

TOWN OF MIDDLEBOROUGH OPEN SPACE & RECREATION PLAN



2008

**Photo of:
Morgan Property Entrance
Middleborough, Massachusetts**

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IN MEMORIAM TO ROSEMARIE CORREIA

This 2008-2013 Open Space & Recreation Plan is dedicated to Rosemarie Correia. Rosemarie was the Conservation Agent for the Middleborough Conservation Commission from 1986 to 2007, but sadly passed away on May 22, 2007. During the time from 1976 to 1986, Rosemarie assisted the Conservation Commission as their part time administrative assistant. Through these 31 years of service, Rosemarie unselfishly gave her time to the Commission and was able to balance all of that time between serving the public and protecting the resources under the Conservation Commission jurisdiction. Rosemarie loved wetlands and open space that showed through as she taught new Conservation Commission members the procedures and practices for defining a wetland as well as assisting the Commission and various subcommittees in protecting open space.

Rosemarie was very successful at acquiring grant money for the Town of Middleborough to put towards various protection and preservation endeavors. More recently, she assisted in acquiring 35 acres of the Stuart Morgan Conservation Area on Long Point Road in South Middleborough. This property is in the process of being cleaned up and trails are to be established public enjoyment.

One of her most notable contributions to the town was the acquisition of the Pratt Farm Conservation Area. Rosemarie loved going out to the Pratt Farm and enjoying all it had to offer. One of the grants she received from A.D. Makepeace was used to purchase a tractor for the Pratt Farm. She assisted in establishing the Pratt Farm Fall Festival; and yearly you could see her participating at the event with other volunteers. Her efforts to preserve and promote the Farm did not go unnoticed. Former Conservation Commission Members purchased a memorial bench, which was appropriately placed at the Pratt Farm, in an area Rosemarie loved and now others can enjoy.

Rosemarie's dedication and donation of service to the community as well as her friendship and lending ear will truly be missed by all who knew her.

Section 1 - Summary of the Open Space Plan

The Middleborough Open Space and Outdoor Recreation Plan of 2008-2013 is a result of four previous Open Space Plans, a Growth Management Policy, a Historic Preservation Plan, a Nemasket River Corridor Plan, the 2002 Master Plan, the 2004 Community Development Plan as well as past collaborations by the Conservation Commission, Natural Resources Committee, Park Department, Board of Selectmen, Planning Board and others. It has been 10 years since the last Open Space and Recreation Plan Update was completed. Similar to 1998 the Town of Middleborough faces the urgency to protect its open space and natural resources. There are several large development projects proposed on the horizon, such as the proposed Trust Acquisition of 539 acres in the north central portion of the town by the Mashpee Wampanoag Tribe for the purpose of developing a gaming and resort facility (a.k.a. the casino) as well as an industrial park in South Middleborough and 40B developments.. This impending development joined with the recent commuter rail connection to Boston; the potential for future rail expansion through Middleborough for the South Coast Rail connecting the south coast communities to Boston; and the recent infrastructure improvements to Route 44 to Plymouth make Middleborough a target for growth. Without planning, communication and public involvement, this presents a real threat to Middleborough's unique and valuable natural resources and rural landscape.

Since the last Open Space and Recreation Plan was submitted in 1998, Middleborough has completed most of the recommendations and actions highlighted in this past plan. Continued success will require a deliberate and collaborative effort by the Town of Middleborough and neighboring communities. Beyond the submission and approval of this 2008-2013 Open Space & Recreation Plan update, a team of individuals will need to be formerly organized to implement actions identified in this Plan to continue the success of the previous 10 years.

Like the 1998-2003 Open Space and Recreation Plan, the goals are similar. That is, preserving and protecting of the town's water resources; preserving and protecting the rural character of the town; sustaining agricultural land use; preserving and protecting wildlife habitats, corridors and diversity for both plants and animals; preserving and protecting historic and archeological sites; preserving and protecting natural vistas; and providing accessible and abundant opportunities for residents and visitors to enjoy outdoor recreation in Middleborough. The Action Items reflect the accomplishments of the past, opportunities of the present, as well as the anticipated needs of the future.

In 2004 77% of the town land area was undeveloped or used agriculturally. Much of this land area cannot be developed because of environmental constraints or restrictions (i.e. areas Subject to Protection under the Massachusetts Wetlands Protection Act, unsuitable soils, etc.). Through government ownership or conservation restrictions 6,684 acres was protected, of which 972 acres were privately held land (forested, agricultural or recreational open space) classified under M.G.L. Chapter 61, 61A or 61B are, therefore, not permanently protected.¹ The remaining privately held "unprotected" larger open space parcels as well as the Chapter 61 lands are vulnerable to future development if they are not preserved or protected by legal land use restrictions. Middleborough has identified over 3,000 acres of this unprotected land for permanent protection.

¹ Town of Middleborough, MA Community Development Plan dated June 7, 2004; Prepared by Larry Koff & Associates

Section 2 - Introduction

A. Statement of Purpose

In February of 2008, the Middleborough Conservation Commission applied for and received a grant from the Taunton River Watershed Campaign, which is a coalition of ten environmental and planning organizations, to update the town's expired 1998-2003 Open space and Recreation Plan with matching funds from the town. This is the fifth Open Space and Recreation Plan for the community now bridging over thirty five years of conservation planning. Continuing to update the Open Space and Recreation Plan provides the opportunity to assess where you are, where you would like to go, and how you might get there as well as allowing the town to take the next step – regional open space planning. Having a current Open Space and Recreation Plan that has been approved by the Massachusetts Division of Conservation Services (DCR) also makes Middleborough eligible for Self Help funding available through the DCR. The Self Help program was established in 1961 to assist municipal conservation commissions acquiring land for natural resource and passive outdoor recreational purposes. This program will pay for the purchase of property or for a conservation restriction (CR).

Development within Middleborough is needed to support the continually expanding population, which in turn generates economic development that supports the community tax base and ultimately supports continued and expanding local service requirements. However, commercial development must be targeted to locations determined through a consensus of the Middleborough residents, planners and officials as appropriate for modern construction and commercial land use. This vision depends on land development that is intelligently planned, of high quality and that contributes to the community as part of a strong economy and tax base. It also depends on active protection and funding for open space and historic preservation. Finally, it depends on the active and coordinated participation of the Town as a whole, through its government and its people. With the completion of the Middleborough Master Plan in 2002 and the Community Development Plan in 2004, Middleborough's leaders and citizens have clearly demonstrated that they are serious about steering the town in a direction to reflect the community's values and vision. The Open Space and Recreation Plan is another important tool that will guide the town government, community leaders and its citizens in their efforts to preserve and fund open space and cultural and historic land. With proper planning and an educated community, the paved parking lot does not have to be built on paradise.²

Middleborough has used past Open Space Plans successfully to compete for land acquisition grants, most notably for the Pratt Farm Property, Soule Farm and the Andreattola property and more recently for the Morgan Property. The community laid out their priorities of protection and recreational potential, and pursued those goals with measurable success.

B. Planning Process and Public Participation

The Middleborough Conservation Commission initiated and directed the preparation of the 2008-2013 Open Space and Recreation Plan update. With approximately three months to prepare and distribute a draft document to the town leaders, planners and interested residents for comment and acceptance, public participation was significantly restricted. Realizing that public participation is the heart of any effective planning effort, it is recommended that *yearly* internal Open Space and Recreation Plan Updates be Action Item #1 and has made public participation specific to the internal 2009 Plan update starting with the solicitation of comments and feedback from a significant portion of the Middleborough residents in the spring/summer of 2009. The ongoing internal Plan Updates will significantly reduce efforts to prepare the five-year Plan update in 2013 as well as encourage Middleborough to continually implement the proposed Action measures.

² Big Yellow Taxi by Joni Mitchell

Nover-Armstrong Associates, Inc., (NAA) an environmental consulting firm based in Carver, Massachusetts was hired to facilitate the completion of the 2008-2013 Open Space and Recreation Plan Update. NAA periodically provides professional services to the Middleborough Conservation Commission which has afforded them the opportunity to become familiar with the town's natural resources as well as its goals for protecting and preserving them.

NAA regularly met with the Conservation Commission, Ruth E. Geoffroy, Town Planner and Patricia Cassady, Conservation Agent throughout the Plan update and map development process. Both Ms. Geoffroy and Ms. Cassady, on behalf of Conservation Commission, assisted in the development of material, data and maps included in this Plan. The Planning Department and Conservation Commission funded AGI, Inc., an outside GIS Specialist to assist in the development of the required Open Space Inventory Map as well as an optional Chapter 61 Inventory Map for inclusion in the Plan Update. The final Open Space Inventory Map will ultimately be provided to MassGIS to initiate the updating of their data. Information and draft maps and documents were presented to the Conservation Commission at public meetings on 04/03/08, 05/01/08 and 05/15/08 for discussion, comment, and direction.

The draft 2008 – 2013 Open Space and Recreation Plan was distributed to the Planning Board, Board of Selectman and Southeast Regional Planning and Economic Development District (SRPEDD) for their review and comments. They understand that this Plan Update will undergo yearly internal updates going forward that includes a public involvement component.

Section 3 - Community Setting

A. Regional Context

Middleborough is the second largest town in Massachusetts with an area of 69.6 square miles of land surface, 72.3 square miles including water bodies. It is located in Plymouth County, in the southeastern corner of the state and over the past ten years has been the fastest growing region of New England. Middleborough is located 35 miles south of Boston; 22 miles north of New Bedford; and 30 miles east of Providence, Rhode Island. It is also within the labor market range of New Bedford, Fall River Taunton and Brockton. It is adjacent to Interstate 495 (with a total of 5 exits), State Routes 28, 18, 79, and 105 as well as U.S. Route 44, which connects Plymouth with Providence. Middleborough's priority development areas are along these corridors. Specifically, they include Route 28 from Exit 2 to Exit 3 off Interstate 495; Middleborough center; Route 28 south of Exit 4 off Interstate 495; the land surrounding the rotary at U.S. Route 44, and Routes 18 and 28 near Exit 5 & 6 off Interstate 495; and land north of U.S. Route 44, near Route 105 (the potential casino facility site).

The town recently completed its *Master Plan: Report on Findings and Alternatives – Revised*, prepared by the Cecil Group in 2002 and its *Community Development Plan*, prepared by Larry Koff & Associates in 2004 in an effort to establish a clear path for public policies and actions and community development over the next 20 years.

The Towns of Plympton, Bridgewater, Halifax, Raynham and Taunton bound the town on the north along the Taunton River. Lakeville bounds it on the west, through the Great Assawompset Pond system, to the south by Rochester and Wareham, and to the east by Carver. Middleborough is located within the Southeastern Regional Planning and Economic Development District (SRPEDD).

The community is located on the Middleborough commuter rail line to South Station in Boston, which runs to Lakeville right on the Lakeville/Middleborough border. The Bay Colony Railroad and Conrail

provide freight rail service and interchange traffic to the Town. Additionally, Middleborough is a member of the Greater Attleboro-Taunton Regional Authority (GATRA), which provides Dial-A-Ride service to the elderly and disabled. Bay State Commuter Lines provides commuter bus service to Boston. These transportation enhancements, the large amount of land available for development, and a relatively affordable housing market make Middleborough an attractive location.³

B. Regional Resources:

The Assawompset Pond Complex

Sharing stewardship for regionally important natural resources is a challenge to any town in Massachusetts hemmed in by town boundaries, constrained by local budgets and challenged with a variety of diverse, home rule, town governments. Middleborough shares the responsibility of hosting some of the most valuable clean drinking water supplies in southeastern Massachusetts. The Assawompset Pond Complex, which is the public surface water supply to the cities of New Bedford and Taunton, includes Assawompset, Great Quittacas, Little Quittacas, Long and Pocksha Ponds.

Although the ponds are located in Middleborough, Lakeville, Freetown and Rochester, the responsibility of managing this public surface water supply falls legislatively to the cities of New Bedford and Taunton. The City of New Bedford owns most of the land surrounding the pond system (no public access even for passive recreation is allowed). The voters of Middleborough approved the purchase of the Freitas Property, which is located at 87 Vaughan Street at the 2008 May Town Meeting. However, there are still many unprotected parcels in this area.

The Nemasket River, a Shared Resource

The pond system is not the only shared resource in Middleborough. Flowing northward from Assawompset Pond through Middleborough center to the Taunton River is the Nemasket River, a resource shared with the town of Lakeville as a town bound from the pond, upstream to the rail road tracks. The Nemasket River is part of the Native American canoe passage known as the Wampanoag Canoe Passage, which unites the south shore of Massachusetts Bay to Mount Hope Bay, in Rhode Island. The Nemasket River has long been a Middleborough planning and conservation priority. However, land uses occurring in neighboring Lakeville directly impact the river downstream.

