural use or is unprotected, privately owned open space.

The City of Haverhill has some rights over Johnson's Pond for secondary water supply purposes. Haverhill also has certain rights over Hovey's Pond and Chadwick Pond, as they both feed into Johnson's Pond. In 2020, the town acquired 14.54 acres of conservation land on Hovey's Pond, thereby helping to fill in a contiguous wildlife corridor around the pond and to the Boxford Town Forest. Most of this corridor is accessible to the public. Pond Watershed Overlay Districts were adopted by the town to provide protection to Stiles, Baldpate and Hovey's Ponds in 1996.

There are extensive areas of Estimated Habitats of Rare Wildlife listed with the Commonwealth's Natural Heritage and Endangered Species Program located in Boxford. Similar to the Areas of Critical Environmental Concern (ACEC) along coastlines, Natural Heritage is primarily concerned with wildlife species that are of special concern, threatened or endangered. These areas are reviewed by them and are under the jurisdiction of the Massachusetts Endangered Species Protection Act.

**G - Environmental Challenges Hazardous****1 - Waste and Brownfield Sites**

According to information from the MassDEP, there have been 30 oil and hazardous waste releases to the environment identified in Boxford. Many of these involved a release of petroleum products (gasoline, fuel oil, etc.) from leaking underground storage tanks or tank overfills, transformer oil leaks or minor releases from vehicle accidents. The Boxford landfill is listed among the sites and has achieved A2 Response Action Outcome (RAO) status ("A permanent solution has been achieved. Contamination has not been reduced to

background”). All except the most recent site, a truck accident-related spill on Ipswich Road in July 2022 have achieved some form of compliance status. The town is currently working with the truck owner and its Licensed Site Professional to achieve compliance for this recent spill.

## **2 - Landfill**

The Boxford landfill operated from 1944 to 1998 and is located on municipally owned land near the Town Hall/Police Station/Department of Public Works complex near the intersection of Spofford Road and Ipswich Road. The landfill has been capped in accordance with a landfill closure plan approved by the MassDEP. The town is in negotiations with the MassDEP on approval of the final closure of the landfill. A series of monitoring wells have been installed around the landfill as part of the closure plan. Test results from these wells indicate exceedances of arsenic drinking water standards in some but not all wells. An analysis by Weston and Sampson, the town’s consultant, suggests that this arsenic is from natural sources in the bedrock rather than landfill leachate.

In cooperation with adjacent towns, Boxford also holds hazardous waste collections on an annual basis to allow residents to safely dispose of waste solvents, paint, pesticides, etc. The recycling and hazardous waste collection activities, as well as the landfill capping, help to protect the Boxford’s groundwater and drinking water resources. The OSRP results reiterate that protecting groundwater and water supplies continue to be an issue of great concern to the town’s residents.

## **3 - Erosion and Sedimentation**

Environmental quality is diminished through erosion and permanent soil loss which reduces the land’s capability to restore its vegetative cover. Erosion may present a problem on construction sites and on properties with steep inclines. Sedimentation refers to the accumulation of mineral or organic matter deposited by water, air, or ice. When sediment accumulates it alters the characteristics of the area or water body where this occurs. Sedimentation can affect water depth, surface area, circulation patterns and flow rates, which can impact water quality. Sedimentation can also reduce the capacity of wetlands to absorb water.

The Boxford Conservation Commission reviews, permits, and monitors construction projects under the Wetlands Protection Act, Boxford’s Wetlands Protection Bylaw, and Boxford’s Stormwater Management Bylaw, as applicable, to ensure that appropriate mitigation measures are followed to minimize erosion and sedimentation. There are numerous other examples of town review and approval of construction projects. The Board of Health reviews and approves construction projects that involve the transport on or off site 500 cubic yards of earth or more. Driveway projects are reviewed and approved by the Planning Board. Projects involving town rights-of-way are reviewed and approved by the Select Board and/or the DPW Superintendent. The ZBA reviews projects that require special permits of site plan review. Wells and septic systems require Board of Health review. In short, there are very few projects involving significant disturbance of the earth that do not require some sort of review and approval by the town.

## **4 - Chronic Flooding.**

Boxford’s abundance of wetlands helps to mitigate most high-water events due to large storms and spring snow melts. FEMA’s Flood Insurance Rate Map (FIRM) shows that the flood hazard zones are predominantly limited to the river valleys and areas around ponds. Property bordering Four Mile Pond has been identified as an area that is regularly impacted by flooding. The flooding is due to lack of holding capacity at Lowe Pond Dam, which requires that flood waters during large storms be stored upstream at

Four Mile Pond. This issue should be addressed as part of a watershed management program for Pye Brook and Lowe Pond Dam.

**5 - New Development**

Most new development has some impact on the environment although many of these impacts can be minimized by enforcement of federal, state and local regulations. Impacts occur during construction as vegetation is altered, and topsoils are disrupted allowing wind, rainfall and snowmelt to trigger erosion and sedimentation. Ongoing impacts of development are an increase in impervious surfaces which can contribute to reduced groundwater recharge and increased storm water runoff, pollution from construction and industrial processes, and loss of open space, vegetation and tree canopy.

At the Spring Annual Town Meeting in May 2006, the town adopted a Stormwater Management Bylaw that authorized the Conservation Commission to promulgate such regulations for construction sites covering at least one acre and located within the designated “Urbanized Area” as determined by the U.S. Census Bureau. These threshold requirements reflect the minimum requirements of the National Pollutant Discharge Elimination System (NPDES) program. The Conservation Commission adopted regulations in the fall of 2007 and have expanded/updated the regulations several times since. As currently drafted, a complete application for a Stormwater Management Permit from the Conservation Commission would include a Stormwater Management Plan, a Hydrology Report demonstrating compliance with the MassDEP policy, and an Operation and Management Plan. To date there have been seven projects reviewed under the Stormwater Management Plan requirements.

**6 - Impaired Water Bodies**

Under the federal clean water act states are required to monitor and assess the quality of their surface and groundwater. Waters are evaluated on their capacity to support their designated uses that are defined in the surface water quality standards. Waters must be evaluated for their attained uses and impairments and placed in one of the following categories: 1-unimpaired and not threatened for all designated uses, 2-unimpaired for some uses others not assessed, 3- insufficient information to make assessments for any uses, 4-impaired or threatened for one or more use but not requiring a TMDL (Category 4b indicates that the water body is expected to attain all designated uses through pollution control measures. Category 4c indicates that the impairment is not caused by a pollutant. These impairments are often caused by noxious aquatic plants or exotic species), 5-impaired or threatened for one or more use requiring TMDL.

The following table shows waters in Boxford that have been evaluated for uses and impairments from the Massachusetts 2018-2020 reporting cycle Integrated List of Waters. It should also be noted that no water bodies in Massachusetts were designated as category 1 because of a statewide public health advisory on fish consumption.

**Table 11. Evaluated Waters for Uses and Impairments in Boxford**

Water Body	Category	Attained Uses	Impairments
Baldpate Pond	5		Curly Leaf Pond Weed, Fanwort, dissolved oxygen, mercury in the fish tissue

Chadwick Pond	5	Mercury in Fish Tissue
Fish Brook	5	e-coli
Four-Mile Pond	3	
Hovey's Pond	5	Mercury in Fish Tissue
Ipswich River	5	Dewatering, dissolved oxygen, mercury in fish tissue
Johnsons Pond	5	Mercury in Fish Tissue, Dissolved Oxygen
Kimballs Pond	3	
Lowe Pond	5	Non-native aquatic plants, Mercury in Fish Tissue
Lower Four Mile Pond	4c	Non-Native Aquatic Plants
Mill River	5	Fish passage barrier, water chestnut, algae, non-native aquatic plants
Parker River	4c	Dewatering, fish passage barrier
Penn Brook	5	Benthic macroinvertebrates, dissolved oxygen
Sperry's Pond	3	
Spofford Pond	3	
Stevens Pond	4c	Non-Native Aquatic Plants
Stiles Pond	3	
Towne Pond	3	

Table 8. Evaluated Waters for Uses and Impairments in Boxford.

