

Open Space and Recreation Plan Town of Rowley



2014 Update

PREPARED BY:

TOWN OF ROWLEY OPEN SPACE COMMITTEE

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
<u>1.0 PLAN SUMMARY</u>	<u>4</u>
<u>2.0 INTRODUCTION</u>	<u>6</u>
2.1 STATEMENT OF PURPOSE	7
2.2 PLANNING PROCESS AND PUBLIC PARTICIPATION	8
2.3 ACCOMPLISHMENTS SINCE 2003 PLAN	9
<u>3.0 COMMUNITY SETTING</u>	<u>12</u>
3.1 REGIONAL CONTEXT	13
FIGURE 3.1 TOWN OF ROWLEY REGIONAL CONTEXT	14
3.2 HISTORICAL CONTEXT	16
FIGURE 3.2 LAYOUT OF TOWN MD-1800s	18
3.3 DEMOGRAPHICS AND POPULATION CHARACTERISTICS	20
3.4 GROWTH AND DEVELOPMENT PATTERNS	22
FIGURE 3.3 LAND USE MAP	23
FIGURE 3.4 DEVELOPMENT TRENDS	25
FIGURE 3.5 ZONING MAP	33
<u>4.0 ENVIRONMENTAL INVENTORY AND ANALYSIS</u>	<u>37</u>
4.1 GEOLOGY, SOILS, AND TOPOGRAPHY	38
FIGURE 4.1 SOILS MAP	39
4.2 LANDSCAPE CHARACTER	42
4.3 WATER RESOURCES	43
FIGURE 4.2 WATER RESOURCES MAP	44
4.4 VEGETATION	47
4.5 FISHERIES AND WILDLIFE	48
4.6 SCENIC RESOURCES AND UNIQUE ENVIRONMENTS	56
FIGURE 4.3 SCENIC RESOURCES AND UNIQUE ENVIRONMENTS MAP	57
4.7 RECREATIONAL FACILITIES	62
4.8 ENVIRONMENTAL CHALLENGES	63
<u>5.0 INVENTORY OF LANDS OF CONSERVATION AND RECREATIONAL INTEREST</u>	<u>67</u>
FIGURE 5.1 LANDS OF CONSERVATION AND RECREATIONAL INTEREST	70

5.1	PROTECTED PARCELS	72
5.2	OTHER MUNICIPAL LANDS	76
5.3	UNPROTECTED PARCELS	78
5.4	ENVIRONMENTAL EQUITY	80
<u>6.0 COMMUNITY GOALS</u>		<u>81</u>
6.1	DESCRIPTION OF THE PROCESS	82
6.2	STATEMENT OF OPEN SPACE AND RECREATIONAL GOALS	82
<u>7.0 ANALYSIS OF NEEDS</u>		<u>84</u>
7.1	RESOURCE PROTECTION NEEDS	85
7.2	COMMUNITY NEEDS	86
7.3	MANAGEMENT NEEDS	88
<u>8.0 GOALS AND OBJECTIVES</u>		<u>91</u>
<u>9.0 ACTION STEPS</u>		<u>93</u>
	FIGURE 9.1 OPEN SPACE AND ACTION PLAN MAP	95
	TABLE 9.1 ACTION PLAN	99
<u>10.0 PUBLIC COMMENT</u>		<u>109</u>
<u>11.0 REFERENCES</u>		<u>111</u>
<u>APPENDIX A: LANDS OF CONSERVATION INTEREST – DETAILED LISTING</u>		
<u>APPENDIX B: PUBLIC SURVEY AND RESULTS</u>		
<u>APPENDIX C: HANDICAPPED ACCESS TO MUNICIPALLY-OWNED OPEN SPACE AND RECREATION FACILITIES 2003</u>		
<u>APPENDIX D: BUILD-OUT ANALYSIS FROM 2005 PLAN</u>		

1.0 Plan Summary



Rowley Town Center as seen from Muzzy Hill in 1902

1.0 PLAN SUMMARY

The Town of Rowley Open Space and Recreation Plan of 2014 (OSRP) contains both a review of accomplishments since the last Open Space and Recreation Plan, which covered 2003 to 2008, and a plan for the future. The OSRP was researched and written with participation by the community. It provides an inventory of Rowley's natural resources, recreation facilities, and unique character; identifies environmental problems and open space and recreation needs; and provides an implementation plan for further protecting the Town's natural environment, and providing recreational opportunities for all.

The Open Space and Recreation Plan of 2014 is based on the same five broad goals identified in the Open Space and Recreation Plan 2003-2008. The goals, which are listed below, were reaffirmed by Rowley citizens in a public survey that was part of the 2014 OSRP planning process.

OSRP GOALS

1. Preserve and protect the Town's water resources.
2. Preserve and protect the Town's natural resources and rural character.
3. Provide diverse recreational opportunities for residents of all ages and abilities.
4. Educate residents about the availability, use, and protection of the Town's open space and recreation resources.

The achievement of these goals will require commitment by a large number of entities, including Town boards and commissions, schools, non-profit organizations, and volunteers. Cooperation and coordination among these entities is essential to the successful implementation of the Plan, which will be an ongoing and evolving process with continued public input under the leadership of the Open Space Committee and other Town boards.

Major objectives of the 2014 OSRP include:

1. Strictly enforce existing water resource protection regulations
2. Monitor and protect well fields.
3. Maintain an active Open Space Committee.
4. Maintain and implement the Open Space Plan.
5. Review and update Master Plan as needed.
6. Educate public about designated scenic byways.
7. Identify, acquire, and permanently protect key undeveloped parcels.
8. Encourage agricultural uses.
9. Hold events on Town-owned open space parcels.
10. Develop new and improve existing recreation facilities, including parks and playgrounds.
11. Improve access for people with disabilities.
12. Develop a program to disseminate information concerning the available Town resources on the Town website.

2.0 Introduction



Eagle House Hotel, Main Street, Rowley, 1920

2.0 INTRODUCTION

2.1 STATEMENT OF PURPOSE

The Town of Rowley possesses a wide diversity of open spaces including beaches, salt marsh, river corridors, farms, and forests. Land use and development patterns are steeped in history.

The rich natural resources of the Town provide citizens with clean water, protection from flooding, aesthetic and recreational enjoyment, and, for some, a livelihood generated by hunting, fishing, trapping, shell fishing and clamming. In general, residents enjoy a high quality living and working environment, and the rural character of the community continues to inspire all.



However, development increasingly threatens the Town's character and natural resources. Between 2000 and 2010, the Town's population increased by almost 31.5%, growing from 4,452 to 5,856 residents. The Census reports that the population in 2014 was 6,202, an additional increase of 6.1% since 2010. Between 2000 and 2010, more than 300 acres of farmland and forestland were lost to single-family homes, and an additional 29 acres were converted to industrial and commercial uses. Since 2008, development has slowed due to the nationwide economic downturn, which has provided a window of opportunity for the Town of Rowley to plan for and manage both future growth and conservation.

Following the recommendations of the 2003-2008 Open Space and Recreation Plan, the Town has actively pursued and acquired a number of open space parcels, using a variety of methods. The Town Planning Board has issued four special permits for Open Space Residential Development (OSRD) projects, "cluster" developments that by law must include permanently protected open space. The Community Preservation Committee and Town Meeting have approved Community Preservation Act (CPA) funds to purchase land for conservation, affordable housing, historic preservation, and recreational purposes. These include one of the largest remaining parcels in Town – the 119 acre Bradstreet. In addition, the Town and the Conservation Commission have accepted gifts of land to be held and managed for open space purposes.

This revised and updated Open Space Plan is essential to ensure that future growth does not negatively impact the Town's natural and historic environment. The plan provides a comprehensive inventory of the Town's open space and natural resources, both protected and unprotected, and includes a series of recommended actions to help the Town preserve these resources for future generations. The Plan is an essential tool for guiding the planning process in Rowley, and for evaluating development proposals and prioritizing conservation efforts. As an added benefit, an approved Plan makes the Town eligible for State-funded conservation programs.

An anonymous person, speaking about Rowley long ago, said,

“It is one of the pleasantest towns in Essex County. There is everything about it substantial, prosperous and agreeable. --- Let the world go. To be born in such a place --- and to die in such a place --- is enough to fill the cup of mortal happiness full.”

It is the intent of the Open Space and Recreation Plan of 2014 to ensure that these words will continue to be true well into the future.

2.2 PLANNING PROCESS AND PUBLIC PARTICIPATION

Soon after submitting the Town’s 1998 Open Space and Recreation Plan to the Division of Conservation Services for approval, the Board of Selectmen authorized the Conservation Commission to appoint an Open Space Committee. The Committee’s purpose was to preserve open space and develop low-impact recreational opportunities throughout the Town.

In January of 2001, the Town formed a Master Plan Committee to develop a Comprehensive Master Plan for the Town of Rowley (the last having been prepared in the 1960s). The Master Planning process included a public survey. The survey received a 20% response rate and confirmed the Town’s commitment to land protection. The Master Plan Committee also held three public forums to collect public input about goals and objectives for the future of the Town. At each meeting, land conservation and water supply protection topped the list of concerns and goals.

In the fall of 2009, the Board of Selectmen appointed a new Open Space Committee tasked with updating the 2003-2008 Open Space and Recreation Plan, in order to re-energize land protection efforts. The new Committee rapidly commenced work to revise the 2003 Open Space and Recreation Plan. Committee meetings, open to the public, were posted in Town Hall. Initial tasks included collecting information about existing conditions of various open spaces, and analyzing the result of a recently-completed open space survey. A public meeting was held to discuss the planning process and develop overall goals for the Open Space and Recreation Plan, during which participants discussed critical needs as well as general interests related to land preservation for open space and recreation. The meeting included a review of the five goals from the 2003 Plan, which participants unanimously agreed should be retained (These goals, which were condensed into four goals to avoid duplicate action steps in the implementation strategy, are further described in Sections 6 and 8).

In the fall of 2010, draft Plan recommendations were presented to both the Planning Board and the Conservation Commission. After a hiatus, the Draft Open Space Plan was completed in January 2014, and copies were placed at Town Hall and the Public Library for the public to review. Copies were also distributed to the Rowley Planning Board, the Conservation Commission, the Board of Selectmen, Mass Audubon, and the Merrimack Valley Planning Commission. The updated plan was presented at an open public meeting. Notification of the meeting appeared in the Town Common newspaper. The Town of Rowley does not have any environmental justice neighborhoods, so did not do outreach specific to such a neighborhood.

2.3 ACCOMPLISHMENTS SINCE 2003 PLAN

The 2003 Rowley Open Space and Recreation Plan identified a number of goals and objectives related to open space and recreation. The following summarizes the accomplishments the Town has made toward achieving those goals and objectives:

- 2.2.1 In 2003, the Town passed a local Wetlands Protection Bylaw that provides more stringent protection than the State's Wetlands Protection Act.
- 2.2.2 In 2003, the Town adopted a Coastal Conservation District zoning for properties adjacent to and including the salt marsh. This zoning limits the number of housing units that can be built in this sensitive ecosystem.
- 2.2.3 In 2003, the Town of Rowley allowed the Parker River Watershed Association to create a demonstration native plants garden at the Town Landing.
- 2.2.4 In July 2003, the Planning Board implemented a provision requiring public access as part of Open Space Residential Development approvals. Since that time, the following OSRD developments have been permitted:

Subdivision Name	Number of Acres
Fox Meadows	28.4
Wild Pastures	32.2
Pingree Farms	14.5
Carriage Pines	12.5

The Fox Meadows development includes a hiking trail that connects Wethersfield Street to Central Street, and public access is part of the Conservation Restriction on the property. The Wild Pastures OSRD includes a hiking trail around the perimeter of the property and includes a provision for public parking. The Pingree Farm OSRD requires public access through the project to the Georgetown/Rowley State Forest located behind the property.

- 2.2.5 In 2004 the Town adopted a Right-to-Farm Bylaw.
- 2.2.6 At the May 2005 Town Meeting, citizens voted to use \$200,000 of Community Preservation Act funds to renovate and expand facilities at Eiras Park, the Town's major recreation facility, and to construct a softball field at the elementary school.
- 2.2.7 In 2005, the Town created an Agricultural Commission.
- 2.2.8 In 2005, the Town of Rowley participated in the Essex County Landscape Inventory as a part of the Massachusetts Heritage Landscape Inventory through the Division of Conservation Services.

- 2.2.9 In 2006, the Planning Board negotiated the protection of 20 acres of land through rezoning with the Schilling Toy Company. The land was transferred to the Town under the custody and care of the Conservation Commission.
- 2.2.10 In 2006, Rowley established a Farmer's Market that operates on the Town Common during the summer months.
- 2.2.11 In 2007, the Town adopted a new Stormwater Management Bylaw administered by the Conservation Commission.
- 2.2.12 At the 2007 Annual Town Meeting, the citizens of Rowley voted unanimously to purchase the Bradstreet Farm, a 123-acre King's Grant property that had been in the Bradstreet family ownership since 1642. The property was purchased with Community Preservation Act Funds and it now accommodates recreation, affordable housing, historic preservation, and natural resource conservation, all of which are allowed under the Community Preservation Act. The historic farmhouse and barn are protected by an Historic Preservation Restriction and in the ownership of a private party. In an effort to encourage agriculture on the site and to allow the property to qualify for the 61A agricultural property tax program, the house was sold with seven acres of land. A separate two-acre parcel of land was set aside to accommodate up to six affordable housing units. An additional nine acres adjacent to the Pine Grove School were set aside for future recreation fields.¹ And the remaining 105 acres were designated as conservation land to be managed by the Conservation Commission under Article 97 of the State Constitution. A portion (less than an acre) of the conservation land has been designated for use as a community garden to further encourage agricultural uses on this historic farm. The property is adjacent to land that was previously acquired with a Self-Help Grant in the 1970s for conservation purposes.
- 2.2.13 Rowley strongly supported a Scenic Byway designation for coastal Route 1A from Gloucester to Newburyport. At a public forum in Rowley in October 2010, the Scenic Byway Plan was presented and the Byway Corridor Management Plan was discussed as a tool for resource protection and economic development. The byway, which includes a stretch in Rowley, has now been established as a Heritage Scenic Byway.
- 2.2.14 In 2009, the Essex County Greenbelt Association purchased the McGoff property off Hillside Street and Weldon Farm Road at a foreclosure, and the land is now protected open space.
- 2.2.15 In 2011, the Town of Rowley voted to appropriate Community

¹ During initial site planning for the recreation fields, soil testing determined that the land would not drain sufficiently to accommodate playing fields, eliminating this potential use.

Preservation Act funds for the Rough Meadows Sanctuary Project. The 75-acre property is now held by Mass Audubon and the Town of Rowley, Essex County Greenbelt Association and the Massachusetts Department of Conservation and Recreation jointly own a CR on the majority of the land.

- 2.2.16 In 2011, the Town and the Conservation Commission accepted seven acres bordering the Mill River off Hillside Street from the Cadoret Nominee Trust, to be held as protected open space.
- 2.2.17 In 2012, the Bank of New England gifted approximately five acres of land on Wethersfield Street bordering the Mill River to the Town and the Conservation Commission for open space.
- 2.2.18 In 2013, the Town and the Conservation Commission were given approximately two acres of property at 710 Haverhill Street by Ashley Realty Trust for open space.

The Town is committed to continuing to work on additional open space and natural resource protection projects, and to providing active recreation opportunities for residents. This seven-year plan provides a blueprint for the Town's ongoing efforts.

3.0 Community Setting



View of the Captain Johnson House From Prospect Hill, 1900

3.0 COMMUNITY SETTING

The Community Setting section provides the background information that is needed to understand Rowley’s open space and recreational needs. This section includes information about the Town’s regional context, historical background, demographics and population characteristics, and growth and development patterns.

3.1 REGIONAL CONTEXT

Rowley is located 32 miles north of Boston on Massachusetts’ “North Shore.” Rowley consists of 19 square miles, and is bordered by Ipswich, Boxford, Georgetown and Newbury (see Figure 3.1). The Mill River and the Mud Creek form much of the Town’s northern border. The eastern section of the Town is bordered by the Atlantic Ocean and includes sections of the Parker River National Wildlife Refuge and a section of Plum Island. The Rowley River forms the Town’s southeastern border.

Historically, agriculture was the predominant land use in Rowley. Today, approximately five working farms remain, including the 150-acre Herrick Dairy Farm, which also leases additional land for crops, hay, and ancillary activities, and the 165-acre Pikul Farm (now operated by Tendercrop Farm.) There are several tree farms and horse farms in Town, as well as a nursery.

Rowley has emerged as a bedroom community for residents who work in Boston and the inner suburbs. Available developable land, and excellent highway and commuter rail access to Boston, have attracted substantial residential development over the past two decades. Housing prices have risen rapidly and important open space has disappeared.

Rowley shares several important natural and recreational resources with neighboring towns, including watersheds, marshes, wildlife refuges, state forests, and a national heritage area. The Town is part of both the Parker River and Ipswich River watersheds. Runoff from development and other activity in Rowley, and in other watershed towns, negatively impacts the water quality of these rivers, their tributaries, and the coastal salt marshes beyond. The Open Space and Recreation Plan addresses water quality issues and provides strategies for maintaining the integrity of the Town’s watersheds.

The Rowley salt marshes are part of the Great Marsh, which is the largest continuous salt marsh in New England, stretching from Cape Ann to New Hampshire. The Great Marsh is an important environmental, economic, historic, and recreational resource for Rowley, the North Shore, and the Commonwealth of Massachusetts. In an effort to protect this valuable natural resource, state, regional, local, and non-profit organizations have formed the Great Marsh Coalition, an organization with a mission to preserve the marsh and educate the public about its importance.

Rowley is one of the nine towns within the Great Marsh that have frontage on Ipswich Bay. These nine communities also share concerns about the health and protection of the Bay and have jointly formed the Eight Towns and the Great Marsh Coalition, which works to address issues affecting the Bay, by bringing them to the attention of state and federal agencies. The

Figure 3.1 – Town of Rowley Regional Context

protection and health of both the Bay and the Great Marsh are of central importance to open space protection initiatives in the Town.

The Parker River National Wildlife Refuge, which is located in Rowley, Newbury and Ipswich, is a natural resource not just of regional significance, but also of national importance. Nature enthusiasts from around the country, particularly bird watchers, visit the Refuge. It is on the flyway for several migratory waterfowl and is an important nesting area for numerous species, including the endangered Piping Plover.

The Georgetown-Rowley State Forest offers hiking, cross-country skiing, mountain biking, horseback riding and wildlife observation opportunities to residents of Rowley and the rest of the Commonwealth and beyond. The Town has acquired more than 75 acres of land adjacent to the State Forest, thereby extending the low impact recreational opportunities available.

Trails through the Prospect Hill State Forest are part of the Bay Circuit Alliance's efforts to link Rowley with 50 other Massachusetts communities from Newburyport to Duxbury via an interconnecting 200-mile trail system. The Massachusetts Audubon Society has accessible natural areas along the salt marsh, and the Essex County Greenbelt Association owns publicly-accessible natural areas in the salt marsh located at the end of Stackyard Road and in other locations in Town.