The Taunton River, a Regional Resource

The Taunton River is the longest free-flowing coastal river in New England. Its watershed not only includes 43 communities with over 500,000 people, but 31 distinct wildlife habitats and is ranked as globally significant by The Nature Conservancy. For approximately 10 miles, the Taunton River forms the boundary between Middleborough and the neighboring towns of Bridgewater, Halifax and Raynham. The Taunton River and its tributary rivers and streams remain in remarkably wild condition, nurturing 77 species listed as rare in Massachusetts. One of those tributary rivers is the Nemasket River which originates in Middleborough. The watershed includes more unprotected, contiguous natural habitats than any other region in eastern Massachusetts. It has over 93,000 acres of core, sustaining habitat for rare species – about 27% of the watershed's total acreage. Most of the rare habitat is unprotected currently.⁴

³ Town of Middleborough Community Development Plan, dated June 7, 2004

⁴ Taunton River Watershed Alliance: People Working to Save a Great River

The significance of the Taunton River and its 562 square miles of watershed transcend town boundaries. Nine major tributaries make up the Taunton River which contributes the largest amount of freshwater to Narragansett Bay. The main stem of the Taunton River is nominated to be a United States Wild and Scenic river for its many intact habitats, historic resources and recreation potential. Presently, the upper Taunton River and its tributary rivers and streams are still a remarkable, natural, recreational and cultural resource shared regionally. In Middleborough as well as beyond its borders, there is almost no permanently protected land along the river corridor at present. Efforts to protect the river corridor should be a coordinated effort amongst several Taunton River Watershed municipalities. The Middleborough Planning Department and Conservation Commission participate in the Taunton River Stewardship Program and the Taunton River Watershed Alliance. In addition, The Wildlands Trust of Southeastern Massachusetts has designated the Taunton River a regional priority area.

The Taunton River's diverse fisheries include the Commonwealth's largest herring run in the Nemasket River. This resource however is listed as an "impaired" waterway by the Massachusetts Department of Environmental Protection. Downstream, the Taunton River is shared with the Cities of Taunton and Fall River where it enters Mount Hope Bay.

Regional Impact of the Transportation Improvements

The most significant regional impact in several decades is the new rail connection between Middleborough and Boston. With the completed highway improvements to Route 44 and the planned widening of Route 495, travel time to Boston and the metropolitan area has been significantly reduced. The 1998-2003 Open Space and Recreation Plan anticipated a demand for growth as never seen before. Relatively low land prices and large tracts of undeveloped land underscore the vulnerability of fragile natural resources. In 2005, the population in Middleborough totaled 21,198. The U.S. Census Bureau and SRPEDD projects the population will be 22,395 by 2010. In 1999, under the direction of the Executive Office of Environmental Affairs (now the Executive Office of Environmental and Energy Affairs) SRPEDD prepared a build out analysis for Middleborough to provide an estimate of what might result if all of the remaining land in the town were developed under the zoning regulations that existed then. The build out analysis identified the potential for approximately 31.4 million square feet of new commercial and industrial space as well as 10,600 new residences. Based on this analysis, the need for open space and recreation land use preservation and protection is urgent.

C. History of the Community

The Town of Middleborough is a 70+ square mile historic industrial and agricultural town located on the Nemasket River. Middleborough was originally the Native American village of Nemasket and was a major native settlement area with additional native settlements at Assawompset Pond and at Titicut. These areas were used for seasonal fishing, hunting and berry gathering. The town is one of a handful of southeastern Massachusetts communities that retained a sizable Native American population throughout the colonial period.

Middleborough was first settled by colonists, from the Plymouth Colony, who, needing more land pushed westward. No authentic date for the first settlement can be established, but it is generally agreed that white settlers first occupied the area in 1654, with one of the first groups being led by Elizabeth Poole. Gradually the settlers purchased large tracts of land from Native Americans. The Plymouth Court approved the prices for properties. The first transaction was known as the "twenty-six Men's Purchase", March 7, 1661. This purchase included the western portion of the town of Halifax (which separated from the town in 1734). Subsequent purchases added land around Assawompset Pond, Nemasket, Titicut and the whole of Lakeville (which separated in 1853).

By an act of the Colonial Legislature on June 1, 1663, the inhabitants at Nemasket belonged to the town of Plymouth, and continued under that jurisdiction until June 1, 1669, when that portion of Plymouth was incorporated under the name of (Middlebury) Middleberry, which signified that it was the middle borough half way between the Plymouth and Taunton settlements. Middleberry soon became Middleborough. (Historic names have had multiple spellings.)

Although brief, the King Philip's War, had a devastating effect on the Native American population in Middleborough, from which they never recovered. This war was a result of a clash of two cultures, Native American and European settlers, competing for the same resources. Following 1675, Native Americans were confined to the Reservation at Titicut and Muttock. Native populations dwindled and reservation lands were sold.

Agriculture (subsistence farming), lumbering and water-powered industries were the main occupations of early Euro-settlers. There was a good deal of bog iron found in Middleborough that stimulated the iron and mill industries in the region. A large self-contained complex was developed by Judge Peter Oliver, including a blast furnace, a forge, slitting mill, blacksmith, finishing and hammer shops, grist mill and fuel storage, all of which, along with a country estate, was confiscated when Oliver fled the Revolution as a loyalist. It was this confiscation of Judge Oliver's foundry during the Revolution, which began the shift of industrial activity from Muttock, south to the Four Corners, now Middleborough Center.

Although the iron industry dominated the Federal period, Middleborough also produced many other wares. By 1837 there were two forges, two cotton mills, three shovel makers, an air cupola furnace and factories for the manufacture of nails, shoes, boxes and casks, and straw bonnets. Immigrant populations of Swedes, Italians, Canadians and Armenians followed as industrial jobs became available.

The early 19th century saw the beginning of the development of Four Corners as the main commercial and industrial center of the town. The Peirce Store, built in 1819 on the Main Street, was the first substantial commercial activity in the Town. The beginnings of the fashionable residential area along Main Street also occurred during this time.

The introduction of the railroad in 1846 resulted in a gradual movement of industry westward along Center Street with a second industrial node gradually developing at Everett Square. The location of textile mills at the Lower and Upper Works in the nineteenth century, prevented the decline of the riverfront industrial node and contributed to the commercial development of the downtown area. The new Town Hall was built in the Four Corners area in 1873.

After the Civil War, the town became a rail center, attracting industrial development, lumbering, box mills, straw-hat factories, varnish works, shoe factories, and brickyards. Much later, the well-known Maxim Motor Company, which in 1914 was located on Wareham St., produced fire trucks until 1990.

Through the 1960s Middleborough was a vibrant agricultural/manufacturing center. At one time there were as many as 30 dairies operating in town as well as orchards and vegetable farms. In 1966, Ocean Spray Cranberries Inc. developed a cranberry processing plant in Middleborough. The corporate headquarters for Ocean Spray is located straddling the Middleborough/Lakeville line today.

Several shoe factories, printers, photographic print makers, grain mills and small industries flourished through the 1960's. The domestic shoe industry was lost to overseas labor markets. Today Middleborough is home to emerging high-tech industries developing in the Development Opportunities District in North Middleborough.

Archeological Resources:

Middleborough's archeological resources are extensive and include some of the most significantly known prehistoric sites of occupation by early man or native people in Massachusetts and the northeastern United States.

Archeological investigations by the Massachusetts Archeological Society and others over the past 60 years have discovered and recorded hundreds of sites where Native American artifacts have been found in Middleborough. Three major Native American village sites known as "Namasket" (Nemasket), "Titicut" and "Wapanucket" have been scientifically identified and recorded.

Wapanucket is located on the north shore of Assawompset Pond and is listed on the National Register of Historic Places. Two very rare Paleo-Indian sites (about 9,000 years old) and an archaic village component including post mold patterns of dwelling houses and ceremonial lodges were found here. Thousands of artifacts were also found; many of which are on display at the Robbins Museum of Archeology on Jackson Street.

Titicut is located on the Taunton River in North Middleborough. It is the largest known Native American settlement in the town, extending three miles on both sides of the Taunton River (Middleborough and Bridgewater). Excavations at Fort Hill uncovered the post molds (circa 1640) of a Native American fort. Many investigations conducted in this area have revealed Native American burial sites. This area was continually occupied by Native Americans and designated as an "Indian Reservation" until about 1750.

Namasket (Nemasket) meaning "Place of Fish" was originally a broader term referring to all of Middleborough and Lakeville. Later the term was narrowed to indicate downtown Middleborough from the Oliver Mill area to Pratt Farm, including the Wading Place and the central Nemasket River Valley. There have been limited archeological investigations in this area. The Thomas S. Peirce Playground is the known location of a 1670 English fortification used by settlers for six weeks during the King Philip's War in 1675.

Historic Resources:

The Middleborough Historic Commission adopted a preservation strategy in 1985 that recommended establishing historic districts at Titicut Green, Eddyville/Waterville, Middleborough Town Center, Rock Village and the Green. The Commission also maintains an extensive inventory of historic sites and buildings. The Massachusetts Archeological Society maintains an inventory of prehistoric sites at the Robbins Museum in Middleborough. Both of those sources can provide detailed descriptions of historical structures and places.

Some of the sites that are of significant concern in open space planning include:

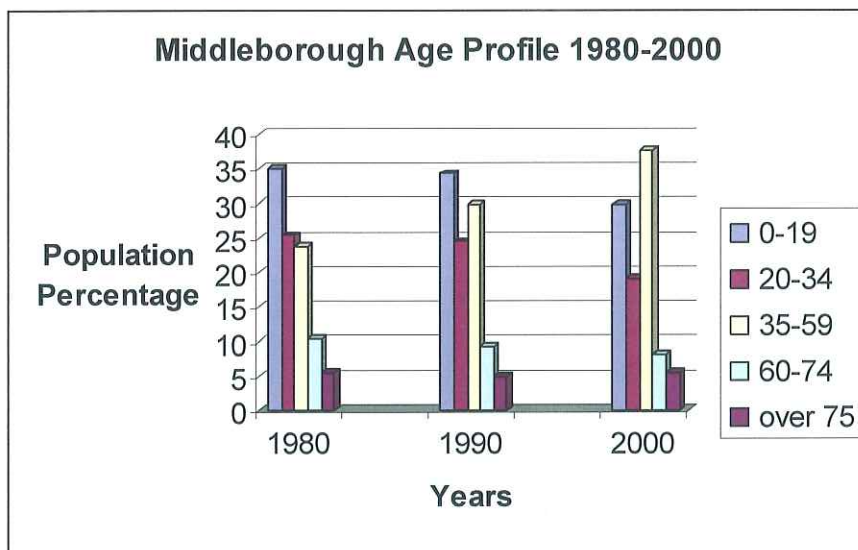
- Fort Hill, Sentinel Rock and Native American fishing weirs.
- Titicut Green including Pratt Free School, Pratt House, Gurney House, Congregational Church, Issac Backus House.
- Oliver Mill, Peter Oliver House, General Abiel Washburn House.
- Murdock St. mill foundation in the Nemasket River.
- Eddyville; village in East Middleborough including the Eddy Homestead.
- Smallpox cemeteries.
- Pratt Farm including, Upper and Lower Native American Paths.
- The Wading Place on the Nemasket River.

- “Hand Rock” on Barden Hill.
- Daniel’s Island on the northerly shore of Tispaquin Pond.
- Wapanucket Native American settlement (Twelve Mens Purchase).
- Charles Stratton and Lavinia Warren, “Tom Thumb” House.
- Site of colonial fort 1670, (Peirce Playground).
- The Great Rock, off Rock St., legendary Native American ceremonial site.

D. Population Characteristics

The population of the Town of Middleborough has grown 11% from 1990 to 2000, according to SRPEDD (Southeastern Regional Planning and Economic Development District) and the Town Clerk’s figures. In 1990, the population was calculated to be 17,867 and has grown to a calculated population of 19,941 as reported in 2000. Despite growth, Middleborough remains one of the less densely populated towns in Southeastern Massachusetts with 276.3 persons per square mile.⁵

FIGURE 3.1 Middleborough Age Profile 1980-2000



Evaluation of census information and SRPEDD predictions displayed in the figure above reveals the population of Middleborough is aging. The percentage of youth, defined as age group 0-19, has decreased over five percent from 1980-2000, a trend SRPEDD predicts will continue with a decrease of over nine percent by the year 2020. The population aged 55 and over made up eighteen percent of the population in the year 2000, with eight percent aged 60-75. The median age was 35.6 years, with more than sixty five percent of the population in the 20-64 age groups. The development of the Oak Point senior mobile home development is substantially changing the demographics of the town, which must be taken into account in planning for services in the future. This information is most useful when anticipating future housing and outdoor recreational needs.

There isn't more recent info???

⁵ Southeastern Regional Planning and Economic Development District (SRPEDD), Town of Middleboro, MA; U.S. Census Information; 2000.

Population Growth Predictions

The population in Middleborough has steadily increased over the past thirty years, with a total increase of 47% between 1970 and 2000. This District predicted a population of 22,395 by the year 2010, 24,856 by the year 2020 and 27,314 by the year 2030 (a 21% increase), over twenty years.⁶

According to a build-out study conducted in 1999 by the Massachusetts Executive Office of Energy and Environmental Affairs (EOEA) and described briefly in the next section of this plan, if all the remaining land in town was developed under existing zoning regulations, the population of Middleborough could reach 50,220 persons at build-out.

Economic Characteristics

According to the 2000 census, the median family income in 1999 was \$52,755. This compares with \$46,947 median family income for the Commonwealth of Massachusetts during the same time. The per capita income was \$14,165; the Commonwealth per capita was \$17,224. The percent of the population living below the poverty level in 2000 was 3.7, considerably lower than the state average of 8.9. Although the per capita income is a little less than the state average, there are far fewer persons in Middleborough living below the poverty level than the state average.

Race and Ethnicity

According to the 2000 census, Whites made up 96.1 percent of the population; 1.2% were Black; 0.7% Hispanic; 0.4% Asian and 0.4% Native American. Ancestry was reported to be predominantly Irish, English and Italian.

Special Populations

Within the working age population (age 16-64) 309 persons identified themselves as mobility limited. 1,088 persons had some work disability and 436 were prevented from working because of a disability. Amongst persons over 65 years, 231 identified themselves as having a self care disability. These are all non-institutionalized persons with disabilities.⁷

Working in collaboration with the Greater Attleboro Transit Regional Authority (GATRA), the Middleborough Council on Aging provides transportation services for elderly and handicapped residents. The Council also provides a wide range of recreational activities and education programs for special populations. The Leonard E. Simmons Center, off Plymouth Street, serves as a multi-service center for the elderly with beautiful grounds, outdoor walkways, sitting areas and gardens. Dancing, painting and ceramics classes are also offered.