## 7 - Dams

In Boxford there are eleven dams identified in Boxford by the state office of Dam Safety. Of these, only Stiles Pond Dam and Howes Pond dam are identified as being of “Significant Hazard”.

Stiles Pond Dam is a 170 ft long earth embankment with a reinforced concrete wall forming the center 100 ft. The spillway of the dam is a reinforced concrete block culvert. Inside of this culvert there are stoplogs which establish normal water levels in the pond. The earthen portion of the dam was substantially repaired and improved in 2014 with the addition of clay and rip-rap to the areas that were seeping or eroding. A dam management plan has yet to be completed for this dam.

Howe Pond Dam is privately owned and first build in the 1700's. The dam has been repaired many times since then. The dam consists of three channels. The main dam, which is in the center, is approximately 100 feet across. To the right and to the left of the main structure there are two spillways, the larger of which is on the left. Both of them experience intermittent flow at some points during the year. The dam and surrounding areas are well maintained by the homeowner.

There are also three dams identified as “Low Hazard” in Boxford: Lowe Pond Dam, Four Mile Pond Dam, and Baldpate Dam. Lowe Pond Dam is a privately owned dam which was created in the 1950's. The dam was rebuilt in the 1970's and is comprised of two structures, an earthen dam and a concrete weir. The earthen portion of the dam is 137 feet long and the concrete weir is 53 feet long. Maintenance of this dam consists mostly of controlling erosion and vegetation management. This dam constricts water flow downstream in Pye Brook in the summer months. Floodwaters have been known to threaten the earthen part of the dam, requiring emergency assistance from the town to prevent overtopping. To ameliorate this



hazard, town officials, acting under emergency powers, have at times stored floodwaters upstream of Four Mile Pond during large storms. This emergency action unfortunately increases the risk of flooding to property bordering Four Mile Pond. This issue should be addressed as part of a watershed management program for Pye Brook.

Four Mile Pond Dam is a privately owned dam located at the outlet of Lower Four Mile Pond on Georgetown Rd. The dam outlet is a concrete structure with two spillways that are approximately 5 feet wide. There is a center concrete post between the two spillways. This dam was significantly repaired in 2022 by replacing spalled concrete on the piers.

Baldpate Pond Dam, shown on the state GIS map as being in Boxford, actually consists of a large concrete culvert under a former railroad causeway at the eastern end of Baldpate Pond in the town of Georgetown. The causeway is planned to be part of the Border to Boston “rail-to-trail” recreational trail project.

Other dams of interest include Lockwood Dam. This dam is located on lower Fish Brook and is the first impoundment of Fish Brook as you move up stream from the Ipswich River. The dam dates from the 1670’s. A portion is owned by the town while the other portion is privately owned. The dam is constructed of iron plates that are driven across the brook. The dam is approximately 60 feet wide and holds back approximately 2½ feet of water. The dam was repaired in the fall of 2007.

In addition to the dams noted above, barriers to fish passage have been noted in two culverts along Fish Brook: one where Fish Brook goes under Towne Road and the other where Fish Brook goes under Main Street. Should these culverts need replacement they would need to comply with current stream crossing requirements that provide fish and wildlife passage.



Figure 4. Stile Pond Dam.

## 8 - Invasive Species<sup>4</sup>

Invasive plants, those that grow rapidly and are difficult to remove or control once established, are often threats to forests and wetlands. When invasive species take over large areas of habitat, ecological processes are changed. Often invasive species force out native species that provide food and habitat for local species. Plants that have been identified as being a threat to Massachusetts forests include such commonly seen plants as Norway Maple (*Acer platanoides*), Sycamore Maple (*Acer pseudoplatanus*) Japanese Barberry (*Berberis thunbergii*), Multiflora Rose (*Rosa Multiflora*), Garlic Mustard (*Alliaria petiolata*), Japanese honeysuckle (*Lonicera japonica*) and Common Buckthorn (*Rhamnus carthartica*) among others.

Some commonly found invasive species that pose the greatest threat to wetland, floodplain and streambank communities include Phragmites or Common Reed (*Phragmites australis*), Glossy Buckthorn (*Rhamnus frangula*) and Yellow Iris (*Iris pseudocorus*). Recently, infestations of Japanese Hops (*Humulus japonicus*) have also been observed overtaking recently disturbed areas.

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<sup>4</sup> Taken from a list of plants identified by the Massachusetts Invasive Plants Advisory Group. <http://www.massnrc.org/mipag/invasive.htm>.

## **9 - Forestry Issues**

Forests are important for providing wildlife habitat, regulating climate and assimilating pollution, protecting water supply and quality, mitigating flooding and retaining soils. Forests also have important aesthetic and recreation value, adding greatly to quality of life. Forests face multiple threats from invasive plant species (see above) and pests including the Asian longhorned beetle, Emerald Ash Borer, Gypsy moths and Winter moths. Limiting development within forested areas and monitoring and managing forests within the towns protected open spaces is important to ensure the long-term sustainability of Boxford's forests and the benefits they provide.

## **10 - Environmental Equity**

Environmental equity refers to issues such as equal access to open space, lack of tree cover or other differences a person endures in one's environment based on that person's inclusion in a population identified as an environmental justice population. Environmental justice populations are those with high percentages of minority, non-English speaking, low-income, and foreign-born populations. There is no environmental justice population as identified by the state in Boxford.

Environmental equity also refers to the ability of all users, regardless of where they live in a community, to access open space. Boxford's open space resources are distributed throughout the town providing opportunities for access with relative ease for all, from Boxford and surrounding communities.

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## **Section 5 - Inventory of Lands of Conservation and Recreation Interest**

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Open Space is important for protecting groundwater and drinking water, wetlands, wildlife habitat and preserving forests. Open Space also serves passive and active recreational needs in providing parks, playgrounds, access to water, trails and athletic fields for the varied recreational interests of residents and guests. Whether preserved and managed for resource protection or passive or active recreation, Open Space contributes to the rural character of the town.

The current Inventory of Lands within the Town of Boxford is included in this section. The inventory contains two (2) categories as defined by the Massachusetts Division of Conservation Services: Protected Lands that are protected in perpetuity from development and Unprotected Lands that are not protected from development. Note that lands owned by the State or the town that do not carry a conservation restriction are included in the list of Unprotected Lands as these lands could be used for the construction of town buildings or other uses, or sold to private developers, unless their purchase was funded either by the Boxford Open Space Bond or CPC Open Space Funds. All Unprotected Lands (not protected by deed restriction or funding mechanism) are at risk of being converted to a use other than open space.

The Inventory of Lands Within the Town of Boxford also includes Parcels of Interest which are lands identified as acquisition and/or preservation priorities of the town based upon the results of community input and on the consideration of the town's most sensitive and vulnerable resources including lands identified as core habitat and critical landscapes.