The Essex National Heritage Area (ENHA), which was established by Congress in 1996, covers a 500 square mile region that includes all of Essex County. The ENHA has a 400-year history that was heavily influenced by the landscape, natural features, and environmental resources. As one of 49 National Heritage Areas in the country, the Essex National Heritage Area provides important regional recognition that is valuable from economic and cultural perspectives. Further, the ENHA is a valuable resource for Rowley, particularly with regards to future open space and recreational initiatives.

Together with the Towns of Newbury and Salisbury, Rowley is part of the Triton Regional School District. The three towns recently approved a multi-million dollar expansion to the school and its athletic facilities, which is expected to provide active recreational opportunities for students as well as the general public.

3.2 HISTORICAL CONTEXT

The Town of Rowley is one of the oldest towns in Massachusetts. It was first mentioned in the Massachusetts Bay Colony records on March 13, 1638-9, at which time it was known as "Mr. Ezechi : Rogers Plantation." The Town was incorporated in 1639 as the fifth town in Essex County, the sixteenth in the Bay Colony, and Town borders were fluid during the following 145 years. The middle fifth of Plum Island was added to the Town in 1649, after which Rowley was bounded northerly by Newbury, easterly by the Atlantic Ocean, southerly by Ipswich and Salem, and westerly by Andover and the Merrimack River. In subsequent years, several towns that had been part of Rowley were set off from the original King's grants, including Bradford (now part of Haverhill), Boxford, parts of Middleton, Georgetown, and Groveland. In 1785, the Bradstreet and

Cross farms, originally part of the Egypt River Grants in Ipswich, were annexed to Rowley. Figure 3.2 shows the layout of the Town in the mid-1800s by which time the borders had been stabilized.

The Town of Rowley received its name from a parish in the East Riding of Yorkshire in England named Rowley. The early settlers were primarily Puritans from Yorkshire, England, led to Rowley by dissenting clergyman Ezekiel Rogers. Mr. Rogers commenced the settlement in April 1639 with sixty families, and the Town was incorporated on the 4th of September of that year. Mr. Rogers was installed pastor on the 3rd of December 1639.

“The town developed into a small, self-sufficient community and remained so for many years. The town was initially agricultural. The soil was well-adapted to the growth of fruit trees as well as vegetable and nursery crops. Because its early settlers were weavers and clothiers, [the Town] has the distinction of having the first fulling mill in the new world.”²

One of the first stone arch bridges built in America still stands near the fulling mill. Over time, the Town developed a manufacturing base producing products such as shoes, boots, heels, flour, lumber, wagons and wheels. And, even though the Town lacks a harbor, shipbuilding was also a thriving industry in Rowley. The largest ship was the Country’s Wonder, built on Rowley Common in 1814. The ship weighed close to 100 tons and 150 yoke of oxen were required to move it the 1 ½ miles to the river.

Today, the Town still has one large working dairy farm. Clams and salt marsh hay continue to be cash crops. The land is 80 percent forested, which is an interesting comparison to the early 1900s, when Rowley was 80% open and one could stand on Main Street and view Governor Dummer Academy (now the Governor’s Academy) two miles away.

Until the middle of the 20th century, Rowley remained a predominantly self-sufficient rural community. However, since that time, the Interstate highway system has been built and commuter rail service has been developed. Both provide direct access to Boston and the inner suburbs, and together they have transformed Rowley into a bedroom community serving metropolitan Boston.

The Town’s long and rich history means that much of the land in the community has historic importance. In fact, each of the parcels protected as open space by the Town since the adoption of the 1998 Open Space and Recreation Plan have been historically important. The most prominent, the 119-acre Bradstreet Farm, was one of the three remaining King’s Grant properties in Rowley. In 2000, the Town and Mass Audubon purchased a conservation restriction on the 22- acre Minister’s Wood Lot, the original wood lot used by Ezekiel Rogers, the founder of Rowley. Hunsley Hills served as common pastures for livestock grazing during Rowley’s earliest

² Thomas Associates, Community Planners, *A Town Plan: Rowley, 1963.*

3.2 Layout of Town of Rowley in mid-1800s

years. The two Pingree Farm parcels incorporate the site of the historic Morgan farm, which operated in Rowley for several generations. Pingree Farm Road, which forms the border of one of these properties, is the original public way between Georgetown and Rowley, and the Herrick dairy farm is one of the last operating dairy farms in the region. No doubt, the history of the Town will continue to play an important role in land protection initiatives in Rowley.

3.3 DEMOGRAPHICS AND POPULATION CHARACTERISTICS

Table 3.1 shows population trends for Rowley for each decade from 1930 through 2014. The data confirm that Rowley has experienced rapid growth during the past several decades. U.S. Census data shows that between 1990 and 2010, the population grew by 32 percent to 5,856. Census estimates for 2014 show a further increase of 6% to 6,202. This corresponds to an increase in population density of more than 60 percent, from 203 persons per square mile³ in 1987 to 326 persons per square mile in 2014. This trend has noticeably transformed Rowley’s traditional rural environment into a much more developed community of more suburban character. As the population grows, demand on current recreation facilities and open spaces continue to increase. At the same time, opportunities for enjoying the natural environment are decreasing, as land is developed for new housing. Thus, it is all the more critical that the Town continues to actively preserve land for open space and recreational uses.

Table 3.1: Population of Rowley

Year	1930	1940	1950	1960	1970	1980	1990	2000	2010	2014
Population	1356	1533	1768	2873	3040	3867	4452	5500	5856	6,202
% Increase	---	13.1%	15.3%	62.5%	5.8%	27.2%	15.1%	23.5%	6.5%	6%

Source: 1930-2010 -U.S. Census; 2014 – US Census Quick Facts estimate.

Table 3.2 displays the Town’s population by age cohort for the years 1970, 1980, 1990, 2000 and 2010.⁴ It is striking that the number of children under five decreased by 12 percent between 2000 and 2010 and the number of children 5 to 14 decreased by 10.3%. The decrease in younger children may ease demand on active recreation facilities, although the introduction of new youth sports, such as lacrosse may well negate any impact of a decrease in the young population. Conversely, the population over 45 increased substantially. This age cohort often demands more opportunities for passive recreation.

³ As reported in the 1987 Town of Rowley Open Space and Recreation Plan, p.19.

⁴ The US Census only collects population data by age cohort every ten years for the decennial census; thus, estimates are not available for 2014.

Table 3.2: Age of the Population

Year	Population Numbers and Percentages by Age Group						
	Under 5	5 – 14	15-24	25-44	45-64	65+	Total
1970	287 9.4%	714 23.5%	392 12.9%	794 26.1%	580 19.1%	273 9.0%	3,040
1980	272 7.0%	589 15.2%	709 18.3%	1291 33.4%	645 16.7%	353 9.1%	3,867
1990	417 9.4%	626 14.1%	515 11.6%	1720 38.6%	754 16.9%	413 9.3%	4,452
2000	393 7.1%	920 16.7%	548 10.0%	1790 32.5%	1334 24.3%	515 9.4%	5,500
2010	326	825	636	1301	2086	672	5,856
Net Change 2000-2010	-12.0%	-10.3%	16.1%	-27.3%	56.4%	30.5%	6.4%

In 2010, Rowley residents enjoyed a median household income of \$74,911, which was 16 percent higher than the state average.⁵ The 2014 US Census reports that the median household income has risen to \$85,994.⁶ Approximately 9.0 percent of the population lived below the poverty level in 2014, compared to 11.6 percent of the Commonwealth’s population.⁷

In 2010, there were 2,857 locally-based jobs in Rowley⁸, an increase of 45 percent from 2000. The number of employed Rowley residents was 3,069 in 2010⁹, which indicates that many Rowley residents work outside of their hometown. In 2012, there were 812 firms in Rowley.¹⁰ Of

⁵ Calculated from data from the *2010 US Census of Population*.

⁶ US Census Fact Finder

⁷ US Census Fact Finder

⁸ 2016 Merrimack Valley Regional Transportation Plan

⁹ Massachusetts Executive Office of Labor and Workforce Development

¹⁰ Manta.com

these, the largest included Ipswich Bay Glass Company, DeMoulas Market Basket, Elder Care, Seaview Nursing Home, Spuds, and Mydata Automation Inc.¹¹ This mix of service, retail, and industrial businesses reflects a change in the business composition since the 1998 Open Space Plan, when few industrial businesses were located in the town. The new business mix is a result of zoning changes along Route 1, which encouraged significant industrial and commercial development resulting in the loss of substantial forested lands.

3.4 GROWTH AND DEVELOPMENT PATTERNS

Patterns and Trends

Rowley's development patterns can be traced back to the Town's founding in 1639. At that time, Rowley encompassed a much larger land area, including what today are the towns of Boxford, Georgetown, Groveland, Bradford, and part of Middleton. Agriculture was the primary industry in the Town and large farms dominated the landscape. Of particular note was the expansive Bradstreet Farm located along what is now Main Street overlooking the salt marsh. In a major success for land protection, the town acquired this parcel in 2008. Over the centuries, other farms have included those owned by the Todd, Pikul, Herrick, and Savage families.

During Colonial times, and indeed until the 1980s, the majority of residential development was clustered in the vicinity of the Town center along Main, Bradford, Wethersfield, and Central Streets. During that era, the fulling mill on Glen Street on the north side of town was important not only to Rowley and the surrounding region, but also to the rest of the original thirteen colonies, as it provided cloth to residents. The Dodge Saw Mill (now the Herrick Mill), one of the oldest sawmills in the region, was a valuable asset for the Town.

Rowley's 1963 Master Plan reported that due to wetlands and other land characteristics, only fifteen percent of the Town was buildable. However, with recent technological advances in construction practices, and revisions to Title 5 requirements, many areas previously unsuitable for residential and/or commercial development are now buildable. Accordingly, Rowley has experienced a substantial amount of development within areas that were considered to be unbuildable as recently as thirty years ago. Figure 3.3 shows a current land use map for the Town. The 2003 Master Plan includes recommendations to change the zoning bylaws so that they better protect the Town's resources and scenic character.

Land Use Trends

As a result of improved regional transportation networks, a scarcity of developable land, and escalating prices for existing sites in Boston and the inner suburbs, development has spread outward to communities like Rowley. Figure 3.4 shows development trends in the Town from 1999-2012. Table 3.3 shows the number of residential units built in Rowley between 2000 and

¹¹ As reported by the Massachusetts Executive Office of Communities and Development in *Rowley, Essex County: A Community Profile 1995*.

3.3 Land Use Map

3.4 Development Trends Map

2010. An average of 25 new residential units were built each year during that time period, down from approximately 31 units per year in the preceding seven years. Table 3.6 shows trends in housing from 2000 through 2010. A total of 249 housing units were added in Rowley over the ten year period, an increase of 12.4%. Owner occupied units grew by 245, or 16.3%, while rental units decreased by 48 units, or 10.6%. As described in section 3.3, the population increased by 6.4% over this ten-year period, indicating that household size decreased. The Census information provided in Table 3.3 shows that the Town continues to attract residential development, and this development is likely to increase as the housing market improves after the downturn of the last several years.

Table 3.3: Housing Units and Tenure, 2000 to 2010						
	2000	%	2010	%	Absolute Change	% Change
Total housing units	2,004.00	100.0%	2253	100.0%	249.00	12.4%
Occupied housing units	1,958.00	97.7%	2155	95.7%	197.00	10.1%
Vacant housing units	46.00	2.3%	98	4.3%	52.00	113.0%
Owner occupied	1,507.00	75.2%	1752	77.8%	245.00	16.3%
Renter occupied	451.00	22.5%	403	17.9%	(48.00)	-10.6%

Source: US Census

A closer examination of recent growth reveals several trends that are important to note when planning for future growth. Specifically:

- Development is dispersed throughout the central area of Town on both sides of Newburyport Turnpike (Route 1). Development is sparse in the northeastern part of the Town due to the saltwater wetlands and flood plains in the area.
- Much of the residential development in the 1990s consisted of single-lot frontage development along existing roadsides. This development is also known as “Approval Not Required” (ANR) development because it does not require Planning Board approval. However, as the supply of potential ANR development sites diminished during the 1990s, more and more new residential development that has occurred in the past fourteen years has been in the form of subdivisions.
- Since 1991, the Town has seen significant new industrial development and some redevelopment of existing properties such as the Ipswich Bay Glass Company, Mydata and Porter International. Route 1 continues to see commercial and industrial development in areas zoned for such uses. Zoning has been amended over the past decade to accommodate such development while protecting adjacent forest and wetlands.

Infrastructure - Transportation System

Rowley's roadway system is characterized by a system of north-south and east-west highways. Route 1 bisects the community in a north-south direction, and provides direct access to Boston and Portsmouth, NH. Route 1A provides north-south access directly through Rowley Town Center. Route 133 provides east-west access through Town, and directly connects to Interstate 95 just over the Georgetown line. Much of Rowley's recent growth can be attributed to this convenient access to I-95. Because of increased traffic on Route 133 in Rowley in recent years, the State widened and upgraded this road in 1997.

In 1999, the Massachusetts Bay Transportation Authority reinstated commuter rail service between Rowley and Boston's North Station. The commuter rail station is located on Railroad Avenue at the site of the historic train station (although the historic building is no longer standing). The station has parking to accommodate 290 vehicles. On a typical weekday morning in April 2013, approximately 140 people boarded southbound trains in Rowley.¹² The train service helps Rowley residents who commute to jobs in Boston, but it is clear that it has also increased development pressures in Town.

Rowley and the Bay Circuit Alliance are working with the MBTA to create a multi-purpose trail adjacent to the train tracks. A land survey showed that there is sufficient width for a safe trail, and the MBTA agreed to work with the Town and the trail committee to make this project happen.¹³ However, property owners abutting the proposed trail corridor have protested the development of a multi-use trail, and the project is tabled for the time being.

Fixed-route bus service to surrounding communities is not available in Rowley. A private carrier provides commuter service to Boston. Transportation services for elderly and handicapped residents are available by reservation through the Council on Aging.

Air travel to destinations throughout the nation and the world is available from Logan Airport, located 32 miles south of Rowley in Boston. Private limousine service is available to the Boston airport, as is bus service from Newburyport. Manchester Airport in Manchester, NH provides an alternative to Logan for Rowley travelers. The Plum Island Airport in Newbury, MA is a general aviation facility that accommodates private aircraft.

Town Landing, located on Warehouse Lane, provides access to the Rowley River, Plum Island Sound, and the Atlantic Ocean for Rowley boaters. Currently, the Landing does not provide sufficient space for parking trailers; consequently, boaters have been using conservation land located adjacent to the Landing as a boat trailer parking area. Perley's Marina offers boat-

¹² MBTA, *Ridership and Service Statistics, Fourteenth Edition 2014*

¹³ The community survey conducted for this plan ranked bike paths high among the Town's recreational needs.

mooring facilities for recreational boaters. There are 55 slips and 3 moorings at this marina, and demand routinely exceeds supply by close to fifty percent.

Water Supply System

Rowley’s municipal water department now supplies nearly 1,800 customers, or approximately 90 percent of the Town. The remaining 10 percent of the population is serviced by private wells. The water for municipal wells and private wells originates in the same aquifer. Approximately 85 percent of the public water service connections are for residential customers, ten percent are for commercial businesses, and the remaining five percent are for industrial uses. The water system was constructed in 1948, and the delivery system currently consists of approximately 43 miles of water lines. The delivery system is aging and in need of replacement. The Water Department will be working with an engineering firm to determine a capital water main replacement program.

Table 3.4 describes Rowley’s system of wells.¹⁴ Water currently is supplied by three active wells, Well #2, Well #3, and Well Field #5, which consist of 6 wells. Water from Wells 3 and 5 will be pumped to the Water Treatment plant for processing. The water then flows to the transmission water mains, which aid in delivering water to customers. The water from Well #2 is not filtered through the treatment plant and is treated chemically on site. It then flows to the transmission water mains for delivery to customers.

Table 3.4: Wells in Rowley - Location, Type and Yield

Designation	Location	Type	GDP
Well #1 (abandoned)	Northeast Prospect Hill (near Routes 1A & 133)	Tubular Field	
Well #2 (near Rte. 1)	Haverhill Street	Gravel Packed	600,000
Well #3	Boxford Road	Gravel Packed	600,000
Well #4 (abandoned)	Prospect Hill (near Kent Corner)	Gravel Packed	
Well #5	Pingree Farm Road	Gravel Packed	620,000

Source: S. Miller, Haley and Ward Engineers, Personal Communication

The newest well field, Well #5, was developed in the Pingree Farm Road area.¹⁵ This well should enable the Town to satisfy near-term additional demand from new, approved and expected single-family development. However, demand is expected to further increase due to

¹⁴ The locations of the wells are shown on Figure 4.1, Water Resources, in section 4.

¹⁵ Well #1, located on Route 133 near the intersection with Route 1A, was abandoned in 1998 due to the presence of bacteria and intrusion of sand.

redevelopment and expansion of the commercial districts along Routes 1 and 133, and the continued conversion of undeveloped land to residential housing. The existing water supply is considered inadequate to meet Rowley's long-term needs. In 2010, the Massachusetts Department of Environmental Protection (DEP) issued an environmental consent order to the Town to build a new water treatment plant after high levels of E. coli were found in samples from two of the Town wells. The new treatment plant, built near Well #5, was completed in August 2014.

The Town Water Department and its engineering firm will have to develop alternative water management strategies and search for new water sources to ensure that the Town can meet its own drinking water needs over the long-term. In addition, water storage capacity is an issue. Currently, the town has only 65 percent of the recommended water storage capacity. Additional storage capacity is needed for peak demand periods and to ensure an adequate supply for fire suppression. To address this, the Town reserved four acres of the Hunsley Hills land for a future water tower.¹⁶ As additional open space is acquired, areas that have been identified as potential well and storage tank sites should be considered a priority.

The locations of the wells are shown on Figure 4.2, Water Resources, in section 4. Well #1, located on Route 133 near the intersection with Route 1A, was abandoned in 1998 due to the presence of bacteria and intrusion of sand.

Sewer Service

Rowley has no municipal sewer system and no plans to construct one. All homes and businesses are served by on-site septic systems maintained by the property owners, and local haulers transport septage to disposal facilities in other towns. The Department of Environmental Protection regulations require that all new septic systems meet Title 5 requirements. In addition, when property owners complete remodeling projects that affect a septic system, and when property ownership is transferred, the septic regulations require that the system be brought into compliance with Title 5. To a certain extent, Title 5 requirements help control the location and amount of new development.

Some towns in the Commonwealth have been forced to construct municipal sewer systems due to the number of failing septic systems. Currently, Rowley does not face this issue, but problems such as the multiple failing septic systems on School Street, could some day result in forced sewerage. If the Town did install a sewer system, many parcels that are undevelopable because they don't meet Title 5 requirements would become developable. Therefore, the Town should be sure to take advantage of opportunities such as shared and innovative systems that will allow landowners to bring their systems into compliance to avoid mandatory sewerage and the

¹⁶ **The land set aside for the water tower and road needed to access the tower were omitted from the land purchased with the Self-Help grant used to purchase Hunsley Hills. The Town used other resources to purchase the roughly four acres needed for the future water tower and access road.**

associated increase in development.