E. Growth and Development Patterns

Middleborough is the second largest town in Massachusetts by area, however it remains one of the least densely populated in southeastern portion of the state. In the local region, i.e. the towns surrounding Middleborough, the population grew from slightly more than 400,000 residents in 1990 to more than 435,000 residents in 1999, an increase of 35,226 or an annual change of 1% per year. The balance of the Southeast Regional Planning (SRPEDD) area, which includes mostly communities south and west of Middleborough, saw its aggregate population increase by 3.6%, with a 1999-estimated population of

⁶ U.S. Census Information.

⁷ Middleborough Master Plan: Report on Findings and Alternatives (2002)

556,943. Middleborough is an agricultural, residential and industrial community settled in five distinct village areas separated by wetlands and rivers. About a third of the area is made up of wetland or surface water.

North Middleborough

The community of North Middleborough is located north of Route 44 and west of the Nemasket River. Within this area are the wetlands of Purchase, Poquoy and Puddingshear Brooks as well as the bordering wetlands of the Taunton and Nemasket Rivers. Today, this region of town is the location of three comprehensively planned business/industrial parks within Town's Development Opportunities Overlay District. (See zoning.)

Warrentown - Eddyville - White Oak Island Area

This area is north of Route 44 and east of the Nemasket River. Great Cedar, Little Cedar, Beaverdam and Meetinghouse swamps are all located within this region. Several dairy farms dominated the land use in this area, however, only one remains active today. There are still large open tracts of farmland and relic farm fields as well as vegetable and hay producing farms. The historic Soule Farm was purchased by the town and is operated as an education/farm center. Three other historic sites in this area are the Eddy Homestead in Eddyville, Tom Thumb's Homestead in Warrentown, and the old small pox cemetery at the corner of Soule and Brook Streets.

Middleborough Center, historically known as Four Corners

South of Route 44, to Route 495 and between Short and Tispaquin Streets and the town line to the west lies the commercial heart of the town. The Nemasket River flows through this section of town that also includes the Thomas S. Peirce Playground and recreational complex, the High School, Memorial Junior High School, Mayflower and Burkland Schools, the Pratt Farm Conservation Area, Oliver Mill Park, Thomas Memorial Park and many historic sites.

Waterville - Thomastown - Weweantic Area

Along the mid-east border, east of Tispaquin and Short Streets, is the center of the cranberry industry in Middleborough. It also contains Woods Pond, Tispaquin Pond, and the wetlands bordering the Weweantic River.

Rock Village - South Middleborough - Wapanucket Area

South of Route 495 are the villages of Rock Village and South Middleborough, each with their own distinct historic centers and identity. West of Rock Village is the area known as Wapanucket featuring the Assawompset Pond complex. Today New Bedford Water Department property, small farms, new residential neighborhoods and large tracts of land, particularly in the Black Brook Area dominate the area.

Infrastructure

The transportation network linking Middleborough to Boston, Providence and Cape Cod is extensive, modern and convenient. Interstate 495, also known as the (Boston-Worcester) metropolitan outer loop, runs the length of Middleborough, northwest to southeast, with Middleborough enjoying four interchanges within its boundaries. It is a principle route to routes 24 and the Southeast Expressway, and to the Massachusetts Turnpike, major state arteries. Route 44 running east west through the north of Middleborough connects Route 3 in Plymouth and Route 495 in Middleborough. The newly completed relocation of a 7-mile section of route 44 provides high-speed road to Plymouth and Route 3. Recently

completed rail lines now connect Middleborough to South Station in Boston and there is a scheduled widening of Route 24, from a four to six lane limited access highway.

Middleborough operates its own municipal gas and electric department providing electricity and gas to residents at rates well below the commercial utility rates in the region.

Long-term development patterns – zoning

Middleborough has eight distinctive zoning district designations: Residence A (RA), Residence B (RB), Residence Rural (RR), Business (B), Industrial (I), General Use (GU) and General Use (GU-X). In addition, it also has five overlay district designations, superimposed over the zoning districts. Those overlay districts are Development Opportunities District, Open Space and Resource Preservation Development District, Flood Plain District, Water Resources Protection District, and Adult Entertainment District. The purpose of this multi-layered zoning system is to protect valuable fragile natural resources while encouraging economic growth and development in appropriate places. In 1996, Middleborough amended its Zoning By-laws to include The Open Space and Resource Preservation Development District which allows for an alternative to conventional subdivision within RA, RR, GU and GX Districts and the Development Opportunities District which covers portions of the RA and GU districts and provides for larger scale commercial and industrial development opportunities. The use regulations are detailed in the Zoning By-laws, available at the Town Hall. A copy of the zoning map follows.

Build-Out Potential

In 1999, SRPEDD, under the direction of the Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA), conducted a build out analysis for the Town in order to estimate the possible results if all the remaining land in town was developed under existing zoning regulations. The build out analysis identifies the potential for approximately 31.4 million square feet of new commercial and industrial space providing approximately 72,042 new jobs. An estimated total of 10,588 dwelling units could be created, 95% of which would be single family. Given the average household size of 2.86, the population could grow by an additional 30,280 residents or a total of 30,280 residents resulting in a total population of 50,220 persons at build-out.

This analysis does not give any indication of the rate of development or the time frame for reaching full build-out. However, it is likely that residential zoning districts will reach build-out sooner than commercial and industrial districts.

Due to the complexity of Middleboro's zoning and the lack of an official zoning map, build-out analysis was based upon a close approximation of the underlying zoning districts and the Development Overlay District (DOD). Although major environmental constraints (i.e. wetlands and flood zones) were accounted for, infrastructure limitations which may impact the potential for commercial and residential development in some areas of town were largely overlooked.

An alternative build-out scenario was considered by the town, taking into account the potential for development beyond current zoning regulations. The resulting build-out analysis estimated if 25% of all new development follows recent development trends and is done under Chapter 40B and each project provides 25% affordable units with a density bonus of 400%, then the total dwelling units could reach 25,000 with a population of 72,900 at build-out.

Developable Residential Lots as of 1998	
potential subdividable land (14,182 acres)	7,466 new units
existing subdivided lots	911 vacant lots
potential "new" dwelling units	8,377 potential new units
General Use District Developable Lots	
potential subdividable land (1,788 acres)	
1,076 single family units or (2,116 multi-family units)	
Lots from Land designated "Undevelopable" (provided with infrastructure, i.e. roads)	
potential subdividable land (3,403 acres)	1,904 potential new units
existing subdivided lots	331 vacant lots
potential new dwelling units	2,235 potential new units

8

This build-out report identified several areas in town with high potential for new development. They include: Route 44 and Route 18 Rotary; Route 44 – Everett Street to Plymouth Street; Route 44 – Everett Street intersection; Rock Village; Wareham Street; South Middleboro; DOD South and Oak Point Village. The potentially high growth areas were predicted to be the extreme northern section of town, the extreme eastern section (despite wetlands), Rock Village and just outside of the downtown area.

Section 4 - Environmental Inventory and Analysis

A. Geology, Soils and Topography

Middleborough is located within the Seaboard Lowlands, characterized by generally low relief, no more than 100-foot changes in elevation throughout the town. Barden Hill, at 191 feet above sea level, is the highest feature in town. The landscape is entirely the result of glacial deposition. This is expressed in a combination of flat outwash plains, poorly drained wetlands, and hummocky kettle and knob terrain with pond features.

New England was shaped about fourteen thousand years ago, with the final advance and melt-back of the Wisconsin glaciers at the end of the glacial period. Locally, it was the Buzzards Bay Lobe that formed most topographical features of southeastern Massachusetts. Middleborough is located entirely within this region.

Rock, dirt and debris were picked up and carried within the advancing ice and then deposited as the great ice masses melted. This deposition is called glacial drift and covers the bedrock with mineral material, from particles as small as silt and clay, to particles as large as huge boulders. The terminus of the glacial lobe was just southeast of Middleborough. Large deposits of unconsolidated rock and soil were plowed forward at the tip of the lobe and left behind in this region. These deposits, known as glacial till, contain

⁸ This information needs updating.

an unsorted mix of boulders of all sizes and various origins. The topographic feature of these deposits is called ground moraine. Ground moraine follows the contour of the underlying bedrock and occurs in Middleborough in sharply delineated upland areas, above low land areas of sorted, layered drift.

Soil and rock materials carried in melt water, or suspended in water within huge melt-water puddles, were deposited in layers. Heavier materials dropped from suspension first and the lightest materials, last. These deposits are generally sorted and stratified, or "sifted". When mineral materials are deposited by standing water over a long period of time, the results are thick layers of fine sands and clays near the surface known as lacustrine deposits. They are impervious and hold water at the surface.

Following the end of the ice period, a glacial lake nearly two miles wide existed in northwest Middleborough into Bridgewater. What is now the Taunton River eventually drained that lake and, what was left behind were vast, flat, clay deposits. These deposits were utilized in modern times by the clay-brick industry.

Not all of the melt water puddled. Run-off water carried and deposited materials, which are called glacio-fluvial deposits. They are also generally stratified and take the shape of the outwash plains and stream channels, known as eskers. Eskers are represented on the land as stratified ridges and there are several in Middleborough. Ice blocks carried in moving water were also deposited on the landscape creating unique landforms within the landforms. Surrounded by till deposits, they became the pock marked features known as kettle-hole ponds. Woods Pond and Tispaquin Pond are both small kettle-hole ponds. The wide distribution of kettle and knob landforms indicates that much of Middleborough's landscape is a result of local ice blocks that broke away from the terminus of the glacial lobe.

The great ponds which border Middleborough and Lakeville - Assawompset, Pocksha, Great Quittacas, Little Quittacas and Long Pond are believed to be remnants of melted ice blocks whose drainage was blocked by the terminal moraine of the glacier. These ponds are drained northward toward the low-lying Taunton River Basin via the Nemasket River. Sorted sands and gravels deposited in piles and shaped by moving ice and water into conical hills is called a kames. Barden Hill is an example of a kame.

Understanding the morphology of the local geology is important in an Open Space and Recreation Plan because the type and distribution of glacial deposits directly relates to the availability of ground water and the protective measures required. Outwash areas of sand and gravel are excellent recharge and ground water retention areas. Ninety-five percent of Middleborough's ground water is found in these deposits. They are also highly permeable which makes ground water within these soils susceptible to pollution. On the other hand, lacustrine deposits of fine silts and clays have many limitations for development because they drain so poorly. Glacial till, expressed in stony soils and hard pan, is also a poor candidate for ground water accessibility and presents building limitations.

Soils

The soils of an area depend on the (1) parent rock, (2) topographic relief, (3) climate, (4) living organisms, (5) the activity of man and (6) time. In Middleborough the parent rock material derives from glacial drift, bedrock particles carried in glacial ice from the north. The type of vegetation, habitat and other biota are determined by the associated, underlying soils. The soils above that layer provide for good vegetative growth, and associated availability of water can support some of the best habitat. Silty, till, muck and peat soils are found throughout the Town and can support wetland habitats which are the rarest of valuable habitats.

The natural soil conditions define the potential for everything from biodiversity to human construction. The Natural Resources Conservation Services (NRCS; U. S. Department of Agriculture) identify soil

types and categorize them according to their qualities. The principal soil types of concern within Middleborough are related to its agriculture, its wetlands, and water supplies for the Town and the region. 'Prime farmland' soils as identified by the NRCS, exist in key locations in the Town and to attest to its tradition of agriculture. In Middleborough, the most prevalent prime farmland soils are called Merrimac soils. These soils can be found through the northern two-thirds of the town, but are concentrated within the center of Middleborough as depicted on Figure 4.1 *Town of Middleborough Soil Associations*. The Merrimac-Raynham-Saco association consists of broad, flat, low, wet areas interspersed with moderately sloping, well-drained areas.⁹

As noted in the most recent Town Open Space and Recreation Plan (1998) the type and distribution of glacial deposits relates to the availability of ground water. In addition, if the deposited soils above the water protect it from surface impacts, this determines the groundwater's sensitivity to pollution. The Hinckley soils are the principal soils of concern, composed of deep sand and gravel deposits. The majority of the Town's public water supply wells are found in these soil types, which lie within the central portion of the community. The Hinckley-Merrimac-Muck Association consists of broad, low ridges; nearly level plains and terraces; and knobby, irregular ridges. Intermingled with these are extensive low, flat wet areas.¹⁰