Protected Lands are shown on the Open Space Inventory Map (Appendix I) and contained within a matrix in Appendix II. Data for the spreadsheet were obtained from the local Assessor's Office. Protected Lands include the following:

- State-owned Open Space
- Municipally owned Open Space
- Privately-owned Open Space – Lands owned by BTA/BOLT, Inc., Essex County Greenbelt, lands with Conservation Restrictions (CR) and Agricultural Preservation Restrictions (APR)

The Open Space Inventory Map (Appendix I) also includes Unprotected Lands that are Public Lands and Private Lands that are subject to development and not permanently protected. They include:

- State Lands
- Municipal Lands
- Chapter 61, 61A or 61B
- Institutional and Non-Profit Properties
- Rail/Utility ROW
- Other Private Property Parcels

In addition to the categories of lands listed above, the Open Space Inventory Map includes lakes, ponds, streams, rivers and wetlands and Historic District boundaries.

### **A - Protected Lands**

Protected Lands includes land owned by the state, town, BTA/BOLT, Inc., Essex County Greenbelt Association and Conservation and Agricultural Preservation Lands (Appendix II). These lands have a

conservation deed restriction and/or are protected by Article 97 of the Articles of Amendment to the State Constitution that protects lands acquired for the preservation of resources or for recreational purposes from development unless five (5) actions are met, including a 2/3 vote by the State Legislature to change use. While conversions of Article 97 land do occur, the process is purposefully onerous in order to provide the most stringent protection possible. Deed restricted lands are protected in perpetuity.

## **1 - State Lands**

Based on assessor records there are 1,371 acres of state-owned and protected land in Boxford. State-owned lands include Baldpate Pond State Forest, Cleveland State Forest, and Boxford/Rowley/Georgetown State Forest owned by the Department of Conservation Services and Phillips Wildlife Sanctuary owned by the Division of Fisheries and Wildlife. All state-owned protected lands are open to the public for recreational purposes.

## **2 - Municipal Lands**

The Town of Boxford owns approximately 1,184 acres of protected land for conservation and recreation purposes. Primary parks and open spaces include:

*Wildcat Conservation Area* | 319 acres

Forested conservation land with maintained trails for hiking, horseback riding, and mountain biking. Contains several ecologically significant environments. The wetlands feed into the nearby Stiles Pond, Fish Brook and Pye Brook.

*Wunnegen Conservation Area* | 135 acres

Home to a number of rare and endangered species. The terrain is woodlands, wetlands, small streams, and uplands.

*Town Forest* | 60 acres

Consist primarily of hardwood trees with some evergreens. There is an extensive beech grove in the southern parcel. The forest provides habitat for wild turkeys, deer, and a large variety of songbirds and vernal pond species.

*Lockwood Forest* | 100 acres

Includes frontage on both banks of Fish Brook, a tributary of the Ipswich River, and abuts over 2,000 acres of existing conservation land. Home to a variety of native and exotic plants. The property provides habitat for herons, ducks, geese, red tailed hawks, deer, fox, wild turkeys, coyotes, otter, fisher and possibly bobcat.

*Anvil Farm* | 28 acres

Consists of forests, fields, streams, hills, an esker, a beaver pond and a vernal pool.

*Millbrook Farm* | 11 acres

Grazing land, with trail leading to private wooded trails. A variety of birds can be found along with beaver, otter, and mink.

*Stiles Pond Field and Beach* | 7.7 acres

Pond beach area, shaded area with picnic tables.

*Boy Scout Park* | 22 acres

Mixed use playing fields and meadow. Natural features include Fish Brook, woods, fields, gravel and sand beds.

*Haynes Field* | 5 acres  
Open meadow; hayed.

*Haynes Land* | 75.5 acres  
Purchased with CPC funds from 3 sources; Conservation Land, Recreation Land and Community Housing. Purchased for athletic fields, community housing and open space; largely mixed woodland, pond, stream.

*Hovey's Pond Meadow* | 8 acres  
Wetland on Hovey's Pond; bird habitat.

*Lord Woods* | 31.5 acres  
Mixed woodland; stream.

*Lord Forest and Fields* | 34 acres  
Mixed woodland, planted evergreens, "Fairy Ring", grazing pasture.

*Nason Conservation Land* | 45 acres  
Mixed woodland, overlooking Hovey's Pond; power lines, providing bird habitat.

*Whitney Woods* | 10 acres  
Mixed woodlands, trail.

*Witch Hollow Farm* | 17 acres  
Open, wet meadowland, managed for native grasses and bird and wildlife habitat; hayed once a year.

*Cargill Fields* | 14.5 acres  
Hay land and mixed forest fronting on Fish Brook.

*Davis Hayfield* | 4.5 acres  
Hay land.

*Bergstrom Land* | 14.5  
CR held by ECGA

### **3 - Non-Profit Lands**

There are two nonprofit land preservation organizations in Boxford.

**The Boxford Trails Association/Boxford Open Land Trust (BTA/BOLT, Inc.)** is a volunteer private, nonprofit, organization dedicated to conserving and protecting environmentally and aesthetically important land and habitat, including fields, forests, wetlands, and trails, preserving the nature of Boxford. BTA/BOLT, Inc. owns 262 acres within Boxford including among others:

*Ericson Woods* | 15 acres  
Abutting Lord's Woods, stream and woodlands.

*Fish Brook Parcel* | 15 acres  
Wetland which abuts Fish Brook property owned by ECGA.

*French Family Woodlot* | 15 acres  
Suburban trails, part of Bay Circuit Trail. Steven's Pond Wetland | 22 acres) A large pond surrounded by wetland vegetation. Alpers' Woods | 14 acres) On Stiles Pond, trails and a boat landing.

*Owen Land* | 15 acres  
Abuts the Lockwood Forest.

*Perkins' Woods* | ~18 acres  
Meadow and woodland trail.

*Potters Farm and Barker's Property* | 76 Acres combined  
Mixed forest, several vernal pools, wetlands, hemlock groves, trails, power line habitat. Several endangered species can be found here including Blanding's turtles, blue spotted salamanders and box turtles.

*Shaven Crown Hill* | 35 acres  
Open meadow leading into forested trail, including woodlands, wildlife and vernal ponds.

*Townsend Farm Parcel A* | ~12 acres  
Wetland in a subdivision.

**The Essex Country Greenbelt Association (ECGA)** is a nonprofit land trust dedicated to preserving the open space heritage of Essex County. ECGA owns around 455 acres within Boxford, including the following:

*Carter Fields* | 85 acres  
Part of the Lake Cochichewick watershed, North Andover's sole source of drinking water. A large blue-heron rookery becomes active in May and June, as up to 70 pairs of herons create annual nests at this site.

*Ingalls Memorial Wetlands* | 31 acres  
Wetlands within Ingaldsby Farm abuts 88 acres CR held by ECGA within Ingaldsby Farm.

*Price Reservation* | 88 acres  
Includes the features of a classic northeast woodland; mixed stands of hardwoods and softwoods across a rolling landscape, frontage on Towne Pond, a shallow farm pond teaming with wildlife and a brook that flows out of Towne Pond and through a large wetland where beaver are active.