Long-term Development Patterns

Land use and development in Rowley is governed by the Protective Zoning Bylaw, first adopted in March of 1960, and last revised in May of 2013. The bylaw identifies seven land use districts, which are described in Table 3.5 and shown on Figure 3.5.

Table 3.5: Rowley Land Use Districts

Central District	Encompasses the historic village area of the Town and provides for business, semi-public, and government uses normally found in a Town Center.
Residential District	Encompass the more established, residential areas surrounding the Town Center.
Outlying District	Areas of low-density residential, recreation, conservation, agricultural, and similar uses compatible with a rural area.
Coastal Conservation District	Areas of low-density residential, recreation, conservation, agricultural, and similar uses compatible with a salt marsh ecosystem and adjacent upland.
Retail District	Areas for retail business which provide goods and services primarily for consumers arriving by automobile.
Business/Light Industry District	Areas for office and professional buildings and for assembly and light manufacturing uses consistent with the Town's suburban character.
Floodplain District	Includes (1) all areas below the elevation of fifteen feet above the mean sea level, based on USGS Maps, bordering salt water or salt marsh, or adjacent to the Parker River, the Mill River, the Rowley River, and the Mud Creek; (2) all areas below the elevation of ten feet above the line following the lowest part of the stream bed or within 100 feet of the following: the lowest part of the stream bed of a named brook, stream or river or the high water line of a pond or lake as shown on USGS Map of Georgetown, Ipswich, Newburyport East and Newburyport West Sections; and (3) all areas within the restrictive line established by Mass. DNR for enforcement of Chapter 131 of the General Laws. The district overlays other land use districts in these areas.

Municipal Water Protection District	An overlay district superimposed on all lands in the Town of Rowley lying within the watersheds of groundwater aquifers which are now or may in the future provide public water supply. Its purpose is (1) to promote the health, safety and general welfare of the community by ensuring an adequate quality and quantity of drinking water for the residents, institutions, and businesses of the Town of Rowley; (2) to preserve and protect existing and potential sources of drinking water supplies; (3) to conserve the natural resources of the Town of Rowley; and (4) to prevent temporary and permanent contamination of the environment.
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Both the Floodplain District and the Municipal Water Supply Protection District provide a basic framework, including required setbacks, that helps to protect the Town’s water resources and drinking water supply from the negative effects of development. The Historic District Bylaw, which was adopted in 1988, applies to land in the historic Town Center and in the immediate vicinity of Glen Mills. The Historic District Bylaw provides renovation and improvement guidelines for Historic District properties, and was designed to ensure that the historic character of these properties is maintained. The Bylaw helps to ensure that development is respectful of the rural and natural environment, but does not go far enough to protect the Town’s natural resources and rural character.

Cluster Development and Open Space Residential Development Bylaws

Rowley’s Cluster Development Bylaw has evolved significantly over time. The first Cluster Development Bylaw was adopted in 1988 “for the purpose of promoting the more efficient use of land in harmony with its natural features; increasing residential amenity, municipal economy and environmental protection in the Town...by conserving space, preserving scenic areas, views, streams and other community assets, preserving the character of neighborhoods, promoting efficiency of street and utility layout; lessening storm runoff, erosion and sedimentation normally associated with more conventional type of residential development; retaining natural drainage courses and wetlands; and in general promoting the health, safety, convenience and welfare of residential areas and the Town as a whole”¹⁷. Unfortunately, there were no cluster developments proposed under the 1988 bylaw because it required that developers submit two full sets of plans – a conventional subdivision plan and a cluster development plan - instead of just one in order to secure planning board approval. The time and expense of creating a second full set of plans was a strong disincentive.

The bylaw was revised and renamed Open Space Residential Development (OSRD) Bylaw in May of 1999. The updated bylaw made the conventional subdivision plan optional, at the Planning Board’s discretion. It also offered the possibility that an increased number of dwellings could be approved in exchange for amenities that would benefit the town and its residents (i.e. open space including trails with public access), to be created and paid for by the developer. After its

¹⁷ Zoning Bylaws-Town of Rowley Massachusetts, revised through October 1991.

3.5 Zoning Map

adoption, two developers submitted OSRD plans, but neither was brought to fruition. Shortly after the start of the review process, the developer of one plan agreed to sell his land to the Town for drinking water protection purposes. The 27-acre property located in the Watershed Protection District was purchased May of 2002, the first parcel to be acquired with Community Preservation Act Funds. The second plan was withdrawn after submittal due to the proposed property having been sold at auction.

The OSRD Bylaw was rewritten again in 2002, to make it more attractive to developers. This new version was modeled after the guidelines set forth in the Green Neighborhoods Initiative. As of May 2014, three OSRD projects have been approved and constructed.

Other Bylaw Adaptations and Changes

In 1996, Town Meeting voted to amend the Protective Zoning Bylaws to limit the number of new single family dwellings that can be built in any twelve (12) month period to twenty-four. A maximum of six (6) single-family dwellings per twelve (12) month period can be built on lots that “were created from land which was contiguous and in the same ownership at any time subsequent to the effective date of [the] bylaw.”¹⁸

In 1999, the minimum lot size was increased in the Central District from 20,000 sq. ft. to 30,000 sq. ft. and in the Residential and the Outlying Districts from 40,000 sq. ft. to 60,000 sq. ft. Other revisions to the bylaw in 1999 included provisions designed to lessen the impact of commercial development on the rural character of the Town. The revisions addressed issues such as outdoor lighting, building height, and the maximum amount of impervious surface area, and have been effective in lessening the visual impact of the commercial development along the Route 1 corridor.

The most significant revision in years occurred in 2002, when several sections of the bylaw were entirely rewritten. Updates included bringing some sections into compliance with State laws and regulations, and revisions to some of the zoning districts. The former commercial district was divided into two districts, one for retail uses and the other for business and light industrial uses. Size limitations were included to prevent so called “big box stores” from locating in these districts and detracting from the rural appearance of the Town. These changes will help the Town better achieve its goal of maintaining the rural character and protection of natural resources.

In November of 2002, the Zoning Bylaw was again amended to exempt personal wireless service facilities (“cell towers”) from frontage requirements. This allows for cell towers to be built on backland, hopefully eliminating the need to place them close to roads in highly visible locations.

The Single Family Dwelling Limitation Bylaw was amended in three ways. The number of single family dwellings permitted in a twelve (12) month period was reduced from six (6) to four (4), on lots created from land that was contiguous and held in common ownership at any time on or

¹⁸ Section 8.5.3 of the Protective Zoning Bylaws of the Town of Rowley

after the effective date of the reduction. A new section was added allowing ten (10) dwellings in OSRD developments to be permitted per twelve (12) month period, in order to encourage the use of the OSRD. The amendment also made the Bylaw permanent, eliminating the 10 year limitation clause.

The Multi-family Bylaw was rewritten and approved in May of 2003, to provide a viable alternative to Comprehensive Permits in the Central and Residential Districts. The Plan also suggests that the Town use the Community Preservation Fund to improve and rehabilitate existing low-cost housing.

Since 2003, minor changes have been made to adjust zoning districts to conform to property lines, to clarify allowable and prohibited uses in different districts, and to update the accessory apartment and sign illumination components of the bylaw.

Master Plan

The 2003 Master Plan recommends that a new Coastal Conservation District encompassing the salt marsh area along the eastern side of the Route 1 and Central Street corridor be created in order to protect the salt marshes, the Parker River Essex Bay Area of Critical Environmental Concern, and the scenic look of Route 1A. The new zoning required a three (3) acre minimum lot size for a single family home, except that OSRDs would be allowed to retain the existing density of 60,000 square feet of land per single family unit, and was approved at Town Meeting in May 2003. Similarly, the Master Plan recommends that the minimum lot size requirement in the Outlying District be increased to 80,000 square feet except that the existing density of 60,000 square feet would apply to OSRDs. However, Town Meeting did not approve the recommended changes.

The Master Plan also recommended the creation of a Central District business area along Route 1A from the Ipswich line to Pleasant Street. The intention of this is to maintain the historic look of the Town Center by limiting the size of new commercial development.

To better understand how zoning changes and the implementation of the master plan will influence future development, a revised build-out analysis is needed. The Merrimack Valley Planning Commission conducted a build-out analysis for Rowley in 2000, which was included in the master plan. This is the last available build-out analysis for the Town, and is now out-of-date. A discussion of the 2000 analysis is found in Appendix D.

4.0 Environmental

Inventory and Analysis



Glen Mills Rowley 1893

4.0 ENVIRONMENTAL INVENTORY AND ANALYSIS

4.1 GEOLOGY, SOILS AND TOPOGRAPHY

Geology

Rowley's geology consists of an undulating bedrock surface (known locally as "ledge") that is overlain by a wide assortment of glacial and marine deposits consisting of till, sand and gravel, marine silts and clays, and fresh and salt water muck and peat. The thickness of these sediments corresponds, to a large degree, to the relief and configuration of the underlying bedrock. For the most part, the deepest deposits (generally of marine clay or sand and gravel) are found in the low-lying, pre-glacial stream valleys that were incised into the bedrock surface. Thinner deposits, typically of till, occur in the uplands, where the bedrock is at shallower depth.

Soils

Soil characteristics are often the most important natural resource factor to be considered in determining development suitability, especially where on-site sewage disposal is required. Soil surveys prepared by the U.S. Department of Agriculture Soil Conservation Service (now the Natural Resources Conservation Service) identify a variety of soil associations that can be used to evaluate a particular area's use-limiting conditions such as high water table, shallow depth to bedrock, steepness, layers of hardpan, or poor drainage. In Rowley, there are nine major soil associations, as shown in Table 4.1. Figure 4.1 displays the location of these associations within Rowley.

Table 4.1 - Approximate Acreage and Proportional Extent of the General Soil Areas in the Town of Rowley

General Soil Area	Acres	Percent
Hinckley-Windsor-Canton-Muck Association	680	6
Deerfield-Wareham-Scarboro Association	1,055	9
Canton-Charlton-Hollis Association	1,490	12
Windsor-Hinckley-Merrimack Association	2,235	18
Paxton-Millis Association	1,170	10
Muck-Biddeford Association	1,150	9
Charlton-Hartland-Hollis Association	435	4
Tidal Marsh Association	425	3
Charlton-Hollis-Belgrade-Buxton Association	800	7
Total for Survey Area	9,440	78
Area Excluded from Survey	2,740	22
TOTAL	12,180	100

Source: Soils and Their Interpretation for Various Land Uses - Town of Rowley, Massachusetts, USDA Soil Conservation Service, 1969.

4.1 Soils Map

The following discussion describes the general locations, physical characteristics, and compatible uses of these nine soil associations.¹⁹ These range from excessively drained deposits of outwash sand and gravel in the vicinity of the Town's municipal wells to very poorly drained clays, loams, and organic materials on the hilltops and in wetlands.

Hinckley-Windsor-Canton-Muck Association. These are drouthy soils formed in thick deposits of sands and gravel, well drained soils formed in coarse glacial till, and poorly drained soils formed in organic material. They occupy about 6 percent of the Town, and occur in three areas: (1) the Boxford Road-Newbury Road area, (2) an area along U.S. Route 1 in the south-central part of town, and (3) a small area between Ox Pasture Hill and Mill River.

In general, the soils in these areas are highly permeable and can absorb sewage effluent readily when not saturated. Unfortunately, this is not typically the case, particularly in the organic deposits where the water table is commonly at or near the surface for much of the year. This, in combination with general steepness of slope, tends to limit these areas to low to moderate densities of development.

Deerfield-Wareham-Scarboro Association. These are moderately well-drained, poorly drained, and very poorly drained soils formed in thick deposits of sand. They occupy about 9 percent of the Town in areas west of Boxford Road, between Hunsley Hills and Wilson Pond, and west of Prospect and Smith Hills.

In general, they are highly permeable and can readily absorb sewage effluent when not saturated. However, in Rowley, about one third of areas characterized by these soils have an intermittent high water table that is within 1- 1/ 2 to 2 feet of the surface for 4 to 5 months of the year. In the absence of a municipal sewer system, this poses severe limitations for home sites and commercial and industrial development. At the same time, there are only slight limitations for certain kinds of recreation and excellent opportunities for wildlife habitat.

Canton-Charlton-Hollis Association. These are deep, well-drained stony soils formed in sandy glacial till and shallow stony soils containing numerous rock outcrops. They constitute about 12 percent of the land and occupy several areas in the west central part of Town where the landscape is gently rolling with a number of rounded hilltops 50 to 130 feet above sea level.

Most of the deeper soils in this area have a rapid permeability, and may result in the contamination of shallow wells if the wells are installed near septic systems. In places where the slopes are moderate to steep and the bedrock is shallow, there are rather strict limitations on high-density residential, commercial, and industrial development. However, there are excellent

¹⁹ For maps showing the location of these soils in Rowley, see *The Soil Survey of Essex County, Massachusetts Northern Part*, United States Department of Agriculture, Soil Conservation Service, in Cooperation with the Massachusetts Agricultural Experimentation Station, 1981.

opportunities for recreational use and wildlife habitat.

Windsor-Hinckley-Merrimack Association. These are well-drained soils formed in deep deposits of sand and gravel. They comprise about 18 percent of the land in Town and occur in scattered tracts along stream terraces, outwash plains, low hills, kames, and eskers. They offer good opportunities for either agriculture or development, and excellent opportunities for recreation.

Paxton-Millis Association. These are deep, stony soils that have formed in compact glacial till. They occupy about 10 percent of the Town in scattered locations that are gently rolling to hilly. In general, they present only slight limitations for agriculture, woodlands, and recreation, but severe limitations for home site development due to a slowly permeable hardpan that retards the downward movement of sewage effluent and rainwater.

Muck-Biddeford Association. These are very poorly drained soils that have formed in thick deposits of organic materials, silt, and clay. They occupy about 9 percent of the Town (principally the central part of Town) and occur in low-lying areas consisting of swamps and wet flood plains. A diverse mixture of moisture-tolerant trees and shrubs, such as red maple, alders, and buttonbush, and various fresh water marsh vegetation such as reeds, grasses, and cattails characterize them. Because of their wetness problems, they are largely unsuited to agriculture or home site development, but provide excellent habitat for birds, waterfowl, and wildlife.

Charlton-Hartland-Hollis Association. These are well-drained soils that have formed in thick deposits of fine sands and silts and stony soils that have formed in glacial till. They occupy about 4 percent of the Town and occur primarily in the rolling terrain around Ox Pasture Hill. Their layer of slowly permeable hardpan tends to constrain their use for on-site septic systems, but they offer good opportunities for agriculture, woodland management, and recreation.

Tidal Marsh Association. These are very poorly drained organic materials, silts, and clays that are subject to regular tidal flooding. They occur extensively throughout the eastern third of Town, where an intricate network of tidal streams dissects the flat terrain and man-made drainage ditches. Because of their severe wetness and low bearing capacity, they are restricted from essentially all uses except wetland wildlife habitat and marsh hay production.

Charlton-Hollis-Belgrade-Buxton Association. These are soils that have formed in glacial till and thick deposits of fine sands, silts, and clays. They occupy about 7 percent of the Town in areas where small knolls and marine plains adjoin the tidal marshes. In general, they are unsuited to extensive development due to conditions of shallow bedrock, fluctuating water tables, and slow permeability, but offer excellent opportunities for recreation, woodland management, and wildlife habitat.

4.2 LANDSCAPE CHARACTER

Rowley's rural landscape is one of its most endearing characteristics. Despite recent development, the Town retains its rural New England flavor, exemplified in the historic Town Common, numerous historic homes, expansive woodlands, operational farms, and winding country roads lined with historic rock walls. The landscape character is further enriched by the expansive salt marsh that hugs the Town's eastern boundary, providing vistas of the ocean and

Plum Island, and important opportunities for wildlife observation. The rolling hills, many rivers and streams, and woodlands that grace Rowley further enhances the rural “feel” of the Town, providing a needed respite from long commutes, congested highways, and the stresses of everyday life.

Unfortunately, development pressures have not left these resources untouched. With subdivision development has come substantial increased traffic on Rowley’s roads, particularly Haverhill Street, Wethersfield Street, historic Route 1A, and country roads such as Glen Street, which connects new development to Interstate 95. Agricultural lands and woodlands are disappearing, replaced by new development. Communications towers and storage facilities scar the hills. Rowley is losing its “New England village” allure and becoming indistinguishable from other suburban Boston communities. Protection of the Town’s landscape character is critical if Rowley is to retain its own, unique identity that has encouraged generations of residents to remain, and which has attracted new residents to the Town.

4.3 WATER RESOURCES

Surface Water Resources

As the accompanying water resources map (Figure 4.2) indicates, Rowley is blessed with a diverse array of interconnected streams, ponds, and wetlands that serve important ecological functions and offer a variety of opportunities for recreational enjoyment. Foremost among these are:

- Mill River, which rises from a series of wetlands in the northwest corner of Town and flows northeasterly to the Parker River above the Town's northern border
- Upper and Lower Mill Ponds, two elongate impoundments created by a broadening of the Mill River channel
- Wilson Pond
- Great Swamp Brook, a southeastern flowing tributary of Mill River
- Bachelder and Ox Pasture Brooks, which emerge from wetlands in the central part of Town and flow northerly to Mill River
- Mud Creek
- Rowley River, a tidal waterway that serves as the Town's southeastern boundary and provides important shellfish habitat
- Plum Island Sound, a broad estuary on the Town's eastern edge fed by the Parker and Rowley Rivers

Together, these waters form a rich network of fish, shellfish, and wildlife habitats, and afford numerous opportunities for swimming, boating, canoeing, and other water-based recreational pursuits.

Several areas in town, where old roads cross floodplains associated with streams, are subject to chronic flooding due to heavy rains. Rowley is riddled with floodplain areas, many designated as Zone A on maps produced by the Federal Emergency Management Agency. In addition, the eastern side of Plum Island is classified as Zone V2 as it directly faces the Atlantic Ocean.

4.2 Water Resources Map

The Parker River Clean Watershed Association (PRCWA) is a private non-profit organization dedicated to preserve and protect the Parker River and its watershed (which includes most of Rowley). PRCWA currently monitors several sites in Rowley for several variables including flow, fecal coliform bacteria, turbidity, dissolved oxygen and selected nutrients.

Other important water resources in Rowley include vernal pools, isolated seasonal wetlands inhabited by many wildlife species, some of which are totally dependent on these pools for their survival. Vernal pools are small, seasonal water bodies occurring in isolated basins, which are usually wet during the spring and early summer and dry up during the later summer months. Vernal pools typically lack fish populations, making them excellent breeding habitat for many amphibian species and larval and adult habitat for many insect species, as well as other wildlife. The wood frog (*Rana sylvatica*) and all species of mole salamander (genus *Ambystoma*) that occur in Massachusetts breed exclusively in vernal pools. Areas in the immediate vicinity of the pool also provide these species with important non-breeding habitat function, such as feeding, shelter and over wintering sites.