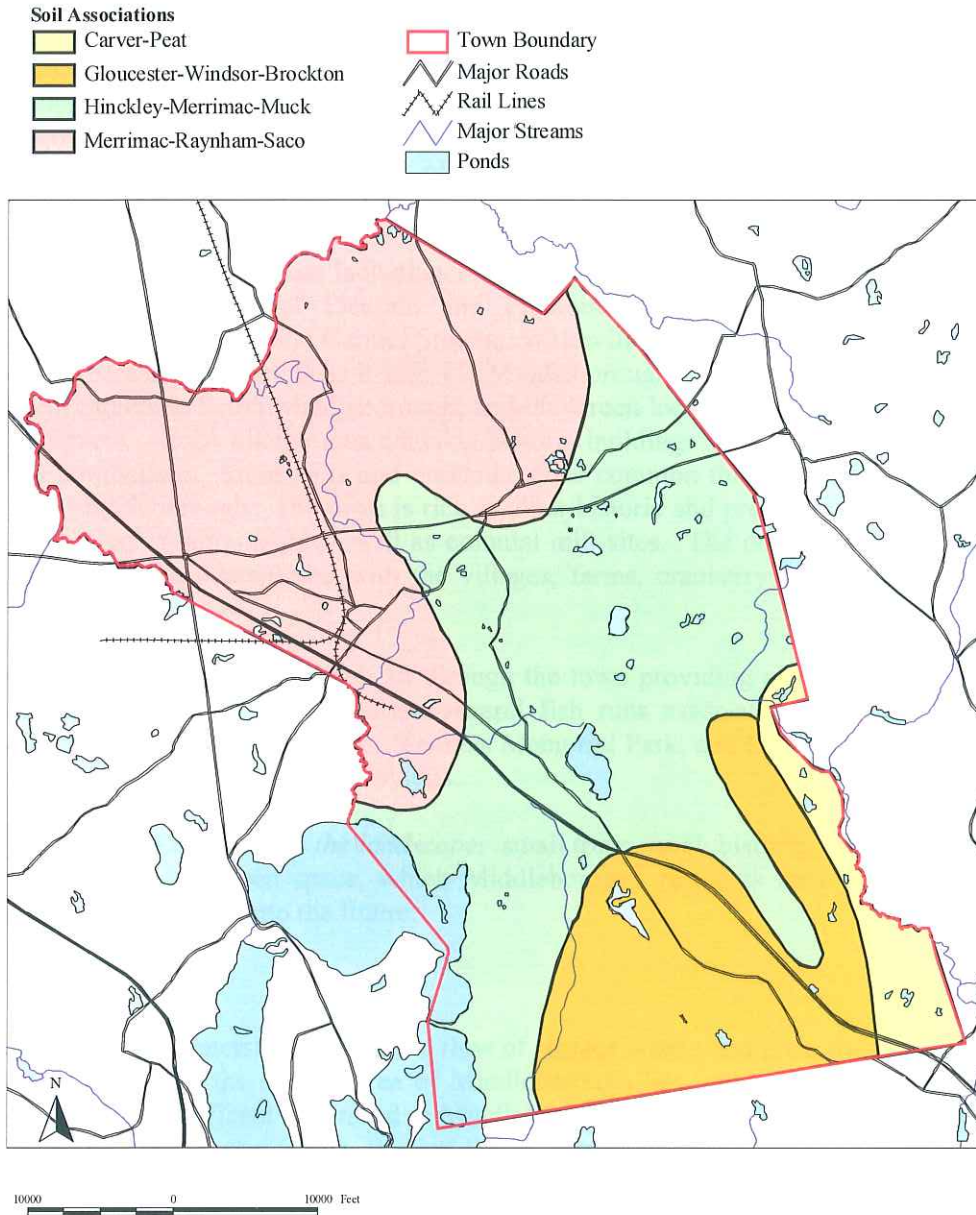
The Carver – Peat Association soils are found predominantly in the southeastern side of Middleborough. This association consists of a large, nearly level, sandy outwash plain that is pitted with kettle holes and is dissected by southward flowing streams. Carver soils are considered poor for agriculture but support mostly wooded areas that provide valued upland habitat.

⁹ U.S.D.A Soil Conservation Service Soil Survey for Plymouth County, 1969

¹⁰ U.S.D.A Soil Conservation Service Soil Survey for Plymouth County, 1969

The Gloucester-Windsor-Brockton Association, found along the southern fourth of Middleborough consists of rolling hills interspersed with plains and low wet areas. Most of the acreage is wooded.

Town of Middleborough Soil Associations



Source: Massachusetts Executive Office of Environmental Affairs, MassGIS: major roads, trains, MBTA, major streams, hydrology. Town of Middleborough Open Space and Recreation Plan 1987, Figure 2 Soil Associations (U.S.D.A. Soil Conservation Service soil survey data).

FIGURE 4.1 Town of Middleborough Soil Associations

B. Landscape Character

Middleborough's visual character, one of its most endearing features, is a result of historic land uses. It has a compact central business district that is entered through a shaded Main Street lined with historic homes, the Middleborough Green, Town Hall and large white church, typical of small New England towns. The town includes vistas and landscape areas that provide a unique and pleasant experience for the public.

Middleborough evolved as numerous small clusters of "villages" or hamlets at the crossroads of a webbed network of roads. Some of these villages were substantial and became concentrations for a mixture of commercial, residential and rural uses. Others were merely a convenient concentration of farms and associated residences. Each had its own name, and its history can be traced through old maps, tax rolls, and school districts. The remnants of this scattered pattern of clustered settlements are visible in many locations today, although their identity has often become obscured by time and the imposition of subsequent development.

There are several distinct village areas including Titicut Green (also called North Middleborough Green) centered upon the intersection of Pleasant and Plymouth Streets; Eddyville centered upon the intersections of Plympton, Cedar, and Carmel Streets; Waterville located along Plymouth Street between Carmel and Wall Streets south of U.S. Route 44; Middleborough Center; Rock Village located along Miller and Smith Streets in South Middleborough; and the Green located at the intersection of East Main and Plymouth Streets. Each village area contains historic buildings such as churches and schools, old cemeteries and farmhouses. Stonewalls and orchards, once common throughout New England still dot the landscape in Middleborough. The town is rich in other historic and prehistoric sites including Native American villages and encampments as well as colonial mill sites. The outlying areas include "newer" residential neighborhoods, interspersed with the villages, farms, cranberry bogs, woodlands and water resources.

The great swamps, ponds and streams run all through the town providing abundant wildlife habitat and the opportunity to observe nature. There are several fish runs associated with the Nemasket River including ladders at the Assawompset Dam, Thomas Memorial Park, and Oliver Mill Park. Hunting and fishing are common passive recreational activities.

It is this very character, *expressed on the landscape*: small town, rural, historic, village-like, agricultural, with ample privately owned open space, which Middleborough residents have identified as the most important value to be preserved into the future.

C. Water Resources

The three existing surface watersheds define the flow of surface waters and groundwater flow through the town. The vast majority of the surface area of Middleborough lies within the Taunton River drainage basin which is the most significant watershed in Middleborough. Tributary streams include Black Brook, Fall Brook, Whetstone and Raven Brook, Bartlett Brook, Purchade Brook, Otis Pratt and Poquoy Brook, and the important Nemasket River. The Nemasket River, a tributary of the 44 mile long Taunton River, flows northward from its source at the Assawompset Pond complex, through the center and north of town. The Nemasket River has been the focus of previous Open Space and Recreation Plans and conservation efforts because it is rich in archeological sites, historic sites, scenic vistas, wildlife habitat and recreational opportunity. It is being viewed in the larger context of the Taunton River Watershed, with regional interest and efforts along that corridor. The Taunton River forms the boundary between Bridgewater and Middleborough and Raynham and Middleborough. Regionally, Taunton River basin covers 562 square miles and is surprisingly undeveloped. Yet there is almost no permanently protected land within the

corridor. This watershed is one of the most important from the standpoint of regional ecological and cultural values.

The remaining two watersheds within Middleborough's corporate limits are the Weweantic River watershed which covers a significant portion of the Rocky Gutter State lands and includes a majority of the town's cranberry bogs and the Sippican River watershed which collects runoff from the southernmost portions of the town. Both are part of the Buzzards Bay Drainage Basin.

FIGURE 4.2 Town of Middleborough Surface Watersheds

Town of Middleborough Surface Watersheds



10000 0 10000 Feet

Source: Massachusetts Executive Office of Environmental Affairs, MassGIS: subbasins (watersheds), major streams, hydrology. Town of Middleborough Open Space and Recreation Plan 1987, Figure 4 Surface Watersheds.

Middleborough includes 2.7 square miles of surface water bodies. After adding wetland and bog areas, between 30 to 40 percent of Middleborough's surface, about 25 square miles, is covered by water resources. Below are summary descriptions of the inter-related and major water systems. The descriptions have been taken from the Middleborough Master Plan: Report on Findings and Alternatives dated March 23, 2001 and revised February 11, 2002.

Running eventually to the Taunton River, the Assawompset Great Pond system is one of the most important regional water resource areas in the State. Great Quittacus, Little Quittacus, Assawompset, Pocksha and Long Ponds are all part of the Assawompset Great Pond complex. This is the largest natural inland body of water in the state. The ponds are part of an interconnected system of resources in the Taunton River Watershed connected to the Taunton River by the Nemasket River. It lies within Middleborough, Lakeville, Freetown and Rochester, but is actually part of a regional surface drinking water supply for the municipalities of New Bedford, Taunton, Acushnet, Fairhaven, and the City of Fall River (secondary source). It does not provide any water service to Middleborough. The "safe yield" of the ponds for drinking water supplies is 27.5 million gallons per day.

The City of New Bedford actually owns most of the watershed lands adjacent to the ponds. The City of New Bedford owns about 1,470 acres of land in Middleborough, out of a total of about 8,000 acres around Assawompset and Pocksha ponds. Taunton owns about 11 acres in Middleborough off Lakeside Avenue for water supply protection. However, while Assawompset has approximately two-thirds of its shoreline protected, Pocksha Pond has only about one-third of its shoreline preserved from development. The land and water resources here deserve protection and management for several reasons: water supply, natural resources, cultural resources, and passive recreation. Consequently, the management of this system requires a comprehensive plan. A summary of the access and resource issues is as follows:

Access - Under a memorandum of understanding, Rochester has access on the city watershed lands to the ponds for passive recreation. However, Middleborough residents **do not** have access on the city lands. There is physical access to the ponds through the municipal right-of-way, Long Point Road (town scenic roads) at Pocksha Pond, and across the Morgan property on Pocksha Pond.

Natural resources - The connection between this system and the other water resources within the Taunton River watershed are very important, not only to water supply, but also to natural resource management. Although the immediate watershed of the pond complex is fairly small within Middleborough, further east, the Black Brook provides additional watershed areas that flow into the pond system. An unusual nature of the pond system is that the southern end, Great Quitticus Pond, can also flow to the Snipatuit and discharge to the Buzzards Bay watershed. In addition, fish populations using the river system for migration and spawning. The system is reportedly the most prolific herring run in the state. However, it can be affected by the flows from the pond complex as it is controlled for water supplies. Property around Pocksha Pond are bald eagle nesting areas and the lands around the pond complex have other large bird nesting species such as the Red-Shouldered Hawk, Broad-Winged Hawk, Osprey, and Barred Owl. The State Division of Fisheries and Wildlife releases rehabilitated bald eagles at the Pocksha Pond causeway. This suggests this area is important breeding and feeding habitat for these species. However, these species require large undisturbed areas for their habitat and could be impacted by water supply projects.

The cities of New Bedford and Taunton have a legal requirement to establish a management plan for the pond complex that takes into account the natural resource and water supply issues. However, formulation of a proper management plan will require the input of the host communities as well as the regional conservation and planning efforts that have been ongoing. Intergovernmental efforts have included informal discussions between the cities managing the water supply and the local communities. More

active management for natural resources and water systems have come under the umbrella of the Taunton River Stewardship Program, which includes participation from Middleborough, Raynham, Bridgewater, Halifax, West Bridgewater, SRPEDD, the State Division of Fisheries and Wildlife, the National Parks Service, The Wildlands Trust of Southeastern Massachusetts, Massachusetts Audubon Society, and the Taunton River Watershed Alliance.

Tispaquin Pond

Lying almost within the geographic center of Middleborough, Tispaquin Pond offers a variety of natural resource conditions and recreational amenities. The pond is part of the Fall Brook watershed eventually draining to the Nemasket River. The multi-use nature of the surrounding lands is as follows (acreages as listed in the 1998 Open Space Plan):

- There are three camps around the shoreline: Camp Avoda with about 49 acres, Camp Yomecas with about 32 acres, and Camp Tispaquin with about 32 acres, which are private, and YMCA camps.
- Surrounding the pond on the eastern side is the Fred C. Weston Memorial Park of about 311 acres. Although identified as a park, the land is actually managed by the Town's Conservation Commission.
- The Town has a well site property off Wareham Street of about 22 acres.
- About one third of the shoreline, outside of the above, is held in private hands.

In addition, the private open space lands connect Tispaquin Pond to the Rocky Gutter Wildlife Refuge. Consequently, this Great pond presents the Town with a multi-purpose management need.

Nemasket River

Flowing from Assawompset Pond, the Nemasket defines Middleborough's municipal boundary with Lakeville up to the former Ocean Spray Cranberry processing plant where the river turns in and flows through the center of Middleborough. Passing just south of the Downtown (Four Corners) area, the river has a related, but not closely tied, connection to the downtown social and business activities. The Gas and Electric building and the Department of Public Works building are sited on either side of the river just south of the Downtown district. To truly become an integrated part of the downtown activities, either of the public facilities could be so that they could be replaced with a formal public park and an access point to help create the connection to the downtown area.

Taunton River

The Taunton River flows generally west along the boundary between Middleborough and Bridgewater, Halifax and Raynham before flowing south through Taunton and Fall River eventually into Mount Hope Bay. Its watershed is 562 square miles and the river corridor is 44 miles long. There are four public properties on its banks in Middleborough. These include:

- the Division of Fish and Wildlife, (DFW) a 72-acre Wildlife Management Area off River Street;
- the Bradshaw property of 57 acres owned by the Town;
- the Bally property of 13 acres owned by DFW;

- The Department of Environmental Management's 13-acre Slein property near Vernon Street.