#### **4 - Deed Restricted Lands**

The Town of Boxford Conservation Commission (Cons Com), BTA/BOLT, Inc., ECGA, the state and the Mass Farm Bureau all hold deed restrictions on privately held properties to protect them in perpetuity. Together, these restrictions protect over 750 acres. For a full list of deed restricted lands see Appendix II. Some of the larger or more visible properties protected by deed restrictions in Boxford include:

- Alderbrook Farm (70 acres) -APR by State Department of Agriculture
- Anvil Farm (28 acres) - APR by Mass Farm Bureau
- Cargill Fields (14 acres) - CR held by BTA/BOLT
- Cleveland Farm (30 acres) – CR held by ECGA
- Coolidge 100-Acre Woods (85 acres)- CR held by BTA/BOLT
- Davis Hayfield (4 acres) - CR held by BTA/BOLT
- Hills Property (22 acres) - CR held by BTA/BOLT
- Ingaldsby Farm West Forty (40 acres) -APR by Mass Farm Bureau
- King Tree Farm (24.7 acres)- CR held by ECGA
- Lord Property (64 acres) -CR held by Cons Com and ECGA
- Morss Berry Farm (125 acres) -APR by State Department of Agriculture
- Price Property (88 acres) -CR held by BTA/BOLT
- Shaven Crown Property (40 acres)- CR held by ECGA
- Smolak Farms (50 acres) – CR held by Cons Com
- Town Forest (60 acres)- CR held by BTA/BOLT

## **B- Unprotected Lands**

Unprotected Lands include both public and private lands, including lands that have partial or temporary protection. Unprotected Lands are at risk of a change in use including development and include the following.

### **2 - Municipal Lands**

Unprotected town-owned lands are lands that do not have a conservation restriction and are not protected by Article 97. They include school properties, and other lands serving municipal purposes, gifted lands, and tax title lands. Unprotected town-owned lands can be developed or sold with approval by Town Meeting.

### **3 - Chapter 61**

Private landowners can manage their properties for Open Space purposes and benefit by a reduced property tax under three distinct special taxation programs: State Chapter 61 (forestry), Chapter 61A (agriculture) and Chapter 61B (recreation). These classifications do not provide permanent protection as the landowners can withdraw their properties from these programs at any time. If these properties are offered for sale while within the program, the town has a 'right of first refusal' to purchase the property within 120 days after a purchase and sale agreement for the property has been signed by a private buyer. Based on assessor's data, there are 1,694 acres within Chapter 61 tax abatement programs in 2023.

Institutional and Non-Profit unprotected properties include a number of camps, cemeteries and church properties including Camp Sackajawea, Camp Rotary, and Far Corners Golf Club. These lands can be developed or sold.

### **4 - Rail/Utility Rights of Way**

National Grid owns the right of way formally known as the Newburyport Branch of the Boston and Maine Railroad. A long-term lease is being considered so that the right of way can be used as an extension of the proposed northern branch of the Borders to Boston Trail connecting Danvers to Salisbury.

There are utility corridors throughout Boxford that are used for hiking, biking and wildlife corridors. These Rail/Utility Rights of Way can be developed or sold, unless there is a successful lease.

## **C - Parcels of Interest**

In the winter of 2023, a town wide Open Space and Recreation Survey was conducted to assess among other things, the acquisition and protection priorities of the town. As a point of reference, the following percentages of respondents classified the following as **Important** or **Very Important** in the survey (Appendix III):

- 93% to continue to acquire land to protect groundwater and drinking water resources
- 84% to continue to acquire land to protect wildlife habitat
- 85% to continue to acquire land to protect forests
- 70% to continue to acquire land to protect farmland/agricultural land
- 49% to acquire land for active recreation needs
- 80% to acquire land for passive recreation needs
- 80% to continue to acquire land to protect the scenic/ rural character of the town
- 45% to provide paved bike paths
- 41% to provide bike lanes



- 71% to provide Rail Trail
- 43% to provide sidewalks in town centers
- 58% to provide sidewalks around schools

The Open Space and Recreation Committee has determined that Questions with 59% or higher rating should be targeted for Protection or Acquisition. The criteria for land preservation and land acquisition are defined as:

1. Protection and acquisition of lands that protect the groundwater and drinking water resources. Many of these parcels are located along riparian areas along the two major rivers in Boxford: The Parker River and Fish Brook.
2. Protection and acquisition of lands along major road corridors to preserve the rural character of the town. Major road corridors are:
  - Elm Street
  - Georgetown Road
  - Herrick Road
  - Ipswich Road
  - Lawrence Road
  - Main Street
  - Middleton Road
  - Rt 133/Washington Street
  - Rt 97
  - Topsfield Road
3. Identification of lands that are over 10 acres for:
  - Protection of wetland and wildlife habitat
  - Protection of forests and woodlands
  - Protection of real estate values
  - Active recreation
  - Passive recreation
  - Protection of farm/agricultural land

**D - American with Disabilities Act (Holly and Mary-Ann are working on this)**

Refer to Appendix IV: Section 504 Self-Evaluation of Handicap Accessible Open Space. Refer to Section 9 – Seven Year Action Plan for planned accessibility improvements.



*Figure 5. Girls softball, Johnson Field.*

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## Section 6 - Community Vision

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### A - Description of Process

The Board of Selectmen appointed the Open Space and Recreation Committee of five people at the end of 2022 to update the 2016 Open Space and Recreation Plan. After reviewing the previous plan and reviewing the Massachusetts Division of Conservation Services guidelines for Open Space and Recreation plans, the committee developed a survey that was distributed to all 2,758 households in Boxford.

In addition to compiling the results of the 410 completed surveys (a response rate of approximately 15% of households), the committee also asked for a written statement of need and/or held discussions with the following committees or groups:

- Agricultural Committee
- Board of Health
- Board of Selectmen
- Boxford Athletic Association (BAA)
- Boxford Recreation Committee
- Boxford School Committee
- Conservation Commission
- Masco Youth Football and Cheerleading
- Planning Board
- Tribal Lacrosse

Letters outlining the objectives of interested parties are included in Appendix III of this report. The goals outlined in this report reflect the discussions the committee had with members of boards, committees, groups and the community through various outreach efforts and the data collected from the community-wide survey.

### B - Statement of Open Space and Recreation Goals

Boxford continues to be a town that many cherish for its rural character and open space. Over the past two decades, the town and local land trust organizations have been successful in acquiring many open space lands, helping to preserve the rural character of the town. The survey results indicate that preservation of open space continues to be an important priority for a majority of town residents

Over 96% of residents say their highest priority is the preservation of open space to protect groundwater and drinking water resources, which was also the highest priority in the previous 2008 and 2016 surveys. Other important priorities include preserving the rural character of the town, protecting wildlife habitat, preserving forests and protecting farmlands (cited as very important or important by at least 84% of respondents). 88% residents also place high importance on preserving or improving open space to use for passive recreation (i.e., hiking), while 55 % place high importance on preserving or improving open space to use for active recreation (i.e. fields) in the 2023 survey.

Based on the input received, the Committee recommends that Boxford continue to preserve/improve open space with the highest priority given to the following:

- Preserve and Protect:
  - Groundwater and drinking water resources.
  - Wetlands and wildlife habitat, including riparian areas and wildlife corridors.

- Lands along major road corridors to help preserve the town’s rural character.

As Boxford is a small town that relies on groundwater and other water resources for drinking, with limited secondary infrastructure, it is essential to keep these structures safe. Further, maintaining the town’s unique and valuable wetland and wildlife habitats, as well as rural character, is of importance.

- Identify parcels of land over 10 acres for:
  - Preservation of forests
  - Preservation of farm/agricultural land.
  - Passive recreation.

Preserving large parcels of land in Boxford to maintain their historic uses will aid in maintaining the town’s overall rural character and preserving its valuable natural resources.

- Acquire land for passive recreation.

Many citizens identified a need for more expansive passive recreation facilities in Boxford in their survey responses. Expansion of these parcels will ensure that Boxford residents have equitable and frequent access to passive recreation and immersion in nature, while also ensuring Boxford’s rural character is maintained.