Certified Vernal Pools are resources that have been inventoried by local volunteers and certified under the Massachusetts Natural Heritage and Endangered Species Program process. Certified Vernal Pools that are large enough to constitute Areas Subject to Flooding (as defined by the Massachusetts Wetland Protection Act) are protect under the Wetland Protection Act for the wildlife habitat value. However, State law does not protect smaller Certified Vernal Pools (or those that have not yet been identified. Potential Vernal Pools are resources that have been identified by the state using aerial photography and are also unprotected. Because vernal pools are temporary and seasonal, they can easily be developed unless they have been certified with the NHESP and have protection under the Wetland Protection Act.

The State has identified multiple Potential Vernal Pools in Rowley. The Open Space Committee currently has certified 11 vernal pools through NHESP. The protection of vernal pool habitat is essential for the continued survival of wildlife species dependent upon this unique type of wetland. The rapid rate of development in Rowley makes it imperative that additional vernal pools be proactively certified and mapped so as to steer proposed development projects away from these critical habitats.

Ground Water Resources

Rowley also has important groundwater aquifers, which are the Town's sole supply of drinking water (refer to Table 3.4 in previous section). An aquifer is a geologic formation capable of yielding significant quantities of potable water. Aquifers are generally found in sand and gravel deposits where pores in the soil allow water to collect. Groundwater enters the aquifer through sand and gravel soils, wetland, and surface water bodies, and slowly percolates through the ground in a down-gradient direction. To date, four of these sources have been developed for municipal use, of which three remain active.

The Water Department received state certification of the Zone II areas for each well field. The Zone II designation formally establishes the aquifer recharge areas for the wells, and, in conjunction with the Municipal Water Supply Protection District, limits the types of uses allowed

within the aquifer recharge area.

4.4 VEGETATION

Rowley contains a diverse mixture of vegetation types, ranging from dense stands of hardwoods in the upland areas and on hill slopes to broad expanses of salt marsh grasses and reeds on the coast. In-between is an assortment of mixed hardwood and softwood forests, inland wetlands, and abandoned and active farms, the latter of which include open land for hay, pasture, apple orchards, ornamental nursery plants, and vegetables. Dominant tree species in Town include eastern white and yellow pine, prevalent in the west central part of Town; oaks, beech, and sugar maple on the drumlin hills and well-drained uplands; and red "swamp" maple in the fresh water lowlands. Associated under story species include, among others, barberry, black cherry, Virginia creeper, honey locust, sweet fern, alder, viburnum, and sumac; and sweet pepperbush, highbush blueberry, winterberry holly, and sensitive and cinnamon fern in wetlands.

In the Town's southwest corner is the 1,112-acre Georgetown-Rowley State Forest (297 acres in Rowley), which is administered for forest stand improvement by the Massachusetts Department of Conservation and Recreation. Though primarily devoted to timber production and the preservation of wildlife habitat, the forest offers excellent opportunities for hiking, nature observation, and other forms of passive recreation compatible with timberland management.

The eastern end of Town consists of a broad salt marsh that is dotted with low-rising knolls and crisscrossed by myriad small tidal creeks. Throughout the growing season, this area supports dense growths of *Spartina* grass, spike grass, and other estuarine plants that provide food and habitat for numerous species of resident and migratory birds and wildlife. Field surveys by botanists with the Massachusetts Natural Heritage Program (MNHP) have identified several plant species classified as "rare" or "uncommon" in the Commonwealth. These plants, which are listed in Table 4.2, occur in several select locations that MNHP personnel have asked not be publicized in order to prevent inadvertent losses through collection or habitat destruction.

Table 4.2 - Endangered Plants

Element Name	Common Name	Federal Status	State Status	Year Last Observed
Aristida	Seabeach	-	T	1995
Tuberculosa	Needlegrass			
Sagittaria	Estuary	-	E	1896
montevidensis	Arrowhead			
ssp. spongiosa				

Key: SC = Special Concern; T = Threatened; E = Endangered

Source: Commonwealth of Massachusetts, Division of Fisheries and Wildlife, BioMap 2

The salt marsh environment has long been recognized as one of the most efficient and

productive ecosystems in the world. On average, it produces ten tons of biomass per acre per year or about 30% more biomass than the best wheat fields in the world. As the interface between the land and the ocean, the salt marsh receives fresh water, nutrients, and sediments from the land, and saline water and other sediments and nutrients from the sea. This continuous exchange created by the rising and falling tides replenishes oxygen supplies, assimilates water-borne pollutants, flushes out accumulated metabolic wastes, and carries food and other vital nutrients to the marsh's diverse plants and animals.

In recognition of the importance of these functions, the salt marsh environment is protected against dredging, filling, and other harmful activities by the federal Clean Water Act and the state Wetlands Protection and Coastal Wetlands Restriction Acts. In spite of these measures, there is still potential for localized degradation of the marsh and other coastal resources through pedestrian overuse or lack of legislative enforcement. For this reason, it is essential that the Town protect these resources by the adoption and enforcement of strong local wetland bylaws.

Agricultural land also provides unique types of vegetated habitat. In 1999 Rowley had 844 acres (7.1 percent of its land) in agricultural use²⁰; primarily mixed between cornfields for the two remaining dairy farms, and forested land which is periodically harvested. Both of these types of land provide wildlife habitat.

4.5 FISHERIES AND WILDLIFE

Wildlife abounds in Rowley due to both the abundance and diversity of the Town's open space areas. In general, the species of birds and mammals present are characteristic of those found throughout much of the rural Northeast, and consist of a variety of both resident and migrant populations. Some can be found in large numbers throughout much of the Town; others are rare and confined to a few small, localized habitats.

The BioMap2 project conducted by the Division of Fisheries and Wildlife (now the Department of Fish and Game) identified several BioMap areas – areas of most importance to protect in order to maintain the biodiversity of the town, region, and state. According to BioMap2, there are 3,365 acres of core habitat in Rowley, of which, 1,830 (54.4%) have been protected in perpetuity. Critical natural landscapes comprise 3,913 acres, of which 2,149 (54.9%) are protected. Many parcels within the Great Marsh are owned by land protection organizations such as Mass Audubon, Essex County Greenbelt Association, and the MA Department of Fish and Game. A large portion of the eastern section of Rowley is included in BioMap2 core habitat.

The MA Natural Heritage and Endangered Species Program denotes three large wildlife areas/corridors with the Town. One incorporates the eastern third of the Town, including a portion of the Great Marsh, which extends from Cape Ann to Salisbury. The second incorporates land in the western part of the Town in the area of the Georgetown-Rowley State Forest. The third straddles the border between Rowley, Ipswich and Boxford. Other wildlife corridors include

²⁰ Rowley Master Plan Committee with Daylor Consulting Group and the Merrimack Valley Planning Commission, *2002 Draft Rowley Master Plan*

eh riparian areas along the Mill, Egypt and Rowley Rivers. The entire section of Plum Island included within the boundaries of Rowley is within BioMap2, and is protected as part of the Parker River Wildlife Refuge. Many of the occurrences of rare species and natural communities in Rowley are found here.

Much of this eastern section of town is already protected open space. The remaining areas of unprotected BioMap core habitat along Plum Island Sound contain continuous areas of coastal wetland and could serve as a good area for further protection efforts. These areas serve as prime habitat for several coastal water birds. The western edge of town has several large BioMap core polygons and a large expanse of Supporting Natural Landscape (SNL) (areas that serve to buffer and connect BioMap core polygons), and therefore is an area to focus upon for land protection. Existing protected open space such as the Georgetown-Rowley State Forest and the Arthur Ewell Reservation do not take up a large percentage of this southwestern section of town. This area contains wetland resource suitable for turtles and salamanders. By adding to these already protected areas and connecting separate pieces within the BioMap Core Habitat and SNL, the viability of rare species populations will continue over the long term and the biodiversity of the town will be maintained.²¹

Mammals

The species of mammals most common to Rowley are listed in Table 4.3. The largest of these are the white-tailed deer, which inhabit mixed and deciduous woodlands with an under story, forest edges, and farms. In the past, an occasional moose or black bear (though not in recent memory), has been spotted but these are transient, not permanent, residents. NHESP’s BioMap2 does not list any endangered mammals in Rowley.

Table 4.3 - Mammals of Essex County, MA

Family	Common Name	Scientific Name	Status
Cervidae	Whitetail Deer	Odocoileus virginianus	P
Leporidae	Eastern Cottontail	Sylvilagus floridanus	C
	New England Cottontail	S. nutalli	C
	Varying Hare	Lepus americanus	C
Mustelidae	Striped Skunk	Mephitis mephitis	C
	Short-tailed weasel	Mustela erminea	C
	Long-tailed weasel	Mustela frenata	C
	Mink	Mustela	C

²¹ Letter to Susan Jones Moses from Christina Vaccaro, Environmental Review Assistant, Division of Fisheries and Wildlife, dated December 21, 2001.

	Otter	<i>Lutra canadensis</i>	P
	Fisher	<i>Martes pennanti</i>	R/A
Procyonidae	Raccoon	<i>Procyon lotor</i>	C
Didelphidae	Opossum	<i>Didelphis marsupialis</i>	P
Felidae	Bobcat	<i>Lynx Rufus</i>	C
Canidae	New England Coyote	<i>Canis latrans</i>	R/A
	Gray Fox	<i>Urocyon cinereoargenteus</i>	C
	Red Fox	<i>Vulpes fulva</i>	C
Sciuridae	Eastern Gray Squirrel	<i>Sciurus carolinensis</i>	C
	Red Squirrel	<i>Tamiasciurus judsonicus</i>	C
	Eastern Chipmunk	<i>Tamias striatus</i>	C
	Woodchuck	<i>Marmota monax</i>	C
	Northern Flying Squirrel	<i>G. sabrinus</i>	C
	Southern Flying Squirrel	<i>Glaucomys volans</i>	C
Castoridae	Beaver	<i>Crstar canadensis</i>	P
Erethizontidae	Porcupine	<i>Erethizon dorsatum</i>	P
Cricetidae	White-footed mouse	<i>Peromyscus leucopus</i>	C
	Red-backed vole	<i>Clethrionomys gapperi</i>	C
	Meadow vole	<i>Microtus pennsylvanicus</i>	C
	Pine vole	<i>Pitmys pientorum</i>	C
	Muskrat	<i>Oudatra zibethica</i>	C
Zapodidae	Meadow jumping mouse	<i>Zapus hudsonius</i>	C
	Woodland jumping mouse	<i>napaeozapus insignis</i>	C
Muridae	Norway rat	<i>Rattus norvegicus</i>	C
	House mouse	<i>Mus musculus</i>	C
Talipidae	Eastern mole	<i>Scalopus aquaticus</i>	C
	Hairytaile mole	<i>Parascalops breweri</i>	C
	Starnose mole	<i>Condylura cristata</i>	C
Soricidae	Masked shrew	<i>Sorex cinereus</i>	C
	Shorttail Shrew	<i>Blarina breveccuda</i>	C

Key: P = present, status uncertain; C = common; R = rare; A = absent

Source: Merrimack Wastewater Management - Key to a Clean River - Northeastern United States Water Supply Study. Appendix IV-B, Biological Impacts, Volume I. New England Division, US Army Corps of Engineers, November 1974.

The eastern cottontail is the most abundant species of rabbit. The New England cottontail and Varying hare are also present, especially in the region's wooded upland areas. Raccoons, weasels, and skunks are encountered throughout the region. The latter are present even in developed areas because of their ability to eat almost any kind of food and to inhabit virtually any place that will afford shelter.

Predators such as bobcats and gray and red fox are found throughout the region, although their local populations are never large. Fishers are also present, but are rare. There is evidence that the New England coyote is increasing its range and abundance in the state, but detailed knowledge about this species is sparse. Local sightings have been reported within the past several years.

In terms of actual numbers, the area's most successful mammals are the rodents. The largest of these are the beaver and muskrats, which, though present, are restricted in distribution to the area's undisturbed streams, ponds, and wetlands. Squirrels and mice, of course, are found in nearly all habitats, including those of man. The latter are especially prevalent in areas of active farming.

Endangered vertebrates and invertebrates in Rowley that are listed by the Massachusetts Natural Heritage and Endangered Species Program (NHESP) are listed in Table 4.4.

Table 4.4 - Endangered Vertebrates and Invertebrates of Rowley

Scientific Name	Common Name	Federal Status	State Status	Last Observation
Ambystoma Laterale	Blue-Spotted Salamander	-	SC	1983
Clemmys Guttata	Spotted Turtle	-	SC	1986
Cincinnatia Winkley I	New England Siltsnail	-	SC	1986
Littoridinops Tenuipes	Coastal Marsh Snail	-	SC	1986
Hemidactylum scutatum	Four-toed Salamander	-	Non-listed SWAP	NA
Scaphiopus holbrookii	Eastern Spadefoot	-	T	NA

Key: SC = Special Concern; T = Threatened; non-listed SWAP= Species listed in the State Wildlife Action Plan that are not listed under the Massachusetts Endangered Species Act; NA= information not available

Source: Massachusetts Natural Heritage and Endangered Species Program, Division of Fisheries and Wildlife

The Division of Fisheries and Wildlife has identified several Potential Vernal Pools in Rowley. The Open Space Committee currently has certified 11 vernal pools through NHESP and is planning to continue researching and studying Potential Vernal Pools. The protection of vernal pool habitat

is essential for the continued survival of wildlife species that depend upon this unique type of wetland, such as the wood frog (*Rana sylvatica*), all species of mole salamander (genus *Ambystoma*), and fairy shrimp (*Branchiopoda Anostraca*). The rapid rate of development in Rowley makes it imperative that additional vernal pools be proactively certified and mapped so as to steer proposed development projects away from these critical habitats.

Birds

Table 4.5 lists bird species that have been directly observed in Rowley’s woodlands, fields, wetlands, salt marsh, and beaches. These species commonly are associated with four plant communities found throughout eastern Massachusetts:

- White Pine-Hemlock - Northern Hardwood Association
- Yellow Pine - Hardwood Association
- Orchards, fields, pastures, and cultivated land
- Fresh and salt water marshes

Among the habitats cited above, the greatest species diversity is encountered in the agricultural areas, where as many as 60 kinds of birds may be present. This diversity is largely attributable to the number and variety of introduced plants that comprise the orchard field-cultivated areas, offering a wide range of food, nesting sites, and protective cover. There is evidence that the number of birds in these areas is actually greater now, despite man's presence, than when the European settlers first arrived.

The second most important plant community is the white pine-hemlock-northern-hardwood forest, which supports over 40 species of birds. This forest is mostly cutover, and populated with sprout or second growth trees and various groundcover flora. Such habitats are highly productive of bird (and mammal) life, more so than the undisturbed mature forests which originally occupied the region.

The fresh and salt-water marsh environments support some 35 species of birds. These habitats are especially important to wildlife as they provide protected breeding areas for resident species as well as stopover points and wintering grounds for a number of migratory birds and waterfowl.

The yellow pine-hardwood forests are somewhat lower in species diversity, with about 30 bird species present. These areas are characterized by smaller trees and shrub thickets and a floor that is often nearly bare or matted with pine needles.

Table 4.5 - Species of Birds Observed in Rowley, Massachusetts

Broad-winged Hawk	Red-tailed Hawk	Rough-legged Hawk
American Kestrel	Merlin	Peregrine Falcon
Ring-necked Pheasant	Ruffed Grouse	Northern Bobwhite
Clapper Rail	King Rail	Virginia Rail
Sora	Common Moorhen	American Coot
Black-bellied Plover	Lesser Golden-Plover	Semipalmated Plover
Piping Plover (endangered)	Killdeer	Greater Yellowlegs

Lesser Yellowlegs	Solitary Sandpiper	Willet
Spotted Sandpiper	Whimbrel	Hudsonian Godwit
Marbled Godwit	Ruddy Turnstone	Red Knot
Sanderling	Semipalmated Sandpiper	Western Sandpiper
Least Sandpiper	White-rumped Sandpiper	Baird's Sandpiper
Pectoral Sandpiper	Dunlin	Stilt Sandpiper
Buff-breasted Sandpiper	Ruff	Short-billed Dowitcher
Long-billed Dowitcher	Common Snipe	American Woodcock
Wilson's Phalarope	Laughing Gull	Bonaparte's Gull
Ring-billed Gull	Herring Gull	Iceland Gull
Lesser Black-backed Gull	Glaucous Gull	Great Black-backed Gull
Roseate Tern	Common Tern	Arctic Tern
Least Tern	Black Tern	Rock Dove
Mourning Dove	Black-billed Cuckoo	Yellow-billed Cuckoo
Eastern Screech-Owl	Great Horned Owl	Snowy Owl
Barred Owl	Great Grey Owl	Western Grebe
Long-eared Owl	Short-eared Owl	Northern Saw-whet Owl
Common Nighthawk	Whip-poor-will	Chimney Swift
Ruby-throated Hummingbird	Belted Kingfisher	Yellow-bellied Sapsucker
Downy Woodpecker	Hairy Woodpecker	Northern Flicker
Pileated Woodpecker	Olive-sided Flycatcher	Eastern Wood-Pewee
Yellow-bellied Flycatcher	Least Flycatcher	Eastern Phoebe
Great Crested Flycatcher	Western Kingbird	Eastern Kingbird
Horned Lark	Purple Martin	Tree Swallow
N. Rough-winged Swallow	Bank Swallow	Cliff Swallow
Barn Swallow	Blue Jay	American Crow
Black-capped Chickadee	Boreal Chickadee	Tufted Titmouse
Red-breasted Nuthatch	White-breasted Nuthatch	Brown Creeper
Carolina Wren	House Wren	Winter Wren
Marsh Wren	Golden-crowned Kinglet	Ruby-crowned Kinglet
Blue-gray Gnatcatcher	Veery	Gray-checked Thrush
Swainson's Thrush	Hermit Thrush	Wood Thrush
American Robin	Gray Catbird	Northern Mockingbird
Brown Thrasher	Water Pipit	Cedar Waxwing
Northern Shrike	Loggerhead Shrike	European Starling
White-eyed Vireo	Solitary Vireo	Yellow-throated Vireo
Warbling Vireo	Red-eyed Vireo	Blue-winged Warbler
Golden-winged Warbler	Tennessee Warbler	Orange-crowned Warbler
Nashville Warbler	Northern Parula	Yellow Warbler
Chestnut-sided Warbler	Magnolia Warbler	Cape May Warbler
Black-throated Blue Warbler	Yellow-rumped Warbler	Black-throated Green Warbler
Blackburnian Warbler	Pine Warbler	Prairie Warbler
Palm Warbler	Bay-breasted Warbler	Blackpoll Warbler

Black-and-white Warbler	American Redstart	Ovenbird
Northern Waterthrush	Louisiana Waterthrush	Connecticut Warbler
Common Yellowthroat	Wilson's Warbler	Canada Warbler
Yellow-breasted Chat	Scarlet Tanager	Northern Cardinal
Rose-breasted Grosbeak	Indigo Bunting	Rufous-sided Towhee
American Tree Sparrow	Chipping Sparrow	Field Sparrow
Vesper Sparrow	House Sparrow	Savannah Sparrow
Sharp-tailed Sparrow	Seaside Sparrow	Fox Sparrow
Song Sparrow	Swamp Sparrow	White-throated Sparrow
White-crowned Sparrow	Dark-eyed Junco	Lapland Longspur
Snow Bunting	Bobolink	Red-winged Blackbird
Eastern Meadowlark	Rusty Blackbird	Common Grackle
Brown-headed Cowbird	Orchard Oriole	Northern Oriole
Pine Grosbeak	Purple Finch	House Finch
Red Crossbill	White-winged Crossbill	Common Redpoll
Pine Siskin	American Goldfinch	Evening Grosbeak
Dovekie	Western Tanager	Ash-Throated Flycatcher
Fulvous Whistling Duck	Wild Turkey	Golden Eagle
Three-Toed Woodpecker	Red-Bellied Woodpecker	Sandhill Crane
Foster's Tern		

Source: Direct observation by Town residents using Mass. Audubon Society Checklist

Table 4.6 lists birds observed in Rowley that are listed by the NHESP.