However, this is very limited for permanently protected land along the river corridor. The Wildlands Trust of Southeastern Massachusetts (September 1998) believes this stems in a large part from the lack of recreational access and use of the river. However, by increasing public access the river system's carrying capacity (ability to accept impacts and still retain its condition and number of resources) is then impacted. The Taunton River Stewardship Program (TRSP) and the Taunton River Watershed Alliance are groups with the established purpose of protecting the resource for its natural, cultural and recreational values. The Taunton River Watershed Alliance has also stated its concern that the Taunton River watershed is the most unprotected ecosystem in Massachusetts. The TRSP has noted the following:

- The river is of statewide importance to conservation goals because of its relatively undisturbed nature and its resources. However, full protection would be a highly ambitious effort.
- The Taunton River Greenway was listed among the top three priorities as part of the State Department of Environmental Management's Greenways and Trails workshop.
- The river is one of the longest free-flowing rivers, without dams or impoundments.

A 1997 natural resource inventory identified over 114 breeding birds including 12 rare species, 28 herptiles including 6 rare species, 51 vernal pools, 29 fish species, 360 plant species including 5 rare species and 3 globally rare species and 7 species of fresh water mussels. The last being the reason the river is one of the most diverse reaches in the state.

- Most of the river is still pristine in the nature of development along its banks.
- Invasive species have been unable to take hold in the river.
- Overall, because of these conditions, the state has an opportunity to take a proactive stance in watershed protection, thereby reducing if not eliminating the costs of restoration, which would result if the river were to be degraded.

A potential partnership of state and federal agencies, with local input, for acquisition and management of lands along the Taunton River have generated recent activity centered on land acquisition. One of the possible wetland restoration projects was located at the K&F Brickyard and the acquisition of the Cumberland Farm property would create significant assets for Middleborough.

Great Cedar and Little Cedar Swamps

Located in the northeastern corner and draining into the Bartlett, Whetstone and Raven brooks, this wetland resource area is within more than 2,000 acres of land and includes remnants of Atlantic White Cedar and White Pine forests. These are one of the rarer wetland types composed of boggy, acidic soils. The actual swamps have been reduced to the Hockomock and Acushnet cedar swamps. The land drains into the Winnetuxet River before eventually flowing into the Taunton River. Little Cedar Swamp was separated from Great Cedar Swamp by the construction of Fuller Street.

Lying within the lands previously used by the Cumberland Farms dairy operation, these resource areas are connected to the Striar property owned by the Wildlands Trust of Southeastern Massachusetts and Town of Halifax land, as well as the K&F Brickyard in Middleborough. The original swamp was reduced by the agricultural operations, but has in turn provided a unique grasslands habitat area of about 900 acres

that supports a wide variety of birds as reported in 1996 (Kathleen Anderson in the Bird Observer, vol. 24, no. 1).

Other Major Wetlands

Wetlands have long been recognized for their multiple values as natural habitats and support to maintaining water quality. A significant amount of inland wetland resource areas, protected by the Massachusetts Wetlands Protection Act, M.G.L. Chapter 131 Section 40 (the Act) and its Wetland Regulations (310 CMR 10.00 et seq.). The Middleborough Conservation Commission has the responsibility of administering the Act and the provisions of its implementing regulations. Since regulations for implementation of the Act were first issued in 1974, the Department of Environmental Protection has promulgated several revisions, including extensive changes in 1983. Additional regulations protecting wildlife habitat went into effect November 1, 1987 and the Rivers Protection Act (amendments) was passed in 1996 that created a new area Subject to Protection under the Act, the 200 foot Riverfront Area. This amendment is especially significant to Middleborough, with its extensive river and perennial stream systems. The latest revisions to the Regulations have incorporated stormwater management Performance Standards that provide further protection of the wetlands and waterways in Middleborough and throughout the State of Massachusetts.

The major wetland systems other than the Great and Little Cedar Swamps within Middleborough include the following:

Rocky Gutter and Forbes Swamp both occupy land in the south and southeast of Town and drain, for the most part into Buzzards Bay through the Weweantic River and the Sippican River. Principle brooks include East Rocky Gutter Brook, West Rocky Gutter Brook and Double Brook.

- Meeting House Swamp, a large wetland on the north side of Route 44.
- Beaver Dam Swamp, along Beaver Dam Brook in the northeast quarter.
- Along the Taunton River, Puddingshear Brook, Poquoy and Pratt Brook drain wetlands in the north and the Purchade Brook system drain large wetlands.
- White Oak Island.
- Rocky Gutter and Forbes Swamp, mostly located within the Rocky Gutter Wildlife Refuge and draining to the Weweantic and Sippican watersheds and eventually to Buzzard's Bay.
- Devil's Kitchen found within the Black Brook watershed, which flows south in Middleborough.
- Extensive wetlands along Fall Brook, tributary to Nemasket and Taunton Rivers and between Woods Pond and Tispaquin Pond, two brooks, Woods Brook and Shorts Brook share wetlands between them, which feed into Fall Brook.
- The Weweantic River watershed, which holds a majority of the cranberry bogs within Middleborough. The location of the cranberry bogs places an additional management burden when supporting water quality and public access initiatives.

There is an ongoing need for management and protection of inland wetlands in Middleborough. The wetlands provide a unique and important habitat area and provide recreational opportunities such as hunting, fishing, wildlife-viewing and other passive recreational pursuits.

Groundwater Resources

Middleborough has a large supply of surface and ground water resources that satisfy current local demands. However, growth in the region and in the cities outside of the control of Middleborough will have consequences to the balance of water in the Middleborough systems.

The outwash areas, where glaciers melted and spread sand and gravel are known as good-to-excellent recharge and ground water retention areas depending on the depth of the sand and gravel deposits. Almost all of Middleborough's ground water is found in these types of soil deposits. These soils are also highly permeable which makes ground water within these soils easy to extract but potentially susceptible to pollution depending on the soils covering the surface. Lacustrine deposits where fine silts and clays have settled have many limitations for development because they are poorly drained. Glacial till, which is stony soil and hardpan, creates limitations on everything from building to gardening. However, both of these latter soil types make excellent protective cover over the permeable aquifers.

Although each water supply site and its development are unique to the conditions found there, general information on the groundwater development within Middleborough, where 10 out of 11 wells are within the western-central portion of town, indicate this is a critical area for the Town water supply. Generally, the deep aquifers that provide the water supplies were created with, and so follow, the related river watersheds. A small portion of the town to the east is also within the Plymouth-Carver Aquifer.

This becomes important to managing the water resource balance within each watershed as well. As water withdrawals from the ground increase, this in turn can deplete the water reserves for surface water resources. This is especially important for water resources within the Nemasket River, Fall Brook and Black Brook watersheds where clusters of Town wells are located. The recent water supply development close to Assawompset Pond falls within a separate, but related watershed area.

Watershed protections for approved water supply wells are created in the local regulations as the Water Resource Protection Districts. These regulations are mandated by the State law and are reviewed by the Department of Environmental Protection.

Ten of the eleven town wells in Middleborough's water system are located within the Taunton River Basin. One well is located in the Buzzards Bay Basin. They are protected by the Massachusetts Well Head Protection Law. Activities at the well head, state approved Zone I and Zone II's are restricted by state regulations. Zones of secondary contribution or Zone III's, are additionally protected by Middleborough zoning regulations. See June 2008 Town of Middleborough Water Resources Map attached in the appendices.

In addition, there are two kettle-hole ponds in Middleborough within the Taunton River Basin. They are Tispaquin Pond and Woods Pond connected by Woods Brook and Shorts Brook. Woods Pond is surrounded by development and is not well suited for recreational development because it is shallow. Tispaquin is also shallow, however it has recreational potential. The Fred C. Weston Conservation land borders the pond on the north. It is a wetland and access is a problem. Efforts could be made to acquire dry land for a town beach, to meet future needs.

The southeast section of the town drains into the Buzzards Bay through the Weweantic River and the Sippican River. This is an area of low relief wetlands with small intermittent streams. There are a lot of cranberry bogs in this region that are dependent on a fragile perched water table for agricultural water supplies. The Town of Rochester has located an industrial park on the town line in the Buzzards Bay Watershed. The principle occupant of the park is SEMASS, a waste to energy electrical power plant. The

increasing water demands of steam turbine power generation evidenced by frequent increased withdrawal permits are having a significant impact on local agricultural resources.

Middleborough enjoys an abundance of surface and groundwater supplies to satisfy current municipal needs, however growth in the region beyond the control of the municipality, could outstrip surface and ground water supplies. Increasing demands made by water hungry cities, and in particular the new demand by Brockton and its surrounding communities, are a growing concern throughout the region. The Massachusetts Department of Environmental Protection through the Division of Water Supply provides a mechanism of monitoring and permitting with regards to additional withdrawals beyond 100,000 gallons per day in any given watershed.

The Middleborough Board of Selectmen is the special permitting authority for the Water Resources Protection By-law. The two principle areas of protection are recharge areas to town wells and all surface water bodies including brooks, stream, rivers and ponds.

Wetlands

Wetlands are generally recognized as lands that have water near or at the surface much of the year. They are identified by the presence and duration of water, soil types and vegetation cover. Between 30% and 40% of Middleborough's surface is covered by either surface water or wetlands, including farmed cranberry bog wetlands. Wetlands have long been recognized for their value as wildlife habitats and for flood control, but more recently they are valued for the protection they give to ground and surface water by sedimentation control and the purification of the surface infiltration.

The absorbing qualities of peat and heavy grasses retard heavy storm runoff and the resulting erosion. An acre of marsh has the capacity to hold 3,000,000 gallons of water. Furthermore, water moves slowly through marshes and swamps through a maze of tiny irregular streams. This acts as a filtering basin, intercepting sediments and pollutants from upland runoff. The vegetative material of a wetland absorbs and removes toxic chemicals through this very slow percolation process as well as through biological processes.¹¹

Vernal Pools Habitat in Middleborough

Vernal pools are critical habitats that support unique and valuable plant and wildlife communities. They are ephemeral wetlands which fill annually from precipitation, runoff, and rising groundwater. Most of the years they become completely dry, losing water through evaporation and transpiration. The wet-dry cycle prevents fish from becoming established, yet presents a rich, albeit temporary, habitat for many species.

A vernal pool is a productive hatchery for terrestrial amphibians. Its short period of intensive growth cycles the nutrients and energy of fallen leaves on the pool bottom into the frogs and salamanders of the adjacent woodlands.

In Massachusetts, vernal pool habitat (the pool and 100 feet beyond) are afforded some protection through existing regulations, mainly the Wetlands Protection Act Regulations and local bylaws. Other regulations that protect vernal pools include the Surface Water Quality Standards, Title V of the Massachusetts Environmental Code (septic system regulations), and the Forest Cutting Practices Act Regulations. Many, but not all, of these regulations require that the pool be "certified" by the NHESP.¹²

¹¹ Middleborough Master Plan: Report on Findings and Alternatives (2002)

¹² NHESP: A Field Guide to the Animals of Vernal Pools (May 2001)

Since the publishing of the 1998-2003 Open Space and Recreation Plan, **eleven** vernal pools in Middleborough have been certified by the Massachusetts Division of Fish and Wildlife's Natural Heritage Endangered Species Program (NHESP). Prior to that, there were no certified vernal pools in Middleborough. The literally thousands of vernal pools that exist in Middleborough are either completely unprotected or could be afforded further protection if certified. These potentially certifiable vernal pools identified by MassGIS are depicted on the June 2008 Town of Middleborough Potential Vernal Pool Map attached to this Plan.

Cranberry Bogs

Cranberry bog wetland systems are unique to only a few small areas in North America. They are wetland farms, maintained at their level of wetland succession by the activity of farming cranberries. Sometimes they are prior converted wetlands; select natural bogs and more recently, entirely man made. The cranberry bog system includes a water supply and conveyance system, bog beds, and an upland workspace. The bog beds are routinely flooded and de-watered as normal agricultural practice. Cranberry bog systems have almost all of the wetland functions of a natural wetland; however, they are managed for a monoculture, and may not provide all of the habitat functions of natural wetlands.

D. Vegetation

Wetland Vegetation

Wetlands are usually classified by the plant communities that grow in them. Most of the wetlands in Middleborough are a combination of communities, representing various stages of succession, from very wet to seasonally wet and occasionally draughty. The marsh community occupies the wettest sites characterized by shallow standing water and floating or emergent vegetation such as reeds, arrow head, duck weed and cattails. A wet meadow community is made up of chiefly grasses working toward a drier community where trees and woody shrubs can survive. Swamps are initially populated by shrubs, hence, shrub swamps, gradually changing to a drier wooded swamp community including stands of red maple, black ash, pin oak and sweet gum, for example. Some shrub swamp plant varieties include pepper bush, button bush, alders and willows. Along the flood plains of rivers and streams, intermittent flooding creates a plant community different from marshes, meadows and swamps. Plants in these areas tolerate both immersion and dryness and include: pin oak, swamp white oak, cotton wood, river birch and box elder.

The stream bank community includes an abundance and variety of flowering herbaceous plants. Where streams are fed from wetland areas, as in much of Middleborough, acid loving plants colonize the banks like ferns, cardinal flower, marsh marigold and Indian poke. In shaded areas, ferns may dominate.

An unusual wetland community is the natural bog community characterized by evergreen shrubs, sedges and sphagnum moss. These areas are created when small, deep kettlehole ponds are covered with a floating mat of vegetation. The anaerobic decomposition that occurs beneath the mat keeps the growing medium acidic, and will support only a select, acid tolerant plant community including: cranberries, bog laurel, red and white cedars, as well as some unusual plants like sun dews, bog orchids and pitcher plants.