- Improve roadside safety for walking and biking.

Boxford is an active community which takes advantage of its existing trail network for biking and walking. Continuing to grow and maintain this network, while ensuring residents are safe from vehicular traffic will result in higher quality use of this recreational resource

- Build awareness of existing open space and recreation resources.

While many Boxford residents take part in outdoor recreation, it is essential to remind residents and inform new residents of the town’s offerings. Building messaging around available recreational resources will ensure all community members are aware of their recreational opportunities.

The members of this Committee press upon the Selectmen, Town Manager, Committees, and Boards to invest in quality of life by implementing initiatives that achieve the goals set forth in this report.

**Commented [CG1]:** Not necessary if you do not want to include it



*Figure 6. Witch Hollow, Ipswich Road.*

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## Section 7 - Analysis of Needs

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### A - Summary of Resource Protection Needs

As can be seen from the preceding sections, Boxford's residents enjoy a wide variety of natural attributes. There are open fields, woodlands and wetlands that support both flora and fauna. Recreational opportunities include trail systems on both public and private lands that allows residents and visitors to take advantage of the outdoors. There are several ponds with public access for canoeing, fishing and swimming. There are many miles of roads in town, providing recreational opportunities for cyclists and joggers, though review of the survey results and comments indicated that traffic volume and speed are a widespread concern. Even though the town does own or manage many open spaces for use in a variety of ways (active recreation, passive recreation, etc.), survey results indicated interest in further acquisition and preservation of Boxford's unprotected open space parcels and its natural resources. The natural features and landscape of Boxford contribute greatly to the town's rural character, which the survey indicated a very strong desire to preserve.

As in previous surveys, the 2023 survey indicated a strong desire on the part of the town's residents to protect Boxford's natural resources. Over 90% of survey respondents felt it was either important or very important to preserve or acquire open space to protect the town's groundwater and drinking water resources. Given that all households in town have private wells to supply drinking water, it is gratifying to see the residents' realization of the importance of protecting drinking water resources. Efforts by the Board of Health and Conservation Commission continue to place a high priority on protecting groundwater and drinking water resources. The Ipswich River Watershed Association as well as Friends of the Parker River also operate on Boxford's behalf, by monitoring water quality and reducing withdrawals from stressed surface water bodies.

Over 80% of survey respondents felt it was important or very important that the town has acquired open space to protect wildlife habitat and forests, and over 70% to protect farmlands. Sixty-five percent would like to continue to acquire open space for those purposes.

Survey comments also indicated a desire to a) preserve open space along rivers and streams to protect riparian areas, b) acquire open space to link existing preserved parcels and trail networks to provide both wildlife habitat and recreational opportunities and c) protect large undeveloped parcels, such as farms or woodlots, to preserve rural character and provide land for both active and passive recreational opportunities. There was a strong interest in enhancing the town's regulations to protect its natural resources.

### B- Summary of Community Needs

The community needs and desires as expressed in the survey, public meetings, and by town boards, committees and user groups focused mainly on four areas: wetlands, preservation of the rural character of the town, safety along the roadways for bikers and walkers and more open space.

Respondents selected several factors contributing to rural character, including roadside trees, fields, meadows, ponds and streams, forested landscapes, stone walls, and civic spaces.

Safety along the roadways is important, however, the solution is unclear. While 45% expressed a desire for sidewalks throughout town, 59% supported them around schools. The benefits of a sidewalk linking Cole School and Boxford Common to the Community Store, as well as a sidewalk between Spofford School and the library were mentioned. Some respondents hoped for a sidewalk in West Boxford Village. Slightly more than half the respondents would like sidewalks in town centers and around schools, but there was very little interest in sidewalks anywhere else in the community. Slightly more than half of the respondents

would like bike lanes or bike paths. Sixty three percent were interested in completing the rail trail. Techniques for traffic calming and controlling speed were noted several times in the comments section and by town boards.

The need for additional recreation facilities was not strongly indicated in the survey. 55% of the respondents felt it was important or very important that the town *has* acquired land for active recreation (athletic fields), while support for acquiring additional land for this purpose fell to 48% . Across the board respondents said they were satisfied or very satisfied with the recreational facilities, with most support for existing facilities for toddler through elementary at 78%, 76% for seniors, 72% for adults and 69% for middle and high schoolers. The addition of the new playing fields at Boxford Commons, with its paved walking trails, and the opening of 10 Elm, which will enhance activities for seniors, may have had a bearing on the change of satisfaction regarding the need for more fields since the 2016 Open Space Plan survey.

However, in the survey 5 activities that require facilities were among the top 15 listed, including field hockey, indoor basketball, tennis, outdoor basketball and pickleball. Perhaps repurposing and maintaining the current fields and facilities needs to be addressed.

In the comments, many stated that Boxford didn't need to add new facilities, but a very high priority should be given to better maintaining existing fields and playgrounds. Several pointed out the need to improve Johnson Field, as well as the nearby playground, and a desire to give a 'facelift' to the whole center of the town. Better maintenance of the Ackerman Playground at Boy Scout Park, by collecting garbage more regularly and by managing wasp infestations, was mentioned several times.

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

The 2016 Boxford Open Space and Recreation community survey was instructive in identifying numerous management needs for the town's open space. There were many comments about drainage problems at the existing playing fields, resulting in loss of use for several weeks in the spring. Respondents also indicated the trail system and playground areas need to be better maintained. CPA funds are available for the Conservation Commission to improve some of the open space it manages through clearing new trails, moving trails away from beaver-flooded areas, and improving parking areas for conservation lands. These funds were used to pay for the construction of a major wetlands crossing in Wildcat, as well as for signage along trails and at trailheads. The CP Committee also helped fund the re-construction of the playground at Cole School. Much of the trail maintenance, including signage, has been handled by BTA/BOLT, Inc.

The elementary schools would like to continue to enjoy safe access to the adjacent woodlands and vernal pools for outdoor classrooms. The Spofford School basketball courts need improvement, and there are plans to install a full-size basketball court at Cole School when funds are available.

Managing an extensive inventory of open space is more than just maintenance. It includes building awareness, organizing events, and recruiting volunteers. The Apple Festival, Memorial Day Parade, 4th of July Road Race and Parade, Call to Honor Triathlon, BTA/BOLT, Inc. trail hikes youth sports, and winter festivals all contribute to Boxford's sense of community. Schools, the library, 10 Elm and other civic buildings bring people together. Open space and recreation play a significant role, too. Trails, ponds, athletic fields, scenic roadways, and open spaces in the villages are host to activities that connect people to each other and the outdoors. They contribute to the vibrancy of the community. Residents recognize this connection and would like to see more opportunities to forge community ties.

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## Section 8 - Goals and Objectives

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This section synthesizes and expands on the vision and general goals of Section 6 and the data analysis of Section 7 to create a comprehensive set of goals and objectives for the town. These goals were arrived at through assessing Boxford's current open space inventory, survey results, comments from municipal figures, and comments from citizens, to synthesize goals which will both seek to fill open space gaps in the community and fulfill community desires and needs for land preservation and additional recreation.

**Goal A: Preserve and protect groundwater resources, drinking water resources, ponds, streams, wetlands and wildlife habitat**

The preservation and protection of water resources is critical to the public health of the town as private wells are the sole source of potable water. This includes watershed protection, storm water management of new construction, stream and pond protection, conformance to State wastewater disposal laws and water conservation.