Table 4.6 - Endangered Birds of Rowley

Element Name	Common Name	Federal	State	Last Observation
<i>Botaurus lentiginosus</i>	American Bittern	-	E	1990
<i>Gallinula chloropus</i>	Common Moorhen	-	SC	1982
<i>Ixobrychus exilis</i>	Least Bittern	-	E	1988
<i>Podilymbus podiceps</i>	Pied-billed Grebe	-	E	1974
<i>Rallus elegans</i>	King Rail	-	T	1982
<i>Sterna hirundo</i>	Common Tern	-	SC	1996
<i>Ammodramus caudatus</i>	Saltmarsh Sharp-tailed Sparrow	-	Non-listed SWAP	NA
<i>Calidris alba</i>	Sanderling	-	Non-listed SWAP	NA
<i>Ammodramus maritimus</i>	Seaside Sparrow	-	Non-listed SWAP	NA
<i>Limnodromus griseus</i>	Short-billed Dowitcher	-	Non-listed SWAP	NA
<i>Porzana carolina</i>	Sora	-	Non-listed SWAP	NA

Caprimulgus vociferous	Eastern Whip-poor-will	-	SC	NA
Ammodramus savannarum	Grasshopper Sparrow	-	T	NA
Charadrius melodus	Piping Plover	-	T	2014
Circus cyaneus	Northern Harrier	-	T	NA

Key: E=Endangered; T=Threatened; SC=Special Concern; WL=Unofficial Watch List; LE=Federally Endangered; LT=Federally Threatened; non-listed SWAP= Species listed in the State Wildlife Action Plan that are not listed under the Massachusetts Endangered Species Act; NA= information not available

Source: *Massachusetts Natural Heritage and Endangered Species Program; Division of Fisheries and Wildlife*

Fisheries

Plum Island Sound, the Great Marsh, and tidal estuaries within Rowley provide a rich environment for marine wildlife. Of particular economic and recreational importance are the shellfish beds, from which soft-shell clams are harvested. Surf clams, blue mussels, and oysters also inhabit these areas. Rowley’s shellfish beds are regularly threatened by high levels of fecal coliform bacteria in the waters after heavy rainfalls, which require that the clam flats be closed to clambers on occasion.

The estuary also provides a habitat for numerous fin fish. Species have included winter flounder, windowpane, white perch, alewife, blueback herring, hake, American eel, and American smelt.²²

In July 1996, the Massachusetts Division of Fisheries and Wildlife did field sampling along the Mill River to identify fish species present in the River. Table 4.7 lists fish found in the Mill River at that time. “In addition, two anadromous species, blueback herring and smelt, spawn in the river each spring. The river is stocked with brook, brown, and rainbow trout, some of which do become anadromous and spend part of their lives in the estuary and ocean.”²³

Table 4.7 - Fish Species of the Mill River, Rowley, Massachusetts

American eel	Golden shiner
White sucker	Blue gill
Pumpkinseed	Redfin pickerel
Sea lamprey ammocetes	Creek chub sucker
Bridle shiner*	Largemouth bass

²² Jerome, William C., Jr., Arthur P. Chesmore, and Charles O. Anderson, Jr., *A study of the Marine Resources of the Parker River-Plum Island Sound Estuary*, Massachusetts Department of Natural Resources, Division of Marine Fisheries, Monograph Series 6, March 1968.

²³ Letter to Betty Herrick from Bob Gouthro, Rowley resident and conservationist, dated January 7, 1998.

Brown bullhead	Brown trout
Yellow bullhead	Fallfish
Common shiner	

**The Bridle shiner is listed as a species of special concern by NHESP and is the only fish in Rowley so listed.*

Source: Ken Simmons, Ph. D., Massachusetts Division of Fisheries and Wildlife, Letter to Bob Gouthro, October 8, 1996.

4.6 SCENIC RESOURCES AND UNIQUE ENVIRONMENTS

Table 4.8 lists several important scenic, cultural and historic sites in Rowley. Many of these features are discussed further in the text below, and shown on Figure 4.3.

Scenic Landscapes

Rowley has some of the finest coastal, river, farmland, and forest scenery in New England. The Parker River Wildlife Refuge on Plum Island offers sweeping vistas of the Atlantic Ocean and the salt marshes, and provides opportunities for bird watching and wildlife observation. Important coastal vegetations are found throughout the Refuge.

Views of the salt marsh can be seen from automobile (along Route 1A), footpaths, and waterways. The views change from season to season, and from tide to tide. Spring and summer vegetation, fall foliage and winter snows provide dramatic landscapes across the marshes. Stacks of drying salt marsh hay recall visions of early times. Artists and photographers frequently use the salt marsh as the subject of their work. Both the areas of Rowley within the Parker River Wildlife Refuge and the salt marsh are listed by the NHESP as Critical Natural Landscapes.

Inland from the marsh, the landscape is characterized by drumlins, country roads, historic architecture, farmlands and forests. Short hikes to the tops of the Town's five hills provide spectacular vistas of Rowley, the surrounding communities and the ocean. On clear days, views from the top of Prospect Hill can reach as far as Maine to the north and downtown Boston to the south. The State of Massachusetts Department of Conservation and Recreation, with help from the Town, purchased Prospect Hill approximately ten years ago, and the land is now protected from development and connects with the Bay Circuit Trail. In 2000, the Town purchased 104 acres of the area known as Hunsley (Hunslow) Hills. The Division of Conservation Services awarded the Town a \$250,000 grant toward the purchase of this property, with the stipulation that the land be permanently protected for passive recreation and conservation. Efforts are underway to develop a system of trails connecting Prospect Hill to the Georgetown-Rowley State Forest via Hunsley Hills.

Additional land acquisitions by the Town since 1997 include 58 acres adjacent to the Georgetown-Rowley State Forest, of which 14 acres will be used as a well site and 44 acres are protected through a DEM conservation restriction. The western-most portion of this state forest is listed as a Critical Natural Landscape by the NHESP. In 2002, the Town purchased the 27.6 acre

4.3 Scenic Resources

Pingree Farm parcel, which is adjacent to the 58 acres. This land is the first purchase made by the Town using Community Preservation Funds, and it is protected by a permanent conservation restriction held by DEM. The Division of Conservation Services awarded the Town a \$250,000 Self-Help grant toward the purchase of this parcel. The Town contributed toward the purchase of a conservation restriction on the Minister's Woodlot, a 20+/- acre parcel located at the junction of Stackyard Road and Route 1A. The Massachusetts Audubon Society holds the conservation restriction on this property.

Mass Audubon and Essex County Greenbelt Association successfully protected 265 acres in the Rough Meadows Wildlife Sanctuary between 1990 and 2012. In 2006, the Town purchased the 119-acre Bradstreet Farm with Community Preservation Funds. Of the total, 103 acres were set aside as permanent open space, 9 for active recreation²⁴, and 2 for affordable housing. The Town placed an historic preservation restriction on the remaining seven acres, which include the historic house and barn, and sold the land to a private owner. The money from the sale was returned to the Community Preservation Fund.

One wetland and one aquatic core buffer areas as defined by the NHESP are found in the northwestern section of Town close to the Georgetown border.

Major Characteristic or Unusual Geological Features

Rowley's topography is dominated by the five hills that lie within the Town's boundaries. These include Prospect, Long, Hunsley Hills, Ox Pasture, and Smith Hills. Since the adoption of the 1998 Open Space and Recreation Plan, the Town acquired 104 acres of Hunsley Hills with assistance from the Division of Conservation Services Self-Help Program. This land is now permanently protected from development. In 2002, the Town received a grant from the Fields Pond Foundation to develop a trail network on Hunsley Hills, erect a kiosk, and develop trail maps. The trail network and kiosk have been completed, and the maps are currently in production. Sadly, the south side of the Hills, which remains in private ownership, is threatened by a condominium development proposed for the property under Chapter 40 (B).

The salt marsh defines the character of the region on its eastern boundary. Another important accomplishment since the adoption of the 1998 Plan was the purchase of an agricultural preservation restriction on the Pikul Farm, one of the last two dairy farms in the Town. In 2013, Tendercrop Farm leased the Pikul Farm to use for its dairy and beef operations. This farm is located adjacent to the salt marsh and provides a picturesque gateway to Rowley for people traveling south into the Town along Route 1A.

Residents regarded Symonds Rock, a large rock outcropping at the junction of Wethersfield Street and Hillside Street, as an important geological feature that should be preserved for future

²⁴ Due to soil constraints, this land cannot be developed as playing fields so will likely remain as permanent open space.

generations. This property was listed on the Town’s Action Plan in the 1998 Open Space and Recreation Plan. Unfortunately, the property was divided into 14 Form A lots and 14 single-family homes now occupy the property.

Cultural, Archeological and Historic Areas

Rowley has two historic districts listed by the Massachusetts Historical Commission - the historic Town Center area and the Glen Mills area (which includes the oldest fulling mill and oldest stone arch bridge in America). There are over 180 historic structures and sites in Town, of which several are listed in the National Register of Historic Places as designated by the National Park Service. Of particular note is the Platt-Bradstreet House, constructed in 1677. This structure serves as the headquarters for the Rowley Historical Commission.

Table 4.8 - Partial List of Scenic, Cultural and Historic Sites: Rowley, MA

Site	Features
Prospect Hill	Views of 20,000 acres reach of estuarine marsh, flats and riparian forest against the Atlantic Ocean and Views of Maine and New Hampshire
Smith Hill on Bradford Street	Pastoral vistas
Hunsley Hills	Ocean vistas
Long Hill	Woodlands, hills
Mill River	Riparian forest, waterfowl, marsh
Rowley River	Salt marsh, historic bridge
Ox Pasture Brook	Wildlife, wetlands
Bachelor Brook	Wildlife, wetlands, woodlands
Streets within Historic Districts	Historic houses, rock walls, historic mill
Mansion Drive	Ocean, salt marsh, agriculture
Hammond Street - End to Paradise Spring	Land of King’s Grant, salt marsh
Dodge Road	Agriculture, wetlands, river
Morgan Farm off Boxford Road	Agriculture, Rowley Water Supply Protection - purchased by town
Wethersfield Street	Fields, woodlands (Spar and Spindle GS Camp), River
Red Gate Road	Agriculture, salt marsh
Pingree Farm Road	Pastoral fields, woodlands
Boxford Road	Woodlands, State Forest
Pulpit Rock	Historic rock and woodlands, burying grounds
Nelson Island	Duck blinds, tidal pools, wetlands, Plum Island Sound, wildlife
Town Recreation Ball Fields	Water Supply Protection
Unnamed Brook, west of Rte. 1A, North of Railroad Tracks	Wildlife, Woodlands
Sandy Bridge	Woodlands
Girl Scout Camp	Woodlands, Wildlife

Source: *Open Space and Recreation Plan Committee*

Pulpit Rock, located at the junction of Leslie Road and Meetinghouse Lane, is said to have been the site of a 1770 sermon conducted by the Reverend George Whitfield, and attended by 2,000 people. A historic small pox cemetery (Metcalf Rock Burial Ground) is located on Trowbridge Circle. The site marks the graves of twelve victims of the disease who died during an epidemic between 1775 and 1781. On September 15, 1775, Rowley's Town Common served as an encampment for musketeers in Benedict Arnold's expedition to Quebec during the Revolutionary War.²⁵

In 2000, the Town partnered with the Essex County Greenbelt Association, the Massachusetts Audubon Society, and a private donor to purchase a conservation restriction on the historic site known as the Minister's Wood Lot. This 20-acre parcel is the site of the wood lot of Ezekiel Rogers, the founder of the Town of Rowley. The parcel is adjacent to important salt marsh habitat. Soon after acquisition of the CR, the Town received a grant from AmeriCorps to develop a trail network on this property. Trail development was completed in the fall of 2000.

Unique Environments

In 1979, the Executive Office of Environmental Affairs designated the Parker River/Essex Bay Area of Critical Environmental Concern (ACEC). This area includes land and water within Rowley, Newbury, Essex, Ipswich, and Gloucester. It includes all of the Parker River Wildlife Refuge and Plum Island Sound, as well as parts of the Rowley and Mill Rivers and Ox Pasture Brook. All of the salt marsh within Rowley is included in the ACEC. The Parker River/Essex Bay ACEC includes virtually all of the seventeen significant resources considered in the ACEC designation process. Of particular note are barrier beaches (including Plum Island), salt marsh, dunes, beach, shellfish, estuaries, anadromous fish runs, floodplains, erosion and accretion areas, coastal-related recreation, historic sites, significant wildlife habitats, and significant scenic sites.

Despite the ACEC designation for the Parker River/Essex Bay area, the area continues to be threatened. In particular, pollution from agricultural uses, failing septic systems, and storm water runoff continue to harm the area. In 1994, Massachusetts Audubon North Shore conducted the Plum Island Sound/River System study to evaluate water quality issues affecting this area. Bacterial monitoring conducted as part of the study found evidence of point and non-point water pollution. Because of high bacterial counts after rainfall, the shellfish beds in Plum Island Sound are regularly closed after rainfalls of just ½ inch. The study further reports that "high fecal coliform counts, measured by the Town of Rowley ... within the [area] reveal potential

²⁵ Jewett, Amos Everett and Emily Mabel Adams Jewett, *Rowley, Massachusetts "Mr. Ezechi Rogers Plantation" 1639-1870*, Newcomb and Gauss, Co., Printers: Salem, MA, 1946.

threats to sole sources of local public drinking supplies” even in dry weather.²⁶

4.7 RECREATION FACILITIES

Rowley has a number of recreational facilities used for organized sports, pick-up games, and casual recreation. These include:

Eiras Park, located behind the Rowley Police Headquarters on Haverhill Street. This is Rowley’s primary facility for organized youth and adult sports. The lower field of the park is used for adult league baseball and Babe Ruth (youth) baseball. The upper field is used for youth soccer, Little League baseball, and girls’ softball. Eiras Park is also the site of the Kids Kingdom Playground and skating rink.

Haley Field, located off Route 133 just west of Route 1. This facility is used for Little League baseball.

Veterans Field, located behind Pine Grove School. This field is use for Triton Youth Soccer.

Pine Grove Elementary School outdoor basketball court. This facility is not used by any leagues, but many residents (both youth and adults) use this facility for pick-up games, particularly in evening hours.

Pine Grove Elementary School Indoor Gym. This facility is used by a winter basketball league, and for early spring practice for girls’ softball. After school cheerleading practice also takes place at this facility.

Pine Grove School Soccer Fields. Pine Grove School now has soccer fields that are used by leagues.

Town Landing. This facility is used for boating. Swimming is no longer allowed here, due to conflicts with boat traffic and concerns about water quality.

Rowley Town Common. Concerts are held on the Common during summer months, and other group and community activities, such as craft fairs, the farmers’ market, and Town celebrations are held here.

Georgetown-Rowley State Forest. While not used for organized active recreation, the State Forest is used for hunting, hiking, cross-country skiing, picnicking, horseback riding, etc.

Triton Regional High School. While not located in Rowley, Rowley middle school and high school students attend this facility located just outside the Rowley Town line in Newbury. There are soccer fields, outdoor track facilities, baseball fields, a lighted football field and tennis courts at

²⁶ Cooper, Andrea and Robert Buchsbaum, *Plum Island Sound/Rivers System Final Action Plan*, Massachusetts Audubon: North Shore, Massachusetts Bay Minibays Project, October 1994.

Triton. Teams affiliated with the school dominate use of the fields.

Leagues that use the facilities listed above include:²⁷

- Rowley Youth Baseball – 200 Rowley kids participating in 2016
- Triton Babe Ruth Baseball - 90 kids from the Triton region participating in 2016
- Triton Youth Soccer – 300 kids from the Triton region participating in 2016
- Rowley Softball – 60 participants in 2016
- Legion Baseball – 30 participants in 2016
- Rowley Rams Baseball – 15 participants in 2016
- Area AAU baseball teams.

4.8 ENVIRONMENTAL CHALLENGES

Hazardous Waste Sites

In recent years, the State Department of Environmental Protection has listed several Rowley sites as hazardous materials sites. Most of these sites represented either small industrial problems or petroleum spills from automobile accidents. Most have been cleaned up and the State's files closed. One case of concern remains. Veteran's Mobil Station at the corner of Route 1 and Route 133 is in the process of completing site cleanup from oil spills. The cleanup should be completed by 2016.

Landfills

The Rowley landfill, located on Red Gate Road, has been closed since 1991. A portion of the site is owned by the Town of Rowley, while the majority of the site is privately-owned land. In 1990, the Massachusetts Department of Environmental Protection issued an Administrative Consent Order to the Town to prepare a Comprehensive Site Assessment Scope of Work and closure plan for the landfill. The land fill has now been capped and is being monitored.

The Town currently has no official plans for the reuse of the landfill. The site is large and potentially could be used for recreational uses; however, recreational uses should only be pursued if the Town can be assured that there are no associated health risks.

Erosion

Rowley does not have significant areas subject to erosion. However, many developers have bypassed subdivision review by developing "Form A" lots (i.e., Approval Not Required because each lot has its own access to an existing street). The Town currently has no erosion controls established for these types of developments. Developers generally do provide construction period erosion control plans, but few (if any) prepare post-construction plans.

²⁷ The Rowley Recreation Committee could not provide s for 2014 and instead provided numbers for 2016.

Chronic Flooding

Several areas in Town are subject to chronic flooding due to heavy rains. These include: Wethersfield Street at Bachelder Brook, Hillside Street at Great Swamp Brook, Route 133 at Cedarwood Lane, and several areas on the west side of Town south of Route 133, including Leslie Road and Newbury Road. These old roads, built across floodplains associated with streams, were constructed at existing grade, and therefore can be underwater during flood times. There are two aspects to flooding - water volume which needs storage; and rate of runoff. Volume is addressed by the Wetlands Protection Act and Planning Board regulations. New roads now are required to be raised above the floodplain, with culverts sized to allow the stream to pass. When floodplain areas are filled for roads, driveways, grading or building, an equal volume of flood storage space must be excavated as compensation.