Forested Land

According to the 1980 University of Massachusetts Vegetation Survey, forest types in Middleborough can be categorized into four groups closely related to soil characteristics. White Pine (*Pinus strobus*) forests and white pine and oak mixes [White Oak (*Quercus alba*) and Red Oak (*Q. borealis*)] are abundant

in the north and western part of town. They are located on well-drained soils. Oak forests typically exist on dry sandy soils and, on excessively dry soils; the scrub oak is frequently mixed with Pitch Pine (*P. rigida*). This is found on the course soils in the southeastern portion of town. Pine and Red Maple (*Acer rubrum*) forests, and Atlantic White Cedar (*Chamaecyparis thyoides*) and red maple swamps make up two distinct forest types within the wetland soil associations.

There is unique vegetation communities located in patchy stands throughout town. Atlantic White Cedar is found in both Great Cedar Swamp and Little Cedar Swamp and the Weston Park. Southern New England is considered to be the northern limit of pure stands of Atlantic White Cedar, which under suitable conditions, are reputed to be the densest of any North American trees. Several small American Holly (*Ilex opaca*) stands are located throughout south and east Middleborough as well as Eastern Hemlock (*Tsuga canadensis*) on the north shore of Tispaquin Pond and in south Middleborough. Black Walnut (*Juglans nigra*), Beech (*Fagus sylvatica*), Shagbark Hickory (*Carya ovata*) and Ironwood (*Ostrya Virginiana*) trees can be found along the Taunton River.

Cranberries have been cultivated in Middleborough for at least 100 years in natural bogs and swamps converted to cropland. They have become part of cranberry wetland ecosystems, unique to southeastern Massachusetts. Middleborough is the third largest cranberry growing town in Massachusetts with over 1,700 acres in cultivation. Other than cranberries, and to a lesser extent, vegetables, hay, flowers and small fruits make up the balance of crops farmed in Middleborough today.

According to the NHESP BioMap and Living Waters: Guiding Land Conservation for Biodiversity in Massachusetts produced in 2004, there are five Core Habitats in Middleborough. Core Habitats have been identified as the most critical sites for biodiversity conservation across the state. Core habitats represent habitat for the state's most viable rare plant and animal populations and include exemplary natural communities and aquatic habitats. Core Habitats represents a wide diversity of rare species and natural communities and these areas are also thought to contain virtually all of the other described species in Massachusetts. The Core Habitat Areas – Town of Middleborough map taken from the 2004 *Community Development Plan* prepared by Larry Koff & Associates is also found in the appendices.

Middleborough has five Imperiled Natural Communities. Imperiled communities typically have 6-20 site or few remaining acres in the state. These Imperiled communities include: Alluvial Atlantic White Cedar Swamp, Coastal Plain Pondshore, Pitch Pine – Scrub Oak Community, Coastal Atlantic White Cedar Swamp, and Kettlehole Level Bog.

Alluvial Atlantic White Cedar Swamp

Alluvial Atlantic White Cedar swamps differ from other Atlantic White Cedar wetlands in that they occur within the floodplain of rivers and streams or at the fringes of open marshy areas along ponds. They receive annual or semi-annual overbank flooding making them more mineral-rich than other Atlantic White Cedar wetlands. Water saturated peat, generally 1 m thick in alluvial examples, overlies the mineral sediments, and standing water generally occurs for half of the growing season or longer. Atlantic white cedar (*Chamaecyparis thyoides*) and red maple (*Acer rubrum*) dominate the tree layer, and highbush blueberry (*Vaccinium corymbosum*) and sweet pepperbush (*Clethra alnifolia*) occur in the shrub layer along with silky dogwood (*Cornus amomum*). The herb layer is comprised of species common to very wet, open or enriched sites. Alluvial Atlantic white cedar swamps can function as vernal pool habitat if water remains standing for 2-3 months and they lack fish; these areas provide important amphibian breeding habitat.

There are two distinctive threats to this community. They are land clearing for agriculture, commercial and residential development, and interference of normal hydrological functioning as a result of

development. Selective cutting is detrimental to the persistence of cedar swamps because hardwoods, such as red maple, out-compete and replace the cedar. It is recommended that no clearing or filling of these wetlands be allowed.

Coastal Plain Pondshore

Coastal Plain Pondshore communities of various sizes and quality are scattered throughout the Core Habitat. This habitat is found along shallow, highly acidic groundwater ponds in glacial outwash, usually with no inlet or outlet. Water rises and falls with changes in the water table, typically leaving an exposed shoreline in late summer. In wet years, the pondshore may remain inundated. Vegetation along the pondshore is correlated with flooding regime – from dry to waterline and not every pondshore has every zone. Coastal plain pondshores have an abundance of state-protected and globally restricted rare plants. It provides habitat for at least 43 rare animal and plant species.

There are multiple threats to this community, the greatest of which is from over-development of coastal Massachusetts which impacts pondshores directly through housing and recreation and indirectly through water withdrawal.

Pitch Pine – Scrub Oak Community

Pitch Pine – Scrub Oak communities are globally rare, fire dependent, shrub-dominated communities with scattered dense trees. They develop on droughty, low nutrient soils – usually deep, coarse, well-drained sands derived from glacial outwash. Pitch pines form an open canopy above a shrub layer dominated by shrub oaks, scrub oak (*Quercus ilicifolia*) and sometimes dwarf chinquapin oak (*Q. prinoides*). Scattered openings of variable size support patches of heathland or grassland vegetation – more or less sparse lowbush blueberry (*Vaccinium angustifolium*), bearberry (*Arctostaphylos uva-ursi*), lichen patches and various ground cover species. They provide habitat for many rare plant and animal species.

Threats to this community include development, fragmentation, and erosion from heavy trail use. Fire suppression and severe wildfires are also a threat.

Coastal Atlantic White Cedar Swamp

Coastal Atlantic White Cedar Swamps typically occur at low elevations, less than 40 ft above sea level, in basins of overlaying sand and gravel deposits or glacial lake bottom sediments. Atlantic white cedar (*Chamaecyparis thyoides*) is the dominant tree mixed with red maple (*Acer rubrum*). Young thickets provide excellent cover for deer, rabbits, and birds. The rare plant Heartleaf twayblade (*Listera cordata*) has been associated with this habitat. Rare animals associated with coastal atlantic white cedar swamps include; blue-spotted salamander (*Ambystoma laterale*), mystic valley amphipod (*Crangonyx aberrans*), four-toed salamander (*Hemidactylum scutatum*), pale green pinion moth (*Lithophane viridipallens*), hessel's hairstreak (*Mitoura hesseli*) and Northern Parula (*Parula Americana*).

There are two distinctive threats to this community are land clearing for agriculture, commercial and residential development, and interference of normal hydrological functioning as a result of development. Selective cutting is detrimental to the persistence of cedar swamps because hardwoods, such as red maple, out-compete and replace the cedar. It is recommended that no clearing or filling of these wetlands be allowed.

Kettlehole Level Bog

Kettlehole level bogs are a subset of level bogs that occur in iceblock depressions in sandy glacial outwash. They are typically small, round, and they lack inlets or outlets. Kettlehole level bogs have similar vegetation to level bogs (mixture of tall and short shrubs that are predominantly members of the Heath family – Leatherleaf (*Chamaedaphne calyculata*) is dominant) except that the vegetation is typically in a ringed zonation pattern. Often the outer wet moat is dominated by a mixture of highbush blueberry and swamp azalea (*Rhododendron viscosum*) bordering to the interior by a ring of rhodora (*Rhododendron canadense*). The mat has a mixture of tall and short shrubs that are predominantly members of the Heath family (i.e. ericaceous) – Leatherleaf is dominant. Scattered, stunted coniferous trees occur throughout. Moats surrounding kettlehole level bogs can function as vernal pool habitat if water remains standing for 2-3 months and they lack fish.

Hyrologic alteration and nutrient enrichment from road and lawn runoff and trampling from humans affect peat mat integrity are its biggest threats (aside from complete destruction if not subject to regulatory protection).

Supporting Natural Landscape

Supporting Natural Landscape provide buffers around Core Habitats, connectivity between Core Habitats, sufficient space for ecosystems to function, and contiguous undeveloped habitat for common species. Supporting Natural Landscape represents potential land protection priorities once Core Habitat protection has been addressed.

Endangered, Threatened and Species of Special Concern – Plants

The State Natural Heritage and Endangered Species Program has prepared general mapping to indicate areas critical to state-listed (rare) species. These areas are shown generally to protect the species from disturbance. The majority of the critical habitats are within the northern portions of Middleborough, along the Taunton River, and around the Assawompset Pond Complex. As mentioned earlier, there may be thousands of vernal pools within Middleborough that are not certified by NHESP and therefore may be unprotected or could be afforded additional protection through existing state and federal regulations as they would be classified as Outstanding Resource Waters.

The following table lists the vascular plants documented in Middleborough that are either Endangered, Threatened or of Special Concern. **Endangered** species are in danger of extinction throughout all or a significant portion of their range or are in danger of extirpation from Massachusetts. **Threatened** species are likely to become Endangered in Massachusetts in the foreseeable future throughout all or a significant portion of their range. **Special Concern** species have suffered a decline that could threaten the species if allowed to continue unchecked or occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become Threatened in Massachusetts.

TABLE 4.3 Rare and Endangered Plant Species in Middleborough

Philadelphia Panicgrass (<i>Panicum philadelphicum</i>) – Special Concern	Pale Green Orchid (<i>Platanthera flava</i> var. <i>herbiola</i>) Threatened	Lily-leaf Twayblade (<i>Liparis liliifolia</i>) Threatened	Dwarf Bulrush (<i>Lipocarpa micrantha</i>) Threatened
Pondshore Knotweed (<i>Polygonum puritanorum</i>) – Special Concern	Round-fruited False-loosetrife (<i>Ludwigia sphaerocarpa</i>) Endangered	Rigid Flax (<i>Linum medium</i> var. <i>texanum</i>) Threatened	Gypsywort (<i>Lycopus rubellus</i>) Endangered
Plymouth Gentian (<i>Sabatia Kennedyana</i>) – Special Concern	Lion’s Foot (<i>Nabulas serpentarius</i>) Endangered	Long-leaved Panicgrass (<i>Panicum rigidulum</i> ssp. <i>pubescens</i>) Threatened	

E. Fisheries and Wildlife

Middleborough’s diverse geography provides habitat for a wide variety of species, from upland forest species to open field and wetland inhabitants, as well as pond and riparian species. Some wildlife species use different habitat areas for nesting and breeding, feeding and watering, or transitory stopovers. An example of this might be the annual herring run up the Nemasket River which is one of the most productive warm water fisheries in southeastern Massachusetts and part of what fisheries experts consider the region’s most significant alewife run.¹³ Today, the spring spawning run of alewife and blueback herring up the Nemasket River into the Assawompset Ponds tops one million fish.

Mammal species in Middleborough are typical woodland and wetland varieties. While black cats (fishers) and otter may have been common at one time, species adaptive to suburban land uses prevail today. See the list below. Suburban development has disrupted a natural balance causing deer populations to soar, unabated by *natural* predators and more recently, a growing population of the very adaptive coyote.

Some of the common mammals include:

Chipmunk	gray squirrel	muskrat	vole
Coyote	red squirrel	opossum	weasel
Deer	Mink	rabbit	woodchuck
Fox	Mice	raccoon	skunk
Otter			

Common birds:

Crows	Pheasant	geese	quail
Ducks	Heron	woodcock	blue jays
Hawks	meadow lark	turkeys (re-introduced)	owls
song birds	Doves	ruffed grouse	sea gulls

Common reptiles and amphibians:

Salamanders	Toads	green frog	ribbon snake
Bull frog	tree frog	painted turtle	green snake
spring peeper	snapping turtle	garter snake	black snake

¹³ Taunton River Stewardship Plan (July 2005)

Native fisheries:

brook trout	large mouth bass	small mouth bass	bluegill sunfish
pumpkin seed sunfish	eastern chain pickerel	brown bullhead catfish	herring
yellow perch	black crappie	golden shiner	carp

The Taunton River watershed supports 29 native fish. There are several fish ladders in Middleborough, associated with the Nemasket River, including structures at the Assawompset Dam, Thomas Memorial Park and Oliver Mill Park. These fish ways are overseen by the Massachusetts Division of Marine Fisheries and must be kept in working order. Obstruction to herring migration and otherwise harassing anadromous fish is against the law and punishable with fines.

Fish that could be introduced include: Tiger Musky and Northern Pike in warm water streams, and Brown Trout, Rainbow Trout and Brook Trout in cold water streams.

Endangered, Threatened and Species of Special Concern – Other

According to the Natural Heritage & Endangered Species Program there are a total of twenty five protected species (including vascular plants) residing in Middleborough. Estimated habitats protected by law are depicted on the National Heritage and Endangered Species Program (NHESP) Priority and Estimated Habitats Map.