**Goal B: Preserve and protect the rural character of the town**

Despite the growth of the suburbs throughout eastern Massachusetts, Boxford has been able to preserve its rural character due to the following:

1. Minimum house lots size of two (2) acres.
2. Regulatory protection of streams, ponds, and wetland systems and other natural features that exist throughout the town.
3. The efforts of the State, Town, BTA/Bolt, Inc., Essex County Greenbelt Association and others to acquire land to preserve in perpetuity.
4. Acquisition of land along major road corridors.
5. Limited commercial development.

**Objective B-1**

*Preserve and acquire lands along major road corridors to preserve the scenic value and rural character of the town. Major road corridors*

Elm Street	Main Street
Georgetown Road	Middleton Road
Herrick Road	Rt 133/Washington Street/Willow Rd
Ipswich Road	Rt 97
Kelsey Road	Topsfield Road
Lawrence Road	

**Objective B-2**

*Preserve and acquire woodlands, farmland/agricultural land and wetlands.*

**Objective B-3**

*Identify parcels of land owned by the town that should be protected from development by a conservation restriction.*

**Objective B-4**

*Preserve and protect the Historic Districts and structures within the town and support the Historic Document Center.*

**Goal C: Preserve, enhance and acquire lands for active and passive recreation needs**



**Objective C-3**

*Acquire lands that connect existing open-space parcels and trails.*

**Objective C-4**

*Develop and Implement a five-year capital plan for the maintenance of playgrounds and recreation facilities.*

**Objective C-5**

*Implement the recommendations for ADA compliance for existing facilities to provide access for all as applicable. Consider feasibility of developing All Access Trails.*

**Objective C-6**

*Support the ongoing development of the Rail-to-Trail.*

**Goal D: Increase public awareness of open space and recreation resources and programs.**

Implement links on the Town's website to "Support Organizations" including BTA/BOLT, Inc., the Boxford Athletic Association and other nonprofit Boxford organizations for trails, recreation sites, and programs.

**Objective D-1**

*Establish an outreach campaign to distribute the Open Space and Recreation Plan especially the Plan Summary (Section 1) and/or Analysis of Needs (Section 7).*

**Objective D-2**

*Add a link on the home page of the Town website for "Open Space & Recreation." This link would connect to a new, standalone website that provides residents with a comprehensive guide to public resources and programs available for active and passive recreation, as well as an inventory of protected land in Boxford.*

**Objective D-3**

*Raise awareness within the schools of the trail networks and wildlife habitat and explore flora and fauna signage for areas near Cole and Spofford*

## Section 9 – Seven-Year Action Plan

This action plan builds on the “Goals and Objectives” outlined in section 8. Action items are listed by specific strategies and described with responsible parties designated with priority rating from High (immediate action desired) to Low (as funds and/or capacity is available). All recommendations are considered important. The actions listed below include the milestone steps that need to be taken to accomplish the outlined objectives.

<b>Group</b>	<b>Abbreviation</b>
Agricultural Commission	AgCom
Board Of Health	BoH
Board Of Selectmen	BoS
Boxford Athletic Association	BAA
Boxford Trails Association/Boxford Open Land Trust	BTA/BOLT
Conservation Commission	ConsCom
Department of Public Works	DPW
Finance Committee	FinCom
Historic Commission	HistCom
Land Committee	LandCom
Open Space & Recreation Plan Committee	OS&RPC
Planning Board	PlanBd
Recreation Committee	RecCom
School Committee	SchoolCom
Town Administrator	TownAdmin

<b>Funding Sources</b>	<b>Abbreviation</b>
Grants	G
Community Preservation Act	CPA
Serial Bond	SB
Private Funding Sources	PFS
Raise and Appropriate	RA

### Goal A: Preserve and protect groundwater resources, drinking water resources, ponds, streams, wetlands, forests, and wildlife habitat

**Objective A-1:** Preserve and protect groundwater and drinking water resources.

1. Identify parcels of lands for potential acquisition or other protection measures which are not protected by state/local laws which may serve as potential high-yield water supplies.

Responsible Party(s): LandCom, BoH, ConsCom, BTA/BOLT

Priority: High | Funding Sources(s): G, CPA, SB PFS, RA

**Objective A-2:** Preserve and protect ponds, streams, wetlands and wildlife habitat.

1. Identify parcels of lands for acquisition or other protection measures that are not protected by state/local laws.

**Commented [CG2]:** For all actions related to objectives, this should include a year in which this is planned/taking place if possible

Responsible Party(s): LandsCom, ConsCom, BTA/BOLT  
Priority: High | Funding Source(s): ConsCom Budget

2. Continue to monitor and access the quality of surface and ground water as required by the Federal Clean Water Act. Develop remedies for use impairments.

Responsible Party(s): ConsCom/BOH  
Priority: \_\_\_\_\_ | Funding Source(s): \_\_\_\_\_

3. Continue to identify management issues, assess the health of ponds, wetlands and streams to make informed management decisions.

Responsible Party(s): ConsCom/BOH  
Priority: \_\_\_\_\_ | Funding Source(s): \_\_\_\_\_

4. Consider regulations for construction sites to conform to the ten standards in the State Department of Environmental Protection Storm Water Management Policy.

Responsible Party(s): ConsCom  
Priority: \_\_\_\_\_ | Funding Source(s): \_\_\_\_\_

5. Develop a dam maintenance and operation plan for Stiles, Lowe, Four Mile, Lockwood and Howe Pond dams. Update the plan annually.

Responsible Party(s): ConsCom/DPW  
Priority: \_\_\_\_\_ | Funding Source(s): \_\_\_\_\_

**Goal B: Preserve and protect the rural character of the town**

Objective B-1: Preserve and acquire lands along major road corridors to preserve the scenic value and rural character of the town. Major road corridors are Topsfield Road, Elm Street, Main Street, Middleton Road, Georgetown Road, Ipswich Road, Lawrence Road, Herrick Road, Rt 133/Washington St, Rt 97

1. Maintain a map of all roadways and abutting properties.

Responsible Party(s): Assessor's Office  
Priority: High | Funding Source(s): Dep/Com Budgets

2. Identify all undeveloped parcels which abut roadways.

Responsible Party(s): Assessor's Office  
Priority: \_\_\_\_\_ | Funding Source(s): \_\_\_\_\_

3. Review undeveloped parcels for conformance with objective B-1.

Responsible Party(s): LandCom  
Priority: \_\_\_\_\_ | Funding Source(s): \_\_\_\_\_

4. Make recommendations as to which parcels should be acquired.

Responsible Party(s): LandCom/Selectmen, Consult BTA/BOLT  
Priority: \_\_\_\_\_ | Funding Source(s): \_\_\_\_\_

5. Work with Landowners to determine interest.

Responsible Party(s): LandCom  
Priority: \_\_\_\_\_ | Funding Source(s): \_\_\_\_\_

6. Purchase or otherwise protect as appropriate.

Responsible Party(s): [REDACTED]

Priority: [REDACTED] Funding Source(s): CPA, G, SP, P, RA

Objective B-2: Preserve and acquire woodlands, farmland/agricultural lands and wetlands.

1. Help to promote agricultural activities on town-owned and privately owned land and to preserve existing farms.

Responsible Party(s): \_\_\_\_\_

Priority: High | Funding Source(s): Dept/Com Budget

2. Make recommendations as to which parcels should be acquired.

Responsible Party(s): LandCom/BoS

Priority: [REDACTED] | Funding Source(s): [REDACTED]

3. Work with Landowners to determine interest.

Responsible Party(s): LandCom

Priority: [REDACTED] | Funding Source(s): [REDACTED]

4. Purchase or otherwise protect as appropriate.

Responsible Party(s): LandCom

Priority: [REDACTED] | Funding Source(s): CPA, G, SB, P, RA

Objective B-3: Identify parcels of land owned by the town that should be protected from development by a conservation restriction.