The runoff rate is addressed only for subdivisions and commercial development. When naturally vegetated landscape is changed to impervious roofs, driveways, parking areas or quickly draining lawns, rainfall and snowmelt can flood off the site more quickly than before development occurred, causing problems downslope. Single lots (ANR developments) are not subject to any regulation addressing this runoff rate issue. The Town may wish to consider a bylaw to prevent off-site flooding from all types of development.

Sedimentation

Both the Mill River and Ox Pasture Brook have suffered from sedimentation and erosion of their banks as a result of development and stormwater runoff. Sedimentation in these waterways has caused loss of fisheries, and the loss of general aquatic and microvertebrates habitats. Rowley needs better planning tools to work with developers to prevent further deterioration of our important water resources. In addition, the budget of the Town Highway Department must include resources to ensure that road sanding, street sweeping and catch basin cleanout are accomplished without adding to sedimentation problems in the Town's streams, brooks, and rivers.

Development Impact

Continued development in Rowley cannot help but have negative impacts on the Town's open space and recreational resources. These impacts include:

- increased surface runoff and non-point source pollution problems
- increased demand on the Town's already strained recreational facilities
- disappearance of the Town's open space resources, including agricultural uses, forests, trails and fields
- increasing demand on the Town's already strained water supply
- destruction of the Town's scenic character, as features such as stone walls and hillsides are demolished for new development
- increased demand on all services, including fire protection, infrastructure and schools.

The 1995 Rowley Growth Management Handbook was prepared to provide guidelines to the Town to help diminish these negative impacts. It is imperative that the Town pursues the adoption of these guidelines. In particular, recommendations for cluster zoning to encourage open space in new developments, and recommendations to reduce lot coverage in new commercial developments can help to mitigate these negative impacts, if adopted.

Ground and Surface Water Pollution: Point and Non-Point

In 1991, Massachusetts Audubon Society: North Shore (MAS:NS), with support from the Town of Rowley,

received a five-year grant from the Massachusetts Bays Program to identify sources of pollution to Plum Island Sound and to complete a management plan outlining strategies to remediate the identified sources. From 1991 - 1995, MAS:NS worked with the Rowley Board of Health, the Rowley Highway Department, the Rowley Conservation Commission, citizens, and farm/stable owners on a water quality sampling program, shoreline surveys, and designs for best management practices and pollution reduction strategies.

By 1995, results of the water quality sampling program showed that fecal coliform was contributing contamination to rivers, tributaries, the estuary, and shellfish beds. Stormwater runoff (from impervious surfaces and agricultural land uses) and failing septic systems caused high fecal coliform counts in various locations in the Mill River Watershed in Rowley.

The study found that the biggest "hot spot" for fecal coliform was on Central Street, where Ox Pasture Brook crosses under Central Street between Main Street and Wethersfield Street. Through soil tests, septic system inspections, and shoreline surveys, MAS:NS concluded that failing septic systems caused the pollution. MAS:NS worked with a team of state and federal officials to design a wastewater management program. The program recommended a community shared septic system on Town property (Center School) to alleviate residential and municipal septic problems in that area. The Board of Health, DEP, and residents supported the program, but Town officials declined to seek funding to install the shared system.

The study identified another major hot spot on School Street. This pollution resulted from a municipal drainage system that channeled all runoff to the brook. Through another grant, MAS:NS worked with the Rowley Highway Department, Mass Coastal Zone Management, and US Natural Resources Conservation Service to implement the Mill River Watershed NPS Reduction Project. The scope of the project was to design a municipal drainage system to treat water quality problems before entering the brook. The Highway Department installed a *StormTreat* System in 1996.

The study found various hot spots along the main stem of the Mill River, on the west side of Rowley, off Dodge Road and Wethersfield Street. Agricultural runoff from farms and stables along the river bank caused these problem areas. Under the Mill River Watershed Project, MAS:NS, NRCS, and CZM worked with the Herrick Farm and stable owners to discuss best management practices for reducing animal waste pollution.

Rowley has supported and participated in both the Plum Island Sound Project and the Mill River Project. Although some advances have been made, fecal coliform bacteria counts remain high, indicating pollution of water resources, aquatic life, fisheries, and shellfish beds.

Some recommendations made in the Plum Island Sound Project for Rowley to consider are:

- completion of a wastewater management plan to upgrade failing septic systems, including investigation of alternative technologies;
- an agricultural management program, working with farmers and stable owners to obtain funding to install best management practices;
- continue to address water quality when reconstructing roads and drainage systems; and
- adopt growth management strategies to protect open space, prevent sprawl, and reduce likelihood of increased pollution.

Natural resources (such as marsh and wetlands) act as nature's pollution filtration systems and flooding controls. Proper land use management tools such as conservation subdivision design would help Rowley protect conservation areas and special resources while permitting growth. Use of conservation restrictions and APRs will also assist in land protection.

In 2010, the Department of Environmental protection issued a consent order requiring the Town to build a new water treatment plant after high levels of e. coli were found in two the Town's wells. The new plant was completed in 2014.

Impaired Water Bodies

In 2002, four water bodies were listed as Massachusetts Category 5 Waters "Waters requiring a TMDL²⁸" as part of the Federal Clean Water Act.²⁹ These waters included:

- Egypt River
- Mill River – Headwaters to the outlet of small unnamed pond between Route 95 and Rowley Road, Boxford to Route 1, Rowley
- Mill River – Route 1, Rowley to confluence with Parker River, Newbury
- Rowley River – Confluence with Egypt River and Muddy Run to mouth at Plum Island Sound, Rowley/Ipswich.

As discussed in the previous section, various efforts are underway in Rowley to address the causes that led to these waters being classified as Category 5. However, much still remains to be done to bring these waters into compliance with the Clean Water Act.

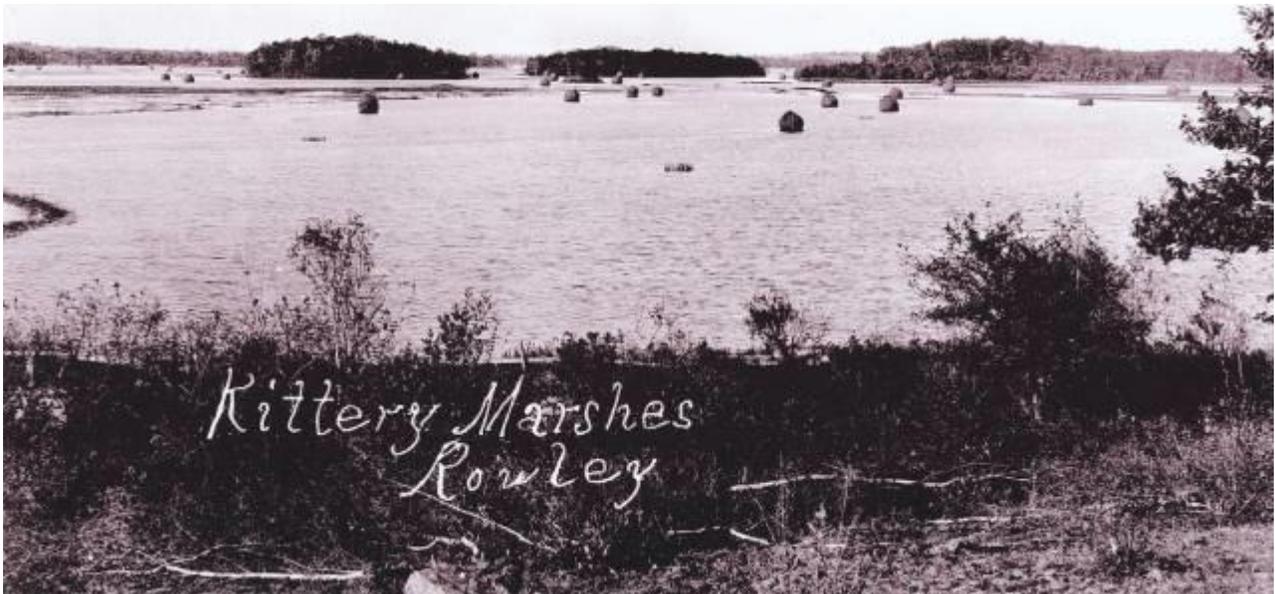
Forestry Challenges

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 in Rowley have historically been managed for production of wood products and also utilized in the pasturing of livestock. Today the lack of active forest management and the open condition of abandoned pasture land has presented an opportunity for invasive plant species to gain a foothold. Forested pasture land is particularly susceptible to intrusion by glossy buckthorn, Japanese barberry and Oriental bittersweet. Active management of forests for wood products is complicated by the decreasing size of the forested acreage under individual ownership. Harvesting of wood products can become uneconomical due to the smaller acreages involved and the relatively low value of the tree species that compose Rowley's forests. Forests also face threats from invasive pests including the Asian longhorned beetle, emerald ash borer, gypsy moths and winter moths. Monitoring and managing the town's protected open spaces are important to ensure the long-term sustainability of Rowley's forests and the benefits they provide.

²⁸ **Total maximum daily load**

²⁹ **Commonwealth of Massachusetts, Executive Office of Energy and Environmental Affairs, Massachusetts Department of Environmental Protection, Bureau of Water Resources ,*Massachusetts Year 2014 Integrated List of Waters.***

5.0 Inventory of Lands of Conservation and Recreation Interest



Kittery Marshes 1910

5.0 INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST

This Section contains an inventory of protected properties, as well as a discussion of semi-protected and unprotected parcels that are of open space or recreational interest. The inventory found here is important to help the Town identify future efforts needed to implement the town’s vision for open space and recreation lands.

Parcels that are permanently protected, which include land owned by the Town, the Commonwealth of Massachusetts, the U.S. Fish & Wildlife Service, Mass Audubon, Essex County Greenbelt Association, and private parties, are discussed in Section 5.1. Protected lands are parcels subject to Article 97 of the Massachusetts Constitution.

Semi-protected parcels, which enjoy a recreational use, but that are not subject to Article 97 restrictions, are discussed in Section 5.2. Unprotected parcels, including private properties enrolled in Chapter 61, 61A, and 61B, the Camp Pennacook property owned by the Girl Scouts of Eastern Massachusetts, and other private parcels, are discussed in Section 5.3. Table 5.1 summarizes all of these parcels by ownership. Figure 5.1 shows the location of these parcels. Appendix A provides a more detailed inventory by parcel, including a list of all conservation restrictions.

Table 5.1 - Protected and Unprotected Land of Conservation Interest

Ownership	No. of Parcels	Total Acreage
Permanently Protected Land (see sect. 5.1)		
Town of Rowley		
Held and Managed by the Conservation Commission	28	568.27
Held and Managed by the Water Department	9	103.72
Parcels Under Other Governmental Ownership		
Commonwealth of MA (DCR and DFWELE) *	31	1,269.26
U.S. Fish & Wildlife Service	1	800.00
Essex County	2	8.49
Land Trust and Privately Held Properties		
Essex County Greenbelt Association	71	511.33
Mass Audubon	40	203.35
Private with Conservation or Agricultural Preservation Restrictions	17	387.18
Total Permanently Protected	199	3,851.60
Other Municipal Lands (see sect. 5.2)		
Open/Recreational	16	71.88
Pine Grove School	1	16.19
Total Semi-Protected	17	88.07

Unprotected Land of Conservation or Recreational Interest (see sect. 5.3)		
Chapter 61 (Forest)	21	626.58
Chapter 61A (Agricultural)	74	917.62
Chapter 61B (Open Space)	1	10.21
Girl Scouts of Eastern Massachusetts	1	206.94
Total Unprotected	97	1,761.35
Total Protected, Semi-Protected, and Unprotected Lands of Conservation Interest	313	5701.02

*Agricultural Preservation Restriction are included under "Private with CR or APR" rather than in this category.

Rowley has a rich heritage extending back to its founding in 1639. Stone walls, farms, fields and forests help define this long history and their protection is critical to the identity of the Town. Further, the eastern part of the Town contains part of the Parker River National Wildlife Refuge, as well as acres of salt marsh that comprise part of the Great Marsh. The wildlife refuge and the marsh are key to the Town's identity, providing important habitat for rare and endangered species of plants and animals, and support the economy through spending in Town by tourist who visit these areas. All of the Town's vast open areas provide wildlife habitat, as well as areas for residents to recreate and enjoy nature. The protected open spaces, as well as those yet to be protected, provide critical natural infrastructure to filter stormwater, and protect the Town from flooding. The Town's large and small farms provide produce and livestock to help feed residents of Rowley and the region. Several of the Town's protected open spaces also protect historic sites, such as Hunsley Hills, which was once the Town's common pasture. For all these reasons, the continued protection of open space and areas for recreation should rank as an important goal for the Town.

5.1 Lands of Conservation and Recreational Interest

5.1 PROTECTED PARCELS

Permanently protected open space is land set aside for conservation, agriculture or active and passive recreation purposes. Protected lands include lands protected by the State, the Town, Essex County Greenbelt Association, Mass Audubon, and Conservation and Agriculture Preservation Restrictions. 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 land acquired for the preservation of resources or for recreational purposes from development unless five actions are met, including a 2/3 vote by the State legislature to change use. Any land removed from Article 97 protection must be replaced with a parcel of equal conservation value. The process for removing a parcel from Chapter 97 protection is purposefully onerous to discourage such transactions. Deed restricted parcels are protected in perpetuity.

Funding for the Town conservation purchases comes from a variety of sources. Voters approved the Community Preservation Act in 2001 at a 3% property tax surcharge. Since that time, CPA funds have been appropriated for the second of the two Pingree Farm purchases and the Bradstreet Farm acquisition. Prior to passing CPA, the Town acquired land through a Town Meeting appropriation or a debt exclusion vote. In addition to municipal funds, Rowley has successfully leveraged State Self-Help Grants for the purchase of both Pingree Farm parcels and the Hunsley Hills property. And the Town has received grant funding from the Fields Pond Foundation and Essex County Greenbelt Association.

Parcels Owned by the Town

The Town of Rowley owns approximately 672 acres of protected land that is held and managed by either the Conservation Commission or the Water Department. A description of these parcels is provided below.

Parcels Managed by the Conservation Commission

Description: The Town's Conservation Commission has jurisdiction over 28 parcels totaling 568 acres. The largest of these include Bradstreet Farm (105 acres), Hunsley Hills (104 acres), the Pingree Farm Conservation Area (62 acres), and the area behind Eiras Park, which is informally known as the Smith Lane Conservation Area (80 acres). Along with Conservation Commission holdings across the street from Town Landing, all of these sites are well marked and easy for residents to locate and use. There are also a number of smaller parcels, including land that has been taken in lieu of back taxes, scattered about town. These parcels are unmarked and therefore difficult for residents to find.

Current Use: Conservation land is maintained in its natural state. Residents may use the sites for hiking, wildlife observation, picnicking, and other passive recreation activities. A trail system has been developed in the Hunsley Hills property, and trails are being added at Bradstreet Farm. There are no formal picnic facilities or sanitary facilities on any of the Conservation Commission properties

Recreation Potential: In addition to the low impact recreational uses such as hiking and skiing, a

small portion of the Bradstreet Farm property is being used for a community garden, and the Myopia Hunt Club has been granted permission to continue to use the Bradstreet property for seasonal horse trail rides. There is capacity for more intensive and a wider variety of low impact recreation activities on many of the parcels.

Public Access: Public access ranges from limited to none. Hunsley Hills, Bradstreet Farm, and Pingree Farm Conservation Areas provide limited parking and some marked trails. The other sites have no maintained trails.

Parcels Managed by the Water Department

Description: The Water Department owns three active well fields in town, the water tanks on Prospect Hill, and a few parcels around the well fields, including the Haley Field. The Water Department and the Town purchased a fourteen-acre site in 1999 that was developed and added to the drinking water supply in 2003. Current plans for a required filtration plant to be constructed adjacent to the most recently added well field off Pingree Farm Road are underway with anticipated completion in 2014.

Recreation Potential: No recreation activities are currently provided or recommended for these sites, beyond the current use of the Haley ball field.

Public Access: To protect the Town's water supply, public access to the well fields is discouraged.

Properties Under Other Governmental Ownership

There are several governmental agencies other than the Town of Rowley that hold and manage conservation lands. These include the Massachusetts Department of Conservation and Recreation, the Massachusetts Division of Fisheries and Wildlife, and the US Fish & Wildlife Service. Although county government has been dissolved, there are two parcels that are still held under Essex County ownership. A description of each of these properties is below.

Commonwealth of Massachusetts, Department of Conservation and Recreation

Description: The State Department of Conservation and Recreation owns 533 acres of land within the Town of Rowley, including the 27 acres of Willowdale State Forest that are within Rowley, 388 acres of the Georgetown-Rowley State Forest adjacent to Route I-95, the 97-acre Prospect Hill parcel on Haverhill Street, and a few scattered smaller parcels.

Current Use: The three larger areas are traversed by trails and fire roads and are frequented by wildlife observers, hikers, horseback riders, mountain bikers, cross-country skiers, and snowmobilers.

Public Access: The Willowdale State Forest generally is approached through Ipswich. The Georgetown-Rowley State Forest can be accessed from a trailhead on Boxford Road, as well as from Pingree Farm Road. Prospect Hill is identified by a Department of Conservation and Recreation sign and small parking area at the base of the hill.

Commonwealth of Massachusetts, Division of Fisheries and Wildlife

Description: The State Division of Fisheries and Wildlife (DFWELE) manages more than 736 acres of coastal forest and marshland on the east side of Rowley, much of which is within the William Forward Wildlife Management Area.

Current Use: The wooded portions of the DFWELE land is utilized by hikers, horseback riders, and hunters, while the marshland is less visited because they it is unmarked, inaccessible, and criss-crossed with creeks and drainage ditches.

Public Access: Public access ranges from limited to none due to the scarcity of parking and difficult terrain.

U.S. Fish and Wildlife Service

Description: The Parker River Wildlife Refuge on Plum Island and the surrounding marshes on the mainland at the end of Stackyard Road include 800 acres that are within the Town's borders.

Current Use: The acreage on Plum Island is used for a variety of passive recreational activities including: hiking, swimming, sunbathing, bird watching, biking, and fishing. The mainland portion of the Refuge is used for hiking, hunting, fishing, bird watching, and clamming.

Public Access: The Plum Island portion of the Refuge is a fee-for-use area with extensive programs and handicapped facilities, while the Stackyard Road land is unpaved with unimproved gravel parking and no provisions for handicapped accessibility.

Essex County

Description: The Route 133 roadway was relocated to eliminate a curved section, which made the undeveloped forest portion of the property contiguous with the protected Hunsley Hills open space.

Current Use: The wooded parcels appear to be part and parcel of the Hunsley Hill property and are treated as such. Access is the same as for the Hunsley Hills Conservation area.

Public Access: Undeveloped.

Land Trust and Privately Held Properties

In addition to the governmentally-owned conservation land in Rowley, there are a number of parcels that have been protected by Essex County Greenbelt Association, Mass Audubon, and private landowners utilizing an Agricultural Preservation Restriction (APR) or Conservation Restriction (CR).