Birds:

Common Moorhen (<i>Gallinula chloropus</i>) – Special Concern	Upland Sandpiper (<i>Bartramia longicauda</i>) Endangered	Barn Owl (<i>Tyto alba</i>) – Special Concern	Long-eared Owl (<i>Asio otus</i>) – Special Concern
Northern Parula (<i>Parula americana</i>) – Threatened			

Reptiles:

Wood Turtle (<i>Glyptemys insculpta</i>) – Special Concern	Blanding’s Turtle (<i>Emydoidea blandingii</i>) Threatened	Northern Red-bellied Cooter (<i>Pseudemys rubriventris</i>) - Endangered	Eastern Box Turtle (<i>Terrapene Carolina</i>) – Special Concern
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Others:

moth: Water-willow Stem Borer (<i>Papaipema sulphurata</i>) Mussel - Threatened	fish: Bridle Shiner (<i>Notropis bifrenatus</i>) – Special Concern	mussel: Triangle Floater (<i>Alasmidonta undulata</i>) – Special Concern	mussel: Tidewater Mucket (<i>Leptodea ochracea</i>)- Special Concern
Eastern Pondmussel (<i>Ligumia nasuta</i>) – Special Concern			

F. Scenic Resources and Unique Environments

The unique visual features of the landscape are a combination of natural and man-made elements. They include:

- Historic homes, churches and farms throughout town and within the historic villages

- Thompson Street agricultural land
- Nemasket Hill Cemetery, overlooking Nemasket River
- Main Street to Nickerson Ave., historic homes on tree lined street.
- Oliver Mill Park, Peter Oliver House, General Abel Washburn House, Richard Sampson Homestead; Eddyville Homestead; Charles Stratton and Lavinia Warren (“Tom Thumb”) House
- Soule Farm
- Pratt Farm
- Smallpox Cemetary and hospital
- Site of a colonial fort of 1670 (Pierce Playground)
- Stone Bridge along the Nemasket River
- Rocky Gutter Street forested wildlife habitat
- Cranberry bogs, throughout town
- Views of Assawompset Pond, Pocksha Pond and Great Quittacas Pond
- Scenic drives
- Along the waterways, by footpath and paddle.

There are several road sections that have been designated as “scenic roads” through Town Meeting vote. The 1998 Open Space Plan identifies seven streets as Scenic Roads, some of which are on connecting routes:

- Marion Road from Cherry Street to the Rochester town line
- Purchase Street from Faye Avenue to Chestnut Street
- Chestnut Street from Faye Avenue to Tispaquin Street
- South on Tispaquin Street to Wareham Street
- Summer street from Route 44 to Murdock Street
- Plymouth Street from Summer Street to the Bridgewater town line
- Pleasant street from Route 44 to Plymouth Street

G. Environmental Problems

Non-point source pollution from storm water run-off is one of the most threatening environmental problems affecting Middleborough today. Run-off from roads carries sediments, oils, heavy metals and salts to rivers, streams, wetlands and ground water supplies. Shallow, private water supply wells on small lots with close proximity to road fronts are particularly vulnerable. Storm water running over disturbed ground erodes loose soil particles and deposits sediments in streams and wetlands. While clean soil hardly seems like a pollutant, the results of sedimentation are sand choked streams and filled wetlands. Nationwide, erosion and sedimentation (of even clean soil particles) are the greatest source of stream flow degradation.

Storm water runoff from agricultural-use land can carry chemicals and nutrients to receiving water bodies. Nutrient loading associated with animal waste from feed lots and manure storage has been a problem in the past, particularly in the Taunton River Watershed.

Other environmental problems include failing septic systems and older on-site waste disposal systems that are under-designed for modern use and standards. Practices that were not thought to be of concern in the past have been identified as environmental concerns of the present and future. Deteriorating underground fuel storage tanks, for example, and hazardous waste sites from earlier industries are problems today.

Secondary clean up on at least two industrial sites, along the rail line in the center of Town, have not yet been completed.

Highway construction with the avoidable and unavoidable degradation that accompanies road work is another concern that visits Middleborough today and into the future. A problem of growing concern is pollution from road salts. Soluble materials applied to the extensive highway system in Middleborough during snow and ice conditions can find their way into public water supplies, private wells, surface water bodies, and wetlands.

Another issue of importance to the wetland resources in Middleborough is the invasion of non-native species which is a problem in many parts of the region. Many non-native species exist within the area and are not considered pests. However, plants such as these can over run an area and are not easily controlled, mainly because the most destructive mitigation measures such as herbicides also impact the desired native species. The pristine nature of the Taunton River has kept it relatively free of invasive species.

Site preparations for anticipated growth, solid waste disposal, air pollution and noise pollution are chronic concerns. Identification environmental problems that affect the natural community and public recreational opportunities should be identified in a more specific, targeted approach over the next five years, with Actions proposed in the internal yearly Open Space and Recreational Plan Updates.

Section 5 - Inventory of Lands of Conservation and Recreation Interest

The inventory of open space in Middleborough includes private and public land that is customarily used for conservation, public water supply protection, recreation, agriculture and forestry. These lands may enjoy various levels of protection. Town-owned recreation land, conservation land, water supply protection land, and town forest in sensitive resource areas are assumed to be protected by the town as open space. In addition to these lands, the June 2008 Protected Open Space and Priority Preservation Land map found in Appendix X also depicts land used for municipal purposes, most tax taking lands or land in the general inventory and cemeteries.

Farmland enrolled in the Massachusetts Farmland Assessment Act, Chapter 61A, forestland enrolled in the Chapter 61 Forest Assessment Program, and recreation land enrolled in the 61B Recreational Land Program are included in the open space inventory because they are temporarily secured with conservation easements. Chapter 61 lands are depicted on the June 2008 *Chapter 61 Lands* map found in **Appendix X**. However, these types of conservation easements provide temporary protection, and while they afford the town the option to purchase, without the financial ability to exercise that option at will, this land is vulnerable to development. Therefore they are inventoried as unprotected parcels.

Inventory of Protected Parcels

(Stuart Morgan Property)

Acreage: 35+ acres

Location/access: Long Point Road and Marion Road

Ownership: Town of Middleborough, Conservation Commission

Management: A Committee appointed by the Conservation Commission is to aid the Commission in the long term management of the property

Use: Acquired for use as publicly accessible open space. To also protect public water supply, endangered species habitat, wildlife habitat, migration waterfowl habitat, fishery spawning area,

archaeologically sensitive land, quality of view sheds and to provide public access area to the Assawompsett Ponds complex.

Description: Mixed woodland, a large 3 acre field, overgrown formal gardens, a hemlock boulevard to the pond, a small stream and spring, stone walls, existing trails, two sandy beaches, a kettlehole swamp area and two large hillocks, which protrude out into the pond providing excellent viewing potential.

Recommendations: Establish parking area and identify future parking areas. Have signs made identifying means of purchase and identifying land, develop rules and regulations for use of the property. Prepare a management plan for the maintenance of the fields, and a forest management plan for the old growth forest. Continue to work with the City of New Bedford to protect mutual interests in preserving the quality of the water supply. Clearly mark boundaries and establish a trail system.

#M-1

Soule Homestead Educational Center

www.soulehomestead.org

Acreage: 94.4 in Middleborough and 35.0 in Plympton

Location/access: 46 Soule Street

Ownership: Town of Middleborough

Management: Board of Selectmen: Leased to private nonprofit corporation to provide environmental/ agricultural education.

Use: Educational facility open to the public. Some trails, picnic areas, community gardens. Educational and community/regional programs offered.

Description: House and grounds in good condition. Improvements to date have been made by volunteers. There are extensive farm fields that are presently used for organic market vegetables, blueberries, pasture and hay. There are many programs offered locally and regionally throughout the year and the farm is open to the public for walking and visiting.

Recommendations: *The present tenants have plans to increase accessibility with ramps, improved bathrooms, and improved trails. This is very important because the farm is a popular educational facility with structured guidance for children and adults who might not otherwise get outdoors. There is also an improvement plan in place to upgrade the outbuildings and strengthen the agricultural component. A to-scale site map should be developed that depicts walking trails, forest stand types, unique features and public amenities provided. This site map should be made available on the town web site for the public to view and print out.*

#M-2

Pratt Farm

Acreage: 140

Location/access: East Main Street (Route 105) and Sachem Street

Ownership: Middleborough, Conservation Commission

Management: Conservation Commission

Use: Historic site with extensive trails for hiking, cross country skiing, biking, snowmobiling, and horse riding. Some of the trails are handicapped accessible. The site has woods, ponds and pastures, offering both fishing and nature study. It also has a picnic area that is handicapped accessible. In summer months, a farmer's market is held here on Saturdays. The property was acquired and used for open space and recreation. It offers a Farmers Market on Saturday's during the summer and Pow-wows through the year.

Description: The Pratt farm is a very popular recreation site in Middleborough. There is access and parking in two locations and both parking areas meet the requirement

for accessible parking. There is a fish hatchery on the property, which is currently not in use. Three ponds on the property provide popular fishing areas. Although the Mass Division of Fisheries and Wildlife has stocked at least one pond in the past, currently it is not stocked. Sometimes hay is harvested, but most often it is cut at the expense of the town. There is an abandoned cranberry bog on the property. The site is large and abuts other town owned property, with additional potential for recreational use.

Recommendations: *This property has a comprehensive conservation and recreation plan on file in the conservation office. That plan includes reactivating the hatchery, conducting timber stand improvements (TSI) to promote and sustain the good health and quality of the forest stands, and improving the recreational opportunities offered. The site is generally handicapped accessible however; proper signs need to designate handicapped parking. A to-scale site map should be developed that depicts walking trails, forest stand types, unique features and public amenities provided. This site map should be made available on the town web site for the public to view and print out.*

#M-3 **Wading Place**
Acreage: 7.11
Location/access: East Main Street
Ownership: Town of Middleborough
Management: Board of Selectmen
Use: Historic site.
Description: The property includes a trail along the Nemasket River.

Recommendations: *Connect foot-trails along the Nemasket River for a continuous foot-trail system. Provide parking, signage and improve access. A to-scale site map should be developed that depicts walking trails, forest stand types, unique features and public amenities provided, if any. This site map should be made available on the town web site for the public to view and print out.*

M-4 **Oliver Mill Park**
Acreage: 5.16
Location/access: Route 44 and Plymouth Street
Ownership: Town of Middleborough Park Department
Management: Park Department adopted by the Middleborough Lions Club. Prominent police presence as well as Herring Warden during herring season.
Use: Historic mill site, currently used for hiking, nature study, fishing & relaxing. Widely used by families, scouts, canoeists and school groups.
Description: There are picnic tables and barbecue pits, trails and bridges and a herring run/fish ladder and a canoe launch area.

Recommendations: *The site is generally handicapped accessible, however parking areas should be designated with signs and dirt trails should be brought up to bridge grades. Visitors would appreciate more information at the site. A to-scale site map should be developed that depicts walking trails, forest stand types, unique*

features and public amenities provided, if any on this parcel as well as the adjacent protected open space parcels. This site map should be made available on the town web site for the public to view and print out. Signs designating the location should be improved.

#M-5 **Plymouth Street at Nemasket Street**
Acreage: 16.5
Location/access: Adjacent to Oliver Mill Park
Ownership: Town of Middleborough Conservation Commission
Management: Managed as part of the Oliver Mill Park.
Use: Passive recreation and wildlife.
Description: Scenic riverfront.

Recommendations: *Maintain and increase buffers around the park so that it can be expanded to meet the demands of population growth anticipated in the near future.*

#M-6 **Thomas Sproat Pierce Playground**
Acreage: 24.25
Location/access: Jackson Street
Ownership: Pierce Trust
Management: Leased to the Middleborough Park Department
Use: Recreation and sports facility used by the entire community. Current programs include swimming, tennis, playground activities, summer day camp, sports skills camps, baseball, softball, track, basketball, field hockey, football and soccer.
Description: The Park includes playground equipment, tennis courts, multi-use sport fields, baseball diamonds, a track, and outdoor swimming pool and kiddie corner. It is well maintained under the direction of the Parks Department.

Recommendations: *The Open Space Plan recommends that the Parks Department be given the funds to continue with their capital improvement plan including the installation of benches, picnic tables and water bubblers, improved landscape design with improved handicapped access throughout. State-wide Open Space & Recreation surveys have confirmed the public's priority interest in spending available funds on park and recreational land maintenance.¹⁴*

#M-7 **Thomas Memorial Park / Wareham Street Herring Run**
Acreage: 3.89
Location/access: Wareham Street
Ownership: Town of Middleborough, Gas and Electric Department
Management: Middleborough Gas and Electric Department
Use: Catch herring during the spring months with a permit obtained from the Town Clerk's office. Non-resident permits are available on a limited basis. There is a picnic area and canoe access to the Nemasket River.

¹⁴ 2006 Statewide Comprehensive Open Space Recreation Plan

Description: Fish ladder and barrier dam, small parking area with picnic area, riverside bench, trails and canoe access.

Recommendations: *Handicapped access can be improved with assigned parking.*

M-8 **East Main Street Well Site**
Acreage: 59.28
Location/access: No public access
Ownership: Town of Middleborough, Water Department
Management: Water Department
Use: Water supply protection.

Recommendations: *No improvements necessary.*

#M-9 **East Grove Street Well Site**
Acreage: 8
Location/access: No public access
Ownership: Town of Middleborough, Water Department
Management: Water Department
Use: Water Supply Protection.

Recommendations: *No improvements necessary.*

M-10 **Spruce Street Well Site**
Acreage: 12.66
Location/access: No public access
Ownership: Town of Middleborough, Water Department
Management: Water Department
Use: Water Supply Protection.

Recommendations: *No improvements necessary.*

#M-11 **Meetinghouse Well Site**
Acreage: 19.7
Location/access: Plympton Street, no public access
Ownership: Town of Middleborough, Water Department
Management: Water Department
Use: Water supply protection.

Recommendations: *No improvements necessary.*

M-12 **Miller Street Well Site**
Acreage: 20.2+
Location/access: No public access
Ownership: Town of Middleborough, Water Department
Management: Water Department
Use: Water Supply Protection.

Recommendations: *No improvements necessary.*

#M-13 **Wareham Street, at Tispaquin, Well Site**

Acreage: 22.3
Location/access: No public access
Ownership: Town of Middleborough, Water Department
Management: Water Department
Use: Water Supply Protection.

Recommendations: *No improvements necessary.*

M-14 **Rock Village Well Site**
Acreage: 10
Location/access: Miller Street, no public access
Ownership: Town of Middleborough, Water Department
Management: Water Department
Use: Water Supply Protection.