1. Maintain a list of town owned parcels.

Responsible Party(s): Assessor, ConsCom/AgCom/LandCom/BoS

Priority: High | Funding Source(s): N/A

2. Review Parcels for conformance with Objective B-3.

Responsible Party(s): ConsCom/AgCom/LandCom/BoS

Priority: [REDACTED] | Funding Source(s): [REDACTED]

3. Make recommendations as to which parcels should be protected.

Responsible Party(s): LandCom/BoS

Priority: [REDACTED] | Funding Source(s): [REDACTED]

4. When appropriate, hire an attorney or work with Land Trust to place conservation restrictions on identified parcels.

Responsible Party(s): BoS

Priority: [REDACTED] | Funding Source(s): G, C, P

Objective B-4: Preserve and protect the Historic Districts and structures within the town and support the Historic Document Center.

1. Review historic districts and boundaries and inventory of historic structures and prepare/maintain comprehensive list.

Responsible Party(s): HistCom

Priority: \_\_\_\_\_ | Funding Source(s): \_\_\_\_\_

2. Contact and work with land/homeowner who may have historic properties which should be protected and/or preserved.

Responsible Party(s): HistCom

Priority: \_\_\_\_\_ | Funding Source(s): \_\_\_\_\_

**Goal C: Preserve, enhance and acquire lands for active and passive recreation needs.**

Objective C-2: Develop a comprehensive analysis of all playing fields to determine conditions and improvements that impact the use and playability of the fields and maintenance needs. Maintain list of all fields. (BAA, RecCom)

1. Assess current field conditions.

Responsible Party(s): RecCom/DPW/BAA/Tribal/MYF

Priority: \_\_\_\_\_ | Funding Source(s): \_\_\_\_\_

2. Create Field Maintenance Plan.

Responsible Party(s): RecCom/DPW

Priority: \_\_\_\_\_ | Funding Source(s): DPW Budget

3. Implement and Fund Field Maintenance Plan.

Responsible Party(s): DPW

Priority: \_\_\_\_\_ | Funding Source(s): DPW Budget/Capital Budget

Objective C-3: Acquire lands that connect existing open-space parcels and trails.

1. Utilize OSRP mapping to identify lands that meet objective C-3 and C-4.

Responsible Party(s): \_\_\_\_\_

Priority: \_\_\_\_\_ | Funding Source(s): \_\_\_\_\_

2. Develop and maintain list of lands of interest.

Responsible Party(s): BTA/BOLT

Priority: \_\_\_\_\_ | Funding Source(s): \_\_\_\_\_

3. Contact landowners to gauge interest in selling/donating land or easement through property and follow through as needed.

Responsible Party(s): BTA/BOLT/LandCom, SchoolCom

Priority: \_\_\_\_\_ | Funding Source(s): CPA, G, SB, P, RA

Objective C4: Develop and implement a five-year capital plan for parks and recreation facilities.

1. Annually assess all ballfields and playgrounds to determine immediate and long-term needs. Prioritize into a five-year capital plan.  
Responsible Party(s): RecCom, BAA, SchoolCom, FinCom  
Priority: [REDACTED] | Funding Source(s): N/A
2. Identify funding sources for needed improvements and make improvements as funding is received.  
Responsible Party(s): RecCom, BAA, School Com, FinCom  
Priority: [REDACTED] | Funding Source(s): CPA, G, P
3. Update the five-year plan annually to reflect on-going improvements and assessments.  
Responsible Party(s): RecCom, BAA, School Com, FinCom  
Priority: [REDACTED] | Funding Source(s): N/A

Objective C-5: Implement the recommendations for ADA compliance for existing facilities to provide access for all as applicable.

1. Review recommendations for ADA compliance, identify funding sources and prioritize list for implementation.  
Responsible Party(s): BoS/DPW/ADA Coordinator  
Priority: High | Funding Source(s): N/A
2. Expand accessibility to Stiles Pond beach and facilities, including ADA compliant bathrooms  
Responsible Party(s): [REDACTED]  
Priority: [REDACTED] | Funding Source(s): [REDACTED]

Objective C-6: Continue to support the development of the Rail-to-Trail. ~~No actions?~~

**Goal D: Assess the viability of sidewalks and bike paths near schools and in Villages.**

Objective D-1: Study the feasibility of constructing sidewalks/ bike paths in the Villages and near the schools.

1. Appoint a Sidewalk Feasibility Group.  
Responsible Party(s): BoS  
Priority: [REDACTED] | Funding Source(s): N/A
2. Investigate state standards for sidewalks/bike paths. (SFG)  
Responsible Party(s): SFG  
Priority: [REDACTED] | Funding Source(s): [REDACTED]
3. Determine the impact that construction of sidewalks/bike paths may have on wetlands, trees and other existing conditions and offer ideas for mitigation.  
Responsible Party(s): SFG  
Priority: [REDACTED] | Funding Source(s): [REDACTED]
4. Present the feasibility study to the Board of Selectman for their determination on how to proceed to develop a consensus.  
Responsible Party(s): SFG  
Priority: [REDACTED] | Funding Source(s): [REDACTED]

**Goal D:** Increase public awareness of open space and recreation resources and programs.

Objective D-1: Establish an outreach campaign to distribute the Open Space and Recreation Plan, especially the Plan Summary (Section 1) and/or Analysis of Needs (Section 7).

1. Identify volunteers to develop strategies for distributing Plan and sharing information.

**Responsible Party(s):** PlanBd, RecCom  
**Priority:** High | **Funding Source(s):** N/A

2. Support outreach campaign with the development of material as needed.

**Responsible Party(s):** PlanBd, RecCom  
**Priority:** \_\_\_\_ | **Funding Source(s):** ConsCom Budget

Objective D-2: Add a link on the Town website for "Open Space & Recreation." This link would connect to a new, stand-alone website that provides residents with a comprehensive guide to public resources and programs available for active and passive recreation, as well as an inventory of protected land in Boxford.

1. Identify a volunteer to be responsible for the development of the website.

**Responsible Party(s):** \_\_\_\_\_  
**Priority:** \_\_\_\_ | **Funding Source(s):** N/A

2. Consider using a student or intern for website development.

**Responsible Party(s):** \_\_\_\_\_  
**Priority:** \_\_\_\_ | **Funding Source(s):** G, P

3. Determine a process and schedule for updating the site as needed.

**Responsible Party(s):** \_\_\_\_\_  
**Priority:** \_\_\_\_ | **Funding Source(s):** N/A

## **1. Strategies for Implementation**

This section describes some of the techniques available to Boxford to acquire and protect its important waterways, farmlands and other natural resources. These techniques should be integrated into the following general strategies for implementing this Open Space and Recreation Plan:

1. Enhance cooperation between Town boards and departments having jurisdiction in matters relating to permits, water, solid waste, energy, transportation and other land use issues.
2. Coordinate efforts with neighboring communities to protect and preserve resource areas that share common boundaries; active involvement with the Merrimack Valley Planning Commission should assist in this effort.
3. Encourage landowners and potential developers of environmentally sensitive lands to adopt sound conservation practices in order to protect water resources.
4. Enlist the skill and knowledge of local volunteers and the resources of the Merrimack Valley Planning Commission to enhance the open space planning efforts of local land use and development boards.