Essex County Greenbelt Association

Description: The Essex County Greenbelt Association, a not-for-profit land trust, has permanently protected 512 acres of open space in Rowley, the majority of which is forest and salt marsh land on the east side of Town.

Current Use: The 31-acre wooded Ewell Reservation on Haverhill Street and the marshland

including Sawyer's Island are used for horseback riding, hiking and wildlife observation. The many other scattered parcels, which include inland forest along Great Swamp Brook, parcels within the mosaic of Rough Meadows Wildlife Sanctuary, and property in the Great Marsh, are used less frequently due to their scattered locations, limited frontage, and wet nature.

Public Access: Some of the marshland properties are best reached by boat, and many acres are subject to flooding during lunar high tides.

Mass Audubon

Description: Mass Audubon, a not-for-profit environmental organization, owns and manages the 204-acres Rough Meadows Wildlife Sanctuary, most of which is located in Rowley's Great Marsh.

Current Use: The Rough Meadows Wildlife Sanctuary is comprised primarily of coastal woodlands and salt marsh off Stackyard Road and Far Division Road and is used for hiking and wildlife observation.

Public Access: Mass Audubon has a cooperative management agreement with Essex County Greenbelt Association that allows Mass Audubon to develop trails that cross Greenbelt holdings within the Rough Meadows Sanctuary. This has increased accessibility on both organizations properties. A dedicated parking lot for the Sanctuary was constructed at the time that the previously developed portion of the property was restored to its natural state.

Pikul Farm, protected by the MA Agricultural Resources

Description: A former dairy farm on Route 1A bordering coastal forest and salt marsh, the Pikul property was protected in 1998, when the Agricultural Resources purchased an Agricultural Preservation Restriction. The APR eliminates future development on 88 acres of the property, but leaves the land in private hands for continued farming. The Pikul Farm APR covers areas that are above 15 feet in elevation. Rowley's restrictive floodplain bylaw essentially eliminates development on the lower lying land.

Current Use: The dairy farm is no longer operating. However, discussions with a local farmer about a lease and possible future purchase were ongoing as of the end of 2013, and some type of farm operations are likely to be resumed in the future.

Public Access: None

First Congregational Church, protected by Mass Audubon and the Town of Rowley

Description: The First Congregational Church, a not-for-profit religious organization, has protected 22 acres known as the Minister's Woodlot on Main Street via a conservation restriction that is co-held by Mass Audubon and the Town.

Current Use: The wooded parcel is used for hiking and wildlife observation.

Public Access: Parking is provided at the side of Stackyard Road.

Rowley Golf Course

Description: In 2013, Rowley restricted 76 acres of the 89-acre Rowley Country Club golf course on Dodge Road with a Conservation Restriction. The CR was granted to the Town at no cost as part of the permitting approval process for the remaining 13-acres, which are now slated for residential development.

Current Use: A nine-hole golf course.

Public Access: The Conservation Restriction allows seasonal and restricted public access to trails when the golf course is not open for members to play golf.

5.2 OTHER MUNICIPAL LANDS

There are a number of well-loved Town-owned properties that support a wide range of recreational and educational activities that are heavily used by Town residents. These properties include the Eiras Park Recreation Area, Town Landing, Town Common and Pine Grove School are not formally protected and not subject to Article 97 regulations.

Eiras Park Recreation Area

Description: Located behind the Police Station on Haverhill Street (Route 133), Eiras Park is a 17.5 acre parcel adjacent to Well Field #2, which is managed by the Rowley Water Department.

Managing Agency: Recreation Committee.

Current Use: The Town's largest recreation area, Eiras Park contains soccer fields, two baseball fields, and the Kids' Kingdom Playground.

Recreation Potential: There have been plans to add more fields, picnic facilities, and possibly an indoor recreation facility to this site. However, more recently the Bradstreet Farm parcel was purchased with CPA funds and a portion was designated for recreational use. If the Bradstreet parcel is developed for recreational uses in the future additional development at Eiras Park may not be necessary. The park does have the potential to support an informal seasonal ice skating rink, should there be enough interest and funding to create and remove it each year.

Public Access: The park has an ample unpaved parking area of which portions can be impassable when muddy. While handicapped parking spaces have been designated, no additional improvements have been made for handicapped accessibility. (The Appendix C inventory includes recommendations for improving handicapped access.) Seasonally-available portable lavatories are the only sanitary facilities available at the site.

Town Landing

Description: The Town Landing is a half-acre parcel on the Rowley River that includes a boat launch, small beach and boat dock. There are two additional parcels held and managed by the Conservation Commission directly across Warehouse Lane; while not technically part of the Town Landing, the three properties are loosely grouped together.

Managing Agency: The Town Harbormaster oversees the use and enforces parking and boating regulations.

Current Use: The Landing sees heavy summer use from recreational boaters and year- round use from the local shell fishermen. Swimming is not permitted at the site.

Recreation Potential: While the beach was once used extensively by the townspeople for swimming, the water is no longer clean enough for this purpose. However, the new pump-out boat for marine toilets has improved water quality and when the planned shore side toilet facilities are constructed, additional water quality improvements may allow for swimming at the Landing once again.

Public Access: Town residents must purchase a sticker in order to utilize the Town Landing for boat trailers. The small parcel affords no room for parking, so the Warehouse Lane conservation land, which has a designated parking area and mowed fields for overflow parking, is used for that purpose. Parking in that area is not limited to Town residents.

Town Common

Description: A two-acre parcel across from Town Hall, the Town Common is centrally located in the heart of the historic district.

Managing Agency: The Board of Selectmen maintains and schedules events on the Common including use of the baseball diamond.

Current Use: The Common is used heavily by the townspeople for a wide variety of purposes. Concerts are held at the bandstand in the warmer months, the farmer's market operates weekly from April through October, and youth soccer and adult softball teams use the field extensively. Bike and running clubs often make the Common their start, finish, or water stop, and Rowley's Annual 4th of July family festivities are hosted here by the Recreation Committee. Recently the Town Common has undergone a restoration effort designed to return it to a more historically accurate treed condition.

Recreation Potential: Despite the heavy use of the Common, more recreational activities could occur here, especially with the addition of park benches, picnic tables and toilet facilities. The 2010 Open Space Survey included many requests for these additions.

Pine Grove School

Description: Built on the site of a former baseball field, the Pine Grove School is situated on a sixteen- acre parcel near the downtown area.

Managing Agency: The Triton Regional School Committee manages the school building and the surrounding grounds.

Current Use: Within the school are two indoor gyms, and the school grounds contain two playground areas and basketball courts. The school uses these facilities during school hours, but they are available to the public after-school hours and on weekends.

Recreation Potential: During non-school hours these facilities are in great demand hosting

youth basketball, adult basketball or volleyball games most weeknights. The school district plans to develop additional outdoor recreation space behind the building. In addition, the school is pursuing the development of a nature trail that will include a (yet-to-be-certified) vernal pool, located between the basketball courts and the Congregational Church property to the south.

Public Access: The school grounds include adequate public parking and handicapped access.

Miscellaneous Town-owned Parcels

Description: The Town owns 22 miscellaneous scattered parcels totaling 77 acres, ranging from forest on the west side of Town to open marshland on the east side of Town. The parcels include three cemeteries: the Rowley Burial Grounds behind Town Hall, the Smallpox Cemetery on Trowbridge Circle, and the Pulpit Rock Burial Ground off Leslie Road. Some parcels are largely landlocked and not contiguous with restricted municipal properties. Others are along tidal creeks, including the 24-acre peninsula formed where Low Country Creek meets the Rowley River. A number of these parcels were acquired through past tax title-takings.

Recreation Potential: Some of these areas are used for passive recreation activities, and could be used more extensively.

Public Access: The public access varies from parcel to parcel. The three cemeteries are all accessible by car, while most of the remaining sites are accessible only by foot, and do not have maintained trails. The Town needs a system in place for developing and managing Town-owned lands for passive recreation.

Potential Disposition: Because these miscellaneous Town-owned parcels are not restricted, it is possible that some/all of the parcels could be sold to generate revenue. Due to the ongoing financial crisis at the State and local levels, the Board of Selectmen has held three auctions over the past six years to dispose of land, most of which was taken for back taxes. In addition, the Town is studying possible transference of salt marsh parcels adjacent to the Division of Fisheries and Wildlife properties to achieve possible revenue and protection of those lands. The Open Space Committee has provided input into this process, recommending parcels that the Town should keep for conservation.

5.3 UNPROTECTED PARCELS

There are a number of properties in Rowley that are unprotected and are of conservation or recreational interest. These include land enrolled in Chapter 61 as well as privately held parcels that are not protected in any way. A full list of these parcels can be found in Appendix A.

Chapter 61, 61A, and 61B Lands

Description: Rowley has 1,554 acres within 96 parcels that are temporarily protected under Chapters 61, 61A, and 61B of the Massachusetts General Laws.

Current Use: Most of the Chapter properties are used as farmland, but there are a handful of

managed woodlots.

Recreation Potential: Many of these parcels have great recreational potential for activities including hiking, horseback riding, bird watching, and biking. However, they are not currently accessible to the public.

Degree of Protection: While enrolled in the program, the property owners enjoy reduced property taxes, which provides an incentive to maintain the lands as undeveloped farms, woodlands, and open space. However the incentive is often not enough to keep the land undeveloped. Many of the Town's subdivisions are located on land once protected under Chapter 61. Although the Town may exercise a right-of-first-refusal prior to a sale to a developer, only a modest acquisition fund is currently available. As a result, Chapter 61 lands continue to be sold to developers.

Girl Scouts of Eastern Massachusetts Inc./Camp Pennacook

Description: The Girl Scouts of Eastern Massachusetts owns a 206-acre parcel known as Camp Pennacook, located south of Wethersfield Street stretching south to the Town-owned Smith Lane Conservation Area.

Recreation Potential: One of the largest remaining undeveloped parcels in Rowley, the Girl Scout property is ideal for a wide variety of recreational activities including hiking, cross-country skiing, horseback riding, wildlife observation, and bike riding.

Degree of Protection: This property is very much at risk. The Girl Scouts of Eastern Massachusetts recently reviewed all of its land holdings and determined that the Camp Pennacook is underutilized and no longer a priority for their mission. The Girl Scout Council has approached Essex County Greenbelt Association and the Town of Rowley in the hope of locating a conservation buyer for the property. If an agreement cannot be worked out and funding secured, the Girl Scout Council could sell the parcel for development. Developers have approached the group on several occasions.

Other Large Privately Held Parcels

Description: There are a large number of smaller environmentally sensitive parcels, many of which are landlocked and forested, that are owned privately and not under the Chapter 61 program. While these have not been fully inventoried, it is believed that there may be 30 to 40 scattered throughout the Town. These parcels include the sole remaining King's Grant property, part of which is currently in private agricultural use, located along Route 1A.

Degree of Protection: These parcels are not protected in any way and they are not included in the total acreage provided in Chart 5.1.

5.4 Environmental Equity

Environmental equity refers to equal access to open space, relative amount of tree cover near a person's residence, and other environmental quality characteristics a person is subject to based on that person's inclusion in a population identified as an environmental justice population.

Environmental justice (EJ) populations are those with a high percentage of minority, non-English speaking, low income and foreign-born populations. According to the Mass GIS map showing EJ populations in Massachusetts, there are no such populations in the Town of Rowley.

Environmental equity also refers to the ability of all users, regardless of where they live in a community, to access open space and recreation land. Rowley is fortunate to have a distribution of open space and conservation land across the Town, providing good access to all residents. Given the rural nature of the community, there are no areas in Town where access to tree cover is difficult.

6.0 Community Goals



Rowley River Town Landing 1920

6.0 COMMUNITY GOALS

6.1 DESCRIPTION OF THE PROCESS

A key component of Rowley's Open Space and Recreation Planning process, which began in 2010, was a re-evaluation of community goals established in the 2003 OSRP. To ensure that the goals of the updated plan would continue to reflect the interests of a broad cross-section of Rowley residents, the Open Space Committee actively sought community input for goal development through both a public survey and public meetings.



A survey designed to gather data important to Rowley residents relating to Open Space planning was distributed at Town Meeting and was available at Town Hall and the Public Library. Survey respondents provided important information about the current use of Rowley's recreation facilities and open space properties, as well as about the types of facilities residents would like to see expanded or added to the Town's resources. The survey further identified that respondents were very interested in protecting the Town's natural resources, wildlife, water supply, and open space, and confirmed that citizens are concerned that our natural environment be protected in the face of continued suburban development. Overall, the results provide an important base for understanding the current interests of the community as they relate to open space and recreation needs.

The Open Space Committee also conducted an open meeting designed both to inform the public about the open space and recreation planning process, and to obtain input for the development of goals for the 2013 OSRP. Following a short presentation, meeting participants were asked their opinions about the present open space plan and to contribute their ideas about what future goals were important. The results of the survey, which can be found in Appendix B, paralleled previous surveys, indicating a continued strong interest in open space preservation, particularly when water supply protection is involved. These community goals were incorporated into this updated OSRP.

6.2 STATEMENT OF OPEN SPACE AND RECREATION GOALS

Since the Townspeople continue to support the goals espoused in previous plans, these goals have been carried forward to this Plan Update. The following are the four key goals of the 2014 Rowley Open Space and Recreation Plan.

Goals

1. Preserve and protect the Town's water resources.
2. Preserve and protect the Town's natural resources and rural character., open space and forests.
3. Provide diverse recreation opportunities for residents of all ages and abilities.
4. Educate residents about the availability, use, and protection of the Town's open space and recreation resources.

Ninety-five percent of survey respondents reaffirmed that protection of the Town's water

resources were a top priority. While the Town recognizes that water resources are, in fact, a subset of natural resources, the Open Space Committee continues to believe that protection of water resources is of such great importance that it should be a stand-alone goal. Ninety-two percent of the respondents also expressed strong agreement that after protection of water resources, protection of natural resources, open space and forests were the second most important priority. Education about open space, natural resources and recreational opportunities in Rowley was mentioned by many respondents. It is imperative that people are aware of what we have, where to go to enjoy it, its value to the community, the need to protect our resources, and ways in which we can all work to keep these assets for future generations.

7.0 Analysis of Needs



Dodge Sawmill on the Mill River 1910

7.0 ANALYSIS OF NEEDS

This section presents the Open Space needs of the Town, which were derived from the inventory of lands of conservation and recreation interest, the goals outlined in the 2003 OSRP and carried forward in this 2014 plan, and the 2010 community survey (goals are defined in Section 6). The needs are separated into resource protection, community, and management categories. Justification for these needs is supported by the results of a community survey and discussions with Town officials. In addition, *Massachusetts Outdoors!* Statewide Comprehensive Outdoor Recreation Plan (SCORP) and Planner's Workbook, revised 2008, were referenced.

In May 2001 the Town adopted the Community Preservation Act, which raises money for open space protection, historic preservation, recreation, and affordable housing. CPA funds are generated by a 3% property tax surcharge, which is matched by the state at a rate that varies year to year. This is discussed further in section 7.3. In the 2010 community survey, respondents were asked how important each eligible CPA activity was for expenditure of CPA funds; 81% felt Open Space protection was very important or important, 71% listed Historic Preservation as very important or important. Affordable Housing was deemed important by 38% and not important by 38% of respondents. And Active Recreation was identified as very important by 14% and not important by 38% of respondents.

The 2012 Statewide Comprehensive Outdoor Recreation Plan (SCORP) listed for goals to support outdoor recreation in Massachusetts:

- Increase the availability of all types of trails for recreation
- Increase the availability of water-based recreation
- Invest in recreation and conservation areas that are close to home for short visits
- Invest in racially, economically, and age diverse neighborhoods given their projected increase in participation in outdoor recreation

These statewide goals have informed the town needs reflected in this section.

7.1 RESOURCE PROTECTION NEEDS

Protection and improvement of the quality of water resources

In the community survey conducted to establish goals for this Open Space Plan, participants unanimously agreed that protection of the Town's water supply and other water resources remains the most significant concern relating to open space issues. Concern for protection of water resources was also clear in the results of the 2000 community survey. In the recent survey, protection of the water supply and wetlands was rated as being important by 95 percent and 92 percent of respondents, respectively. Preservation and protection of the water resources also has become more critical in the face of rapid development. The Town of Rowley Wetlands Protection Bylaw (2004), the Town of Rowley Stormwater Management and Erosion Control Bylaw (2007), and the North Shore Greenscapes program have been implemented since the last OSRP to help address water resource protection concerns. One benefit of land conservation identified in the 2012 SCORP is that land conservation helps to protect the drinking water supply.

Protection of wildlife and plant habitats, wetlands and corridors

The community survey in 2000 confirmed residents' interest in protecting wildlife habitats, as 85 percent of respondents noted that preservation of these areas was very important. In the 2010 survey, 92% of respondents rated as important the conservation of forests, and 81% rated as important wetlands and wildlife habitat. Much of the land developed over the past decade was previously fields, forests, and farms, which provided important wildlife habitats. Development often fragments existing wildlife corridors. The town has worked to protect important habitat with the acquisition of large open spaces such as the Pingree Farm and Hunsley Hills properties, and more recently the Bradstreet Farm property and the 106 acre Great Swamp Brook area, which was purchased by Essex County Greenbelt. The OSC has been instrumental in identifying and promoting preservation of these parcels as open space, and in the case of Bradstreet Farm, also for community gardens, historic preservation and affordable housing.

The most recent SCORP found that the northeast region's open space resources are weighted more heavily to conservation than most other regions, rivaled only by Cape Cod and the Islands. From an ecosystem protection perspective, this pattern supports the identification of these two regions as being the most critical ecoregions in the state. The 2012 SCORP also notes that land conservation benefits ecosystem protection.

Retention of agricultural uses.

Rowley has historically been identified as an agricultural community; long-time residents conjure up a picture of the Town with farms dotting the landscape in every direction and in every corner. However, farmland is disappearing at an alarming rate, and 76% of respondents to the 2010 community survey noted that preservation of Rowley's remaining farmland is important. The Town should continue to pursue the purchase of Agricultural Preservation Restrictions on the remaining farmland.

Protection of the Town's Scenic Character

A majority of respondents to the 2010 community survey agreed that Rowley's scenic character, including its historic resources, hills, fields, marshes and views, is an irreplaceable asset that must be preserved. Again, Rowley's development over the past two decades has heightened the importance of the protection of the Town's scenic character. The town made progress in this area with the protection of 104 acres on Hunsley Hills, the second highest hill in Rowley, the completion of an Agricultural Protection Restriction on 160 acres of Pikul Farm, the purchase of the Bradstreet Farm, and the passage of the Open Space Residential Design Bylaw. Nonetheless, the Town continues to witness the disappearance of fields, farms and forests to development. Creating a scenic road bylaw would help to reduce the loss and preserve the Town's historic character by protecting stonewalls, trees and streetscapes.