**A description of available resources to implement these general strategies include the following:**

Grant Programs Administered by the Division of Conservation Services, Executive Office of Energy and Environmental Affairs

Grant programs include the Self-Help program which offers towns up to 70% reimbursement for the cost of land purchased or developed for conservation or for passive outdoor recreation. Other grant programs include the Federal Land and Water Conservation Fund program.

National Register of Historic Places (National Historic Preservation Act of 1966, 80 Stat.915, U.S.C. 470)

Under this program, the National Park Service can make funds available for the acquisition and development of significant historical, archeological, architectural and cultural sites.

Gift of Land in Trust

This is a charitable gift in trust and is a well-recognized device in Massachusetts for preserving land in its natural state. Land gifted to a private land trust is insured against being diverted for other municipal purposes.

Conservation Restrictions (Conservation Restriction Act, Ch.184, Sec.31-33)

Simply stated, a conservation restriction/easement is a written agreement between a property owner and a governmental or private agency by which the owner agrees to restrict development of his land in certain ways. For example, a restriction can take the form of prohibiting construction of a building detrimental to preservation of an historical site. Conservation restrictions vary widely. They may be purchased or granted through a gift. They can range from outright purchase of development rights - under which arrangement the land is still privately owned - to simple easements across the land for public right-of-way. The owner of land subject to an easement has all the rights and benefits of ownership consistent within the terms of the easement. The easement does not transfer title of the land, nor dispossess the owner; it is, however, binding on all future grantees of the land. A conservation restriction often qualifies a property owner to receive certain tax advantages (MGL Ch. 719, Acts of 1972) while still permitting use of the land for such purposes as recreation, farming, and other activities consistent with the terms of the restriction. For a community a restriction is financially beneficial too. When purchasing land for conservation, passive recreation or scenic enjoyment, property can often be acquired at considerably less than full-title purchase, and sometimes at no cost at all if the land is donated by the owner. Conservation restrictions are perpetual and run with the land.

Agricultural Preservation Restriction (Ch.132A, Sec.11a-d)

This is a type of conservation restriction in which a landowner signs a covenant promising the Commonwealth or a private agency; that the land will not be developed for non-agricultural purposes. The restriction holder will pay the landowner a sum not exceeding the difference between the value of the land before it was restricted and its value for farming purposes after restriction. Agricultural restrictions are perpetual and run with the land.

Community Preservation Act (CPA)

The Commonwealth enacted enabling legislation that allows towns and cities to establish their own prescribed real estate surcharge tax of up to 3% of individual property valuations for the purposes of: acquiring, creating and preserving open space; acquiring and preserving historic resources; acquisition creation and preservation of land for recreational use; creation, preservation and support of community housing; and for the rehabilitation or restoration of open space, land for recreational use and community



housing that is acquired or created by CPA funds. Boxford adopted the surcharge in 2001 and established the Community Preservation Committee to administer the CPA funds in Boxford.

#### Historic Districts (MGL Ch 40C)

Boxford has two Historic Districts, the Howe Village and Boxford Village Historic Districts. Development within these Districts must be reviewed by the Boxford Historic District Commission to ensure that they will not detract from the historic character of the District.

#### Eminent Domain

This is usually a means of last resort. Taking land under eminent domain requires a two-thirds vote of Town Meeting. There must be reasonable compensation to the landowner accompanying the taking. Put this last

## **2. Wetland Regulations**

#### Wetlands Protection Act (G.L.Ch.131, c40)

This Act controls, but does not ban, development on wetlands. Wetlands as defined here are marshes, meadows, swamps bordering on rivers, streams, and ponds - just about any land which is periodically wet. The Act also covers coastal wetlands. The law requires that any person or governmental agency intending to remove, fill, dredge, or alter a wetland must ensure that the activity will have no adverse effect on water supplies, flood safety, pollution prevention, or fisheries protection. In effect, the owner must develop his wetlands in accord with the public's interest and safety.

#### Rivers Protection Act

This act was enacted by the Legislature in 1996 as an amendment to the Wetlands Protection Act to protect twenty-seven particular rivers in the Commonwealth including their tributaries as well as all perennial and intermittent streams. The 200 foot setback distance on either side of a perennial river's edge is the Riverfront Area in which development is prevented unless there are no other alternatives.

#### Boxford Wetlands Protection Bylaw and Regulations

Boxford first adopted a local Wetlands Protection Bylaw in 1986. The Bylaw went further than the Commonwealth's Wetlands Protection Act by establishing the 100 foot buffer zone around wetlands- a zone of jurisdiction without any real restrictions on use- as a legally protected "Resource Area". In 1994, Boxford adopted regulations governing the Wetlands Protection Bylaw. Both the Bylaw and Regulations have been amended numerous times, and today they are among the strongest in the Commonwealth. Among other protections, there is a 25 foot "no disturb" zone around wetlands, as well as a 75 foot "no-build" zone. Vernal Pools, landscape features that support rare amphibian wildlife, receive even more protection. Boxford's Wetlands Protection Bylaw and Regulations translate into significantly greater protection of undeveloped natural areas, including wetlands, streams, the forests around them, and other natural areas, than in towns without a local wetlands bylaw or regulations.

#### Stormwater Management Regulations

Boxford adopted a Stormwater Management Bylaw in 2006 that conforms to the requirements of the National Pollutant Discharge Elimination System Permit program administered by the U.S. EPA. In Boxford, development related disturbance greater than one acre in extent and located within the "Urbanized Area" as mapped by the U.S. Census Bureau is subject to review and permitting under the Bylaw.

#### Inland Wetlands Restriction Act (MGL Ch. 131, c40A)

This legislation is designed to supplement the regulative approach of the Wetlands Protection Act with a planning approach not dependent upon the landowner's applying for a permit. The Commissioner of wildlife, fisheries, water resources, and floodplain areas and agriculture, is directed to issue orders restricting development of inland wetlands.

Scenic Rivers Act (MGL Ch. 21A, §11C)

This Act empowers the Department of Environmental Management to restrict or prohibit dredging, filling or otherwise altering or polluting scenic and recreational rivers. These have been defined to include all rivers and streams in the Commonwealth plus contiguous land up to 100 yards on each side of the river or stream banks.

**3. Tax Incentives**

Classification and Taxation of Forest Lands and Agricultural/Horticultural Lands (MGL Ch. 61 and 61A, respectively)

This law encourages the preservation of forests, farmland and open space in Massachusetts. It affords local tax abatements to landowners willing to commit to long term forestry, farming or open space. Should use of land at sale change from agricultural/forestry/open space, towns have 120 days of right of first refusal to a bona fide purchase and sale agreement. In addition, the seller is responsible for payment of taxes abated for the previous five years.

**4. Land Trusts**

Non-profit land trusts use funding sources such as state and federal grants, foundations, CPA funding and private donations to acquire conservation land in fee or by easement. Trusts can acquire land that overlaps town boundaries, an effective technique for protecting a watershed. BTA/BOLT, Essex County Greenbelt Association, and The Trustees of Reservations are examples of such trusts in Essex County.

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## Section 10 - Public Comments -UPDATE

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The draft Open Space and Recreation Plan was placed on the Town of Boxford web site and all Town boards and committees were notified of its availability and encouraged to submit responses to be included in the final OSRP report.

Comment letters from responding boards, committees and organizations follow.



*Figure 7. Anvil Farm in Spring.*

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## Section 11 – References

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## Section 12 - Appendixes

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## Section 13 - Index

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