7.2 COMMUNITY NEEDS

Manage and protect well fields and the drinking water supply

Rowley's municipal water department supplies nearly 1,800 customers and, as noted above under Resource Protection Needs, 92% of the respondents to the 2010 public survey felt that preservation

of the public water supply is of primary importance. Water currently is supplied by three active wells: Well #2, Well #3 and Well #5. The newest well, #5, was developed in the Pingree Farm Road area in the time since the last 2003 OSRP report, which also noted the importance of preserving and improving the water supply system.

Another recent upgrade to the water supply system is the ongoing construction of a water treatment plant. Groundbreaking for the plant, which is located adjacent to Well #5 on Pingree Farm Road, occurred in 2013, and construction is expected to be completed before the end of 2014. This plant, which was mandated by the Department of Environmental Protection, will remove manganese that naturally leaches into the groundwater. Although the manganese does not pose a health issue on its own, it does bond with the chlorine that is added for water purification purposes, reducing its effectiveness.

It is expected that with the recent addition of Well #5, the water supply should be sufficient to satisfy demand from current and expected future development for approximately the next ten years. After that point, it is likely that the Town will have to consider upgrading the distribution system by adding a new water storage tower on land reserved for that purpose within the Hunsley Hill property. At some point after the tower is constructed, the Water Department may need to consider developing additional groundwater supplies, depending on population growth and the rate of new residential and commercial development.

Develop new recreation facilities, and improve existing facilities

In the recent 2010 community survey, 92% of respondents stated that preserving land for passive recreation was important and 16% stated that preserving land for active recreation was important. Respondents specifically noted that they would like to see the following facilities in Town: hiking and bike trails (62%), canoe/kayak launch (41%), community gardens (41%), town common improvements (30%), local parks (27%), playgrounds and picnic areas (14%), tennis courts (19%), swimming areas, horse trails, athletic fields and ice skating rink (5%). The goal of developing a community garden has been addressed at the Bradstreet Farm Conservation Area, where half an acre of land has been established as a community garden. The community garden began operations in 2010, when 32 garden plots were laid out with volunteer assistance from the Agricultural Commission. Citizen requests for additional garden plots led to the Conservation Commission approving an additional twelve plots in August of that same year.

The Bradstreet Farm Project also set aside nine acres of land for the future development of active recreation facilities. The land is immediately adjacent to the playing fields of Pine Grove Elementary School and offered a good opportunity to help meet future demands for additional recreational playing fields. However, initial soil testing for the development of this land for active recreation fields determined that the drainage of the area could not support playing fields. Therefore, the Town needs to identify additional areas for development of fields to meet demand.

The need for recreation facilities will only increase as Rowley continues to grow, unless steps are taken to improve existing facilities and develop new opportunities for recreation in Town. In analyzing funding preferences for the northeast region, the SCORP revealed that support for maintaining, restoring, and improving existing facilities as a top concern for respondents.

The Bay Circuit Committee continues to work to establish a system of interconnecting trails for hiking, skiing and nature observation, but needs assistance from the Town with acquiring property

and/or obtaining permission for access from property owners. The Town worked with the Bay Circuit Committee to establish a trail right-of-way through the Bradstreet Farm to help complete the Bay Circuit Trail in Rowley. Additional work is necessary to link the trail through properties on either side of the Bradstreet Farm to complete the trail in Rowley.

The Town owns several properties with extensive hiking trails, including Hunsley Hills, Pingree Farm, and the Bradstreet Farm. Maintenance of the trails, which should be the responsibility of the Open Space Committee in conjunction with the Conservation Commission, has been spotty at best. Ongoing maintenance is necessary to keep these trails accessible over time.

The Town does have a boat launch that accommodates kayaks and canoes at the Town Landing. New efforts to inform citizens about this opportunity may increase the use of the Landing by canoers and kayakers.

Improve access to public facilities for people with disabilities

As part of this plan, all Town-owned land was inventoried for compliance with the Americans with Disabilities Act. The survey found that public buildings, such as Town Hall, the Light Department and the schools, have been renovated to accommodate the disabled. In addition, some efforts have been made to many of the Town's recreation facilities and conservation lands to better accommodate those with disabilities. For example, a handicap parking space has been located at Eiras Park, Town Landing, the Pingree Farm Road conservation area, and the Hunsley Hills Conservation area. While there is no formal parking of any type at Bradstreet Farm at this point in time, the Town is in the process of designating a handicap accessible spots adjacent to the community gardens. Where bathrooms are available, provisions must be made for handicapped users; currently there are seasonal port-a-potties at Eiras Park and the Little League field. Furthermore, while the interior of some Town conservation land is not developed, the Town should, at a minimum, provide interpretive signs accessible to disabled users at parking areas and other locations.

7.3 MANAGEMENT NEEDS

Continuation of the Open Space Committee

The 2014 Open Space Plan includes numerous recommendations that require ongoing action. The responsibility for implementation of this plan (see action steps in Section 9), falls upon a number of Town boards, commissions and committees, all of which have many responsibilities pulling them in many directions. Therefore, this plan strongly recommends that the Open Space Committee be charged with spearheading and coordinating implementation of the Plan.

Continue review and improvement of bylaws to better protect natural resources

The Town of Rowley successfully revised the Open Space Residential Design bylaw (formerly known as a cluster bylaw) in 2000. The Town also adopted a Coastal Conservation Overlay District in the Outlying District as well as a wetlands protection bylaw. However, the Coastal Conservation District was significantly reduced in size in order to garner a positive vote of Town Meeting. Although the intention was to revisit the bylaw in the future, that has not yet occurred.

Public Education

One integral part of preserving the open space and recreation assets of Rowley is public patronage, and it is critical that the public using the facilities respect and help to maintain the resources. Educating the public about open space and recreation issues, one objective of this plan, is critical to achieving that respect. Residents of the town should be informed about Rowley's resources, their unique qualities and characteristics, and the best ways to ensure that they remain protected into the future. A public education campaign providing this type of information should involve the media, schools, library, the environmental community, landowners, non-profit groups such as the Boy and Girl Scouts, local businesses, and others. It is also important to inform landowners of the value of their parcels for open space and recreational uses, and to work with them to preserve the most critical properties while also protecting the landowner's investments. Rowley cannot risk the loss of our resources simply because people are unaware of the alternatives or of how to treat what we have.

Financial Resource Development

In May 2001, the Town successfully adopted the Community Preservation Act, which provides funds for open space protection, historic preservation, and affordable housing, through a local property tax surcharge and state matching funds. Rowley opted to levy a 3% property tax surcharge. Each year in October the annual collections are matched by funds the State has collected via fees levied at the Registry of Deeds. Table 7.1 shows the collection of funds in the Town of Rowley since 2002. During the first six years of the CPC (2002-2007), the State trust fund provided a 100% match to local surcharge revenues, providing close to \$400,000 a year in funding for Rowley. The match fell between 2010 and 2013 due to a decrease in the number of Registry of Deeds transactions and an increase in the number of communities that have adopted the CPA. State matching funds are allocated through three separate rounds of funding; communities that have adopted a 3% surcharge are eligible for the second and third rounds. The match increased in 2014, reflecting an increase in transactions at the Registry of Deeds. At the end of 2013, the Rowley CPA fund totaled \$1,329,490.³⁰ In 2014, the Town used CPA funds to bond for the purchase of the 187 acre Camp Pennacook site,³¹ eliminating all funds earmarked specifically for open space protection, and therefore limiting options for funding open space purchases with CPA funds for the near future. Nonetheless, the CPA will continue to provide an important source of open space protection funding. An up-to-date inventory of all grants and other assistance available from the state and federal governments, and non-profit agencies needs to be developed, so that the CPA funds can be strategically leveraged.

³⁰ Total provided by the Office of the Treasurer/Collector, Town of Rowley

³¹ This purchase was completed after this plan was prepared, so the project is not included in this report.

Table 7.1 CPA Collections, Town of Rowley, 2002-2014				
Fiscal Year	Local Surcharge	Total Trust Fund Distribution	Percentage	Total Revenue (Local Surcharge + Distribution)
2002	\$199,992			\$199,992
2003	\$214,246	\$199,992	100%	\$414,238
2004	\$226,855	\$214,246	100%	\$441,101
2005	\$238,895	\$226,855	100%	\$465,750
2006	\$256,382	\$238,895	100%	\$495,277
2007	\$264,974	\$256,382	100%	\$521,356
2008	\$289,341	\$264,974	100%	\$554,315
2009	\$302,704	\$289,341	100%	\$592,045
2010	\$316,542	\$184,847	61.07%	\$501,389
2011	\$326,275	\$148,279	46.84%	\$474,554
2012	\$336,465	\$149,683	45.88%	\$486,148
2013	\$343,204	\$154,453	45.87%	\$497,657
2014	\$357,895	\$312,487	91.05%	\$670,382
TOTAL	\$3,673,770	\$2,640,434		\$6,314,204

(a) State distribution reflects previous year's collections
Source: Town of Rowley, Treasurer's Office

8.0 Goals and Objectives



Stickney – Dummer Sawmill on the Mill River 1890

8.0 GOALS AND OBJECTIVES

Using the goals confirmed by the 2010 public survey and described in Section 6, and the analysis of needs described in Section 7, the Open Space Committee has developed a number of objectives. Each objective is an initiative, and together they will allow the goals to be attained. This section lists the objectives identified for each of the five goals.

Goal 1: Preserve and protect the Town's water resources protection

Objective 1-1: Strictly enforce existing water resource protection regulations

Objective 1-2: Encourage safe residential practices to maintain water quality

Objective 1-3: Protect and monitor existing well fields

Objective 1-4: Partner with governmental and non-profit entities engaged in water resource

Goal 2: Preserve and protect the Town's natural resources and rural character

Objective 2-1: Maintain active Open Space Plan

Objective 2-2: Maintain active Open Space Committee

Objective 2-3: Actively protect/acquire key parcels

Objective 2-4: Educate public about importance of natural resources

Objective 2.5 : Encourage new and existing agricultural uses in Town

Objective 2-6: Review and update Master Plan as needed

Objective 2.7: Educate public about designated scenic byways

Objective 2.8: Protect key parcels that add to rural character

Goal 3: Provide diverse recreation opportunities for residents of all ages and abilities

Objective 3-1: Maintain and improve opportunities for active recreation

Objective 3-2: Maintain and improve opportunities for passive recreation

Objective 4-3: Maintain and improve opportunities for people with disabilities

Goal 4: Educate residents about the availability, use and protection of the Town's open space and recreation resources

Objective 4-1: Publicize Open Space and Recreation Plan

Objective 4-2: Hold events on Town-owned parcels

9.0 Action Steps



Bradstreet Farm, a King's Grant Property, in 2007

9.0 ACTION STEPS

Section 9.0 provides a Seven Year Action Plan, including objectives, actions, responsible parties, and potential funding sources that will allow the goals and objectives outlined in Sections 7 and 8 to be accomplished. Each action step is described in Table 9.1. The group designated to implement each objective and action should assume the lead responsibility, but assistance from other individuals and groups will likely be needed. In many cases, assisting entities have already been identified in the table.

Active and engaged Open Space and Recreation Committees are integral to the successful implementation of the Open Space and Recreation Plan. The Open Space Committee has many purposes, but one of the most critical responsibilities is to continually review the action plan to ensure that the action steps are being implemented, and to adjust the implementation schedule as necessary.

The importance of the Open Space Committee is evident in the development of this OSRP. An active Committee began the plan years ago. It is important that Rowley complete a new plan every seven years, not only so that the Town will be eligible for State grant programs, but also so that the Town is able to proactively plan for and protect its very important natural resources, open spaces, and recreational resources, and scenic and historic character. For that to happen, the Town must assemble the resources needed to implement the recommended actions required to achieve the goals and objects outlined in the Plan. A delay or lack of implementation jeopardizes the character and natural resources of the Town. Because it is unreasonable to expect all of the actions to be initiated in 2014-15, some critical actions will be implemented in later years. It is hoped that staggering the actions will allow more of them to be achieved.

9.1 LAND PROTECTION

The Seven Year Action Plan presented in Table 9.1 includes suggestions for zoning and regulatory changes, information gathering and educational programs, and networking and communication, all of which will help to protect Rowley's natural resources and open spaces. However, the most critical action is land protection.

9.1 Open Space and Recreational Action Plan Map

Table 9.1, Open Space and Recreation Action Plan, highlights the lands most important to protect. This Open Space and Recreation Plan of 2014 recommends that the following types of land, all of which have defined Rowley for centuries and continue to be important for preserving both the Town’s resource base and rural character, be the focus of acquisition efforts:

- Farmland
- Hills
- Open space corridors
- River corridors
- Potential recreation areas
- Parcels with historic significance

Not every parcel of undeveloped land can or should be protected. The OSRP of 2014 recommends that the following acquisition and evaluation criteria, which were developed by the Rowley Open Space Committee in 2003 for the previous open space plan, be used to evaluate the importance of any given parcel for protection. Land that includes one of more of the following evaluation criteria is deemed to be important for protection:

- Partially or fully of critical environmental concern
- Provides scenic views, especially from the roadside
- Hilltops
- Protects well fields or other water bodies
- Offers potential for greenbelt, wildlife corridor, and/or trail ways
- Includes riparian corridors and/or means of access to these areas
- Is used or has the potential for agriculture
- Suitable for passive and active recreational activities
- Historic significance
- Forests
- At risk of development
- Owner willing to sell, restrict by easement, or donate

As discussed in Section 5, land protection comes in a variety of forms, including outright purchase, via a Conservation Restriction that prohibits development, and through Agricultural Preservation Restrictions that eliminate development potential but leave a farm in private hands for continued agricultural uses. The Town of Rowley is one potential buyer, but other governmental entities and nonprofit organizations can also play an active role. Similarly, Town funding can be leveraged by many public and private sources.

The implementation of the plan will require actions by several different town bodies. Table 9.1 lists the groups who will have some responsibility for plan implementation, and the abbreviation used to signify each group in Table 9.2. In Table 2, all action steps for which the Open Space Committee is responsible or responsible for in partnership with another entity have been highlighted in blue.

Group	Abbreviation
Agricultural Commission	AG
Board of Health	BOH
Board of Selectmen	BOS
Conservation Commission	ConCom
Historical Commission	HC
Highway Department	HD

Merrimack Valley Planning Commission	MVPC
Open Space Committee	OSC
Planning Board	PB
Recreation Committee	RC
Water Department	WD
Zoning Review Committee	ZRC

Table 9.1 Action Plan											
		Priority Categories	Immediate, Short Term Long Term								
Objective	Action	Responsibility	Potential Funding	2014	2015	2016	2017	2018	2019	2020	
Goal 1. Preserve and Protect the Town's Water Resources											
1.1 Strictly enforce existing water resource protection regulations (Immediate)											
	1.1.1 Strictly enforce State and local Wetlands Protection Bylaws	ConCom	ConCom staff time	Ongoing							
	1.1.2 Review zoning to identify opportunities to strengthen ground water and surface water protection	ConCom; PB: ZRC	ConCom staff time								
	1.1.3 Rewrite or write new zoning bylaws to protect ground water and surface water	PB; ZRC	Planning Board Staff Time								
	1.1.4 Reinstigate efforts to certify vernal pools and track locations with ConCom	OSC	Volunteer time					Annual	Annual	Annual	
1.2 Encourage safe residential practices to maintain water quality (Immediate)											
	1.2.1 Continue semi-annual hazardous waste collection	BOS, BOH	Annual Town budget	Semi-annual							
	1.2.2 Maintain and improve marketing of Septic System replacement loan program	BOH	BOH Staff time	Ongoing							
		Priority Categories	Immediate, Short Term Long Term								
Objective	Action	Responsibility	Potential Funding	2014	2015	2016	2017	2018	2019	2020	
1.3 Protect and monitor well fields (Immediate)											

	2.1.3 Prepare 2021 OSRP	OSC	Community Preservation Fund, as needed						Begin	Complete
2.2 Maintain active Open Space Committee (Short Term)										
	2.2.1 Review OSC activity and implementation of Seven Year Action Plan	ConCom	NA	Annually						
	2.2.2 Recruit new OSC members as necessary to retain five active members at all times	ConCom, OSC	NA	As needed						
	2.2.3 OSC to meet quarterly or more often as necessary	OSC	NA	Ongoing						
		Priority Categories	Immediate, Short Term Long Term							
Objective	Action	Responsibility	Potential Funding	2014	2015	2016	2017	2018	2019	2020
2.3 Actively protect/Acquire Key Parcels (Short Term)										
	2.3.1 Review list of properties owned by BOS and others and identify those that should be protected permanently. Obtain list from ConCom and list on town website	OSC, ConCom	NA				February		February	

	4.2.5 Hold events at Bradstreet Farm, such as picnic or tour of gardens	AG, BOS, ConCom	Staff time	Annually	Annually	Annually	Annually	Annually	Annually	Annually
	4.2.6 Develop and Maintain trail maps for key parcels	OSC, ConCom	CP Fund for land purchased with fund, corporate sponsors, MVPC technical assistance			As Needed				
	4.2.7 Provide list of publicly-accessible conservation land on Town website	OSC	NA				Ongoing	Ongoing	Ongoing	Ongoing

10.0 Public Comment



Fourth of July on the Common 1910

10.0 PUBLIC COMMENT

Draft plans were distributed to the following boards on May 19, 2014:

- Rowley Board of Selectmen
- Rowley Planning Board
- Rowley Parks and Recreation Committee
- Rowley Conservation Commission
- Merrimack Valley Planning Commission

A plan was also made available in the Town Clerk's office and the Public Library for review by the following groups, each of which were also sent a letter requesting review and comment on the draft and inviting members to attend a public meeting held on May 27, 2014:

- Rowley Assessor's Office
- Rowley Board of Health
- Rowley Finance Committee
- Rowley Historical Commission
- Rowley Housing Authority
- Rowley Water Department
- Rowley Zoning Board of Appeals

An article also appeared in the newspaper alerting the general public that draft plans were available for review and that a meeting would be held on May 27, 2014 to present and discuss the draft plan.

11.0 References



Prospect Hill 1910

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Interviews - 2003

Mark Fish, Rowley Recreation Committee
Dan Burke, Rowley Youth Baseball
E. Graves, Girls' Softball.
Carol Mitchell, Girls' Softball
Tim Southall, Triton Babe Ruth Baseball
David Leavitt, Rowley Rams Baseball
Donna Hale, Triton Youth Soccer
John Murtagh, Triton Youth Soccer
Florenzo Aquilar, Triton Youth Soccer
Andrea Cooper, Massachusetts Coastal Zone Management
Fran Sculley, Past Chairwoman, Rowley Board of Health
Hank Hale, Chairman, Rowley Board of Health
Kathy Leahy, Mass Audubon: North Shore
Robert Buchsbaum, Mass Audubon: North Shore
Leigh Stoecker, West Newbury Open Space and Recreation Committee
Jim Berry, Ipswich Open Space and Recreation Plan Committee
Ed Becker, Essex County Greenbelt
Jack L. Cook, Chairman, Rowley Water Board
Wayne Castonguay, MA. Division of Marine Fisheries

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2014 Plan Update

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Alan Roscoe, Open Space Committee
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Lane Bourn, Open Space Committee
Nathaniel Lucek, Open Space Committee
Jane Thomassen, Open Space Committee
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