Recommendations: *No improvements necessary.*

M-15 **Wilbur Well Site**
Acreage: 14
Location/access: Old Vaughn Street, no public access
Ownership: Town of Middleborough, Water Department
Management: Water Department
Use: Water Supply Protection.

Recommendations: *No improvements necessary.*

M-16 **Cross Street Well Site**
Acreage: 15.66
Location/access: Cross Street, no public access
Ownership: Town of Middleborough, Water Department
Management: Water Department
Use: Water Supply Protection.

Recommendations: *No improvements necessary.*

M-17 **Andreattola Property**
Acreage: 20
Location/access: Route 105, East Main Street
Ownership: Town of Middleborough, Water Department
Management: Water Department
Use: Watershed and Aquifer protection.
Description: The property is within the Nemasket River corridor and is an historic site. It consists of old farm fields that are becoming overgrown and evolving into forested land.

Recommendations: *This property has passive recreational potential as part of the Nemasket River corridor. It is in close proximity to the Pratt Farm site and the historic Wading Place and should be opened to the public for limited use.*

#M-18 **Nemasket River Wildlife**
Acreage: 6
Location/access: Murdock Street
Ownership: Town of Middleborough, Conservation Commission
Management: Conservation Commission
Use: Wildlife Habitat; Water Quality & Flood Protection
Description: Wetlands

Recommendations: *No improvements necessary*

#M-19 **Nemasket River Wildlife**
Acreage: 7.97
Location/access: Off Brook Street, relatively inaccessible
Ownership: Town of Middleborough, Conservation Commission
Management: Conservation Commission
Use: Wildlife Habitat; Water Quality & Flood Protection
Description: Wetlands

Recommendations: *No improvements necessary*

#M-20 **Ocean Spray Conservation Area**
Acreage: 6.6
Location/access: Bridge Street
Ownership: Town of Middleborough, Conservation Commission
Management: Conservation Commission
Use: Wildlife Habitat; Water Quality & Flood Protection.
Description: Wetlands

Recommendations: *No improvements necessary*

#M-21 **Washburn Conservation Area**
Acreage: 194.73
Location/access: On Fall Brook, between Wood Street and Cherry Street
Ownership: Town of Middleborough, Conservation Commission
Management: Board of Selectmen
Use: Wildlife Habitat; Water Quality and Unique Habitat Preservation/Protection
Description: Shrub swamp and wooded wetlands surrounding Fall Brook and a stand of Atlantic White Cedar.

Recommendations: *No improvements necessary at this time.*

#M-22 **Bradshaw Property**
Acreage: 50+
Location/access: Along the Taunton River, River Street
Ownership: Town of Middleborough, Board of Selectmen
Management: Board of Selectmen
Use: Wildlife Habitat; Water Quality & Flood Protection
Description: High forested ground along the Taunton River with established trail system linking it to Grant Property owned by Massachusetts Division of Fisheries and Wildlife.

Recommendations: *Designate the property for protection, develop for recreation with parking area and marked trails, some with handicapped accessibility.*

#M-23 Fred C. Weston Memorial Forest
Acreage: 311.3
Location/access: Parking at Tispaquin Street, and at Purchase Street
Ownership: Town of Middleborough
Management: Conservation Commission
Use: Wildlife habitat management including a large population of re-introduced wild turkeys.

Description: Overgrown rolling forest to swamp, with small parking area. This area has good potential for horse riding, hiking, nature study and bird watching. *This property is not ADA assessable.*

Recommendations: *Parking areas need immediate attention and need to be renovated to meet ADA requirements. Adjacent parcel, known as The Island, has historic significance, and has been offered to the town. It should be acquired. Trails should be cut, maintained, marked and mapped. Newly acquired parcels were given to the Town in 1993 abutting this property.*

#M-24 **Bradford Land Company Parcel**
Acreage: 19+
Location/access: Shorts Brook, off Purchase Street
Ownership: Town of Middleborough, Board of Selectmen
Management: Board of Selectmen
Use: Wildlife Habitat; Water Quality & Flood Protection
Description: Acquired by gift in 1993, this parcel abuts the Fred C. Weston Memorial Park on Shorts Brook. Much of it is wetland and it is rich in wildlife habitat.

Recommendations: *Since this parcel is located within the Shorts Brook wetland, contiguous with the Fred C. Weston Memorial Park conservation area, it should be designated for protection and added to the conservation parcel.*

#M-25 **Middleborough Town Forest**
Acreage: 47.5 (in two parcels)
Location/access: Chestnut Street
Ownership: Town of Middleborough, Conservation Commission
Management: Conservation Commission
Use: Hiking, nature observing and picnicking.
Description: Forest with small parking area. Overgrown trails.

Recommendations: *This property should have a forest management plan including development of a to-scale site map that depicts walking trails, forest stand types, unique features and public amenities provided, if any. This site map should be made available on the town web site for the public to view and print out.*

#M-26 **Shaw Parcel, abutting land known as Town Forest**
Acreage: 10
Location/access: Off Tispaquin Street
Ownership: Town of Middleborough, Board of Selectmen

Management: Board of Selectmen
Use: Wildlife Habitat
Description: Forested land connecting Town Forest parcels off Chestnut Street to Tispaquin Street, for good trail potential.

Recommendations: *Designate this property for protection and add to the Town Forest. Consider forest management for wildlife enhancement and trail development.*

#M-27 West Side Playground

Acreage: 10
Location/access: Warren Avenue west
Ownership: Town of Middleborough, Park Department
Management: Park Department
Use: Tot lot, picnic area with tables and two baseball fields adjacent.
Description: The site has a small parking area that is handicapped accessible, however it is unmarked. It is adjacent to two ball fields. There are picnic tables, although in poor condition, and swings and playground equipment in poor condition.

Recommendations: *The site has great potential as a nice playground with improvements such as, modern, safe playground equipment and handicapped access.*

#M-28 Wood Street Playground

Acreage: 8.5
Location/access: Near East Main Street
Ownership: Town of Middleborough, Board of Selectmen
Management: Unmanaged
Use: Connects Pratt Farm to Wood Street, used for sledding.
Description: Open hill slope and wetland areas.

Recommendations: *Since the Town does not have the ability to maintain a playground at this location, no improvements are recommended at this time. However this is an area of anticipated residential growth; it is recommended to hold the lot aside for future use.*

#M-29 Burkland/Mayflower School Playground

Acreage: 38.61
Location/access: Mayflower Avenue
Ownership: Town of Middleborough, School Department
Management: School Department
Use: School playground complex, used by the schools during the school day, sports fields and playground widely used after school and during vacations. The parking area is used for skate boarding and bike riding.
Description: In all, there are: 5 baseball diamonds, 3 basketball courts, two play grounds with play equipment, and an open field, all in good condition; an indoor pool and ample parking. Handicapped parking is available, designated with signs.

Recommendations: *More benches and better pathways connecting the fields and playgrounds would improve the facility. Open field areas remain that can be developed in the future as the town expands.*

- # M-30** **Field of Dreams**
Acreage: 7.1
Location/access: Adjacent to Burkland/Mayflower School
Ownership: Town of Middleborough
Management: School Department and soccer league.
Use: Soccer fields under development
- Recommendations:** *Continue to build practice and game fields as needed; install irrigation, landscaping improvements, restrooms and seating areas in the future.*
- #M-31** **Middleborough High School**
Acreage: 29.54
Location/access: East Grove Street
Ownership: Town of Middleborough, School Department
Management: School Department
Use: High School Sports field complex
Description: Oval track, six tennis courts, sport fields, 2 baseball diamonds, 2 softball fields.
- Recommendations:** *Develop new sports fields.*
- #M-32** **Memorial Early Childhood Center**
Acreage: 2.3
Location/access: North Main Street
Ownership: Town of Middleborough, School Department
Management: School Department
Use: Educational Facility
- Recommendations:** *Link the school to the Pratt Farm with foot trail, and use the Pratt Farm as an outdoor classroom and science lab.*
- # M-33** **John T. Nichols School**
Acreage: 69.47
Location/access: Off Wood Street and Wareham Street, and Barden Hill Road.
Ownership: Town of Middleborough, School Department
Management: School Department
Use: In Planning and development stage, includes sport field complex.
- Recommendations:** *Link the new school to the Pratt Farm with a foot trail, and use the Pratt Farm as an outdoor classroom and science lab.*
- # M-34** **Rock School**
Acreage: 1
Location/access: Miller Street
Ownership: Town of Middleborough, Board of Selectmen
Management: Presently leased to private church.
Use: Church and churchyard.
- Recommendations:** *No improvements at this time, however useful recreation land to meet future needs.*

M-35 **Flora Clarke School**
Acreage: 0.58
Location/access: Forest Street
Ownership: Town of Middleborough, School Department
Management: School Department
Use: School Administration Office

Recommendations: *No improvements at this time.*

M-36 **Westside School**
Acreage: 1.1
Location/access: West End Avenue
Ownership: Town of Middleborough, Board of Selectmen
Management: Board of Selectmen
Use: Neighborhood school. Schoolyard used for occasional pick-up games, skate boarding.

Recommendations: *No improvements at this time, however useful recreation land to meet future needs.*

M-37 **School Street School**
Acreage: 1
Location/access: School Street
Ownership: Town of Middleborough, School Department
Management: School Department
Use: Educational Facility & Grounds

Recommendations: *No improvements at this time.*

M-38 **Lincoln D. Lynch School**
Acreage: 1.07
Location/access: Union Street
Ownership: Town of Middleborough, School Department
Management: School Department
Use: Educational Facility

Recommendations: *No improvements at this time.*

#M-39 **Waste Water Treatment Facility**
Acreage: 2.9
Location/access: Everett Street
Ownership: Town of Middleborough, Water Pollution Control Board
Management: Water Pollution Control Board
Use: Waste water treatment.

#M-40 **Brook Street Sanitary Landfill**
Acreage: 20.9
Location/access: Brook Street
Ownership: Town of Middleborough, Board of Selectmen
Management: Board of Selectmen
Use: Old section is currently being capped, new section is planned.

Description: Sanitary landfill.

Recommendations: *No Recommendations at this time.*

#M-41 Tribou Property at Black Brook

Acreage: 30.2

Location/access: Marion Road at Black Brook.

Ownership: Town of Middleborough, Board of Selectmen

Management: Board of Selectmen

Use: This property was given to the Town in 1993.

Description: Wooded land along Black Brook and abutting property owned by the City of New Bedford.

Recommendations: *Property is important to protect Black Brook and Great Quittacas Pond. It should be designated for protection.*

#M-42 Tribou Property at Rocky Gutter

Acreage: 8

Location/access: Off Purchase Street, within the Rocky Gutter Management Area

Ownership: Town of Middleborough, Board of Selectmen

Management: Board of Selectmen

Use: This property was given to the Town in 1993.

Description: Completely surrounded by the Rocky Gutter Management Area.

Recommendations: *Because of its relationship to the State-owned wildlife management area, it makes sense to designate this parcel for protection.*

State of Massachusetts Secured (#S)

S-1 Rocky Gutter Management Area

Acreage: several parcels totaling +/- 3,380.98

Location/access: Several access points on Rocky Gutter Road, Purchase Street, Wareham Street, and France Street.

Ownership: Commonwealth of Massachusetts, Department of Fisheries and Wildlife

Management: Massachusetts Department of Fisheries and Wildlife

Use: Wildlife habitat.

Description: Wooded wetlands with trails, abundant and diverse wildlife habitat. Map of the area is included in the addendum. There are dirt roads, some extremely bumpy.

Recommendations: *The Open Space survey confirmed that this area is not well known. Has potential for passive uses like horseback riding, hunting, cross country skiing, hiking, bird watching and nature study. Rustic camping is allowed with a permit issued by Mass Fisheries and Wildlife. Motorized vehicles including dirt bikes and snowmobiles are not allowed.*

#S-2 Meetinghouse Swamp at Pilgrims Crossing Road

Acreage: 122.60

Location/access: Off Pilgrims Crossing Road and Plympton Street

Ownership: Commonwealth of Massachusetts, Department of Fisheries and Wildlife

Management: Department of Fisheries and Wildlife

Use: Wildlife habitat and hunting

Description: Wooded wetlands

Recommendations: *Encourage the State to develop multi-use trails to connect with a public access trail system. Improve parking.*

#S-3 Grant Property

Acreage: 69+

Location/access: River Street

Ownership: Commonwealth of Massachusetts, Department of Fisheries and Wildlife

Management: Department of Fisheries and Wildlife

Use: Wildlife habitat, hiking and hunting

Description: High ground along the Taunton River. Good trail system.

Recommendations: *Link trail system with town owned parcels and private parcels that allow public access. Improve parking, provide signs.*

#S-4 Everett Street Preserve

Acreage: 105.8

Location/access: Everett Street

Ownership: Commonwealth of Massachusetts, Department of Fisheries and Wildlife

Management: Department of Fisheries and Wildlife

Use: Wildlife habitat and hunting

Description: Natural wooded area.

Recommendations: *Provide trails, public access, signs and parking.*

#S-5 Taunton State Hospital

Acreage: 30

Location/access: South Main Street

Ownership: Commonwealth of Massachusetts

Management: Leased to farmer.

Use: Some of the land is used for farming strawberries and pumpkins.

Description: Flat farmland, adjacent to the Nemasket with irrigation.

Recommendation: *Encourage the Commonwealth of Massachusetts to follow its own mandate to protect fragile open space and designate this land for protection.*

City of New Bedford Secured (#NB)

#NB-1 New Bedford Water Works Property

Acreage: 1,470.59, in several parcels along Assawompset and Pocksha Ponds

Location/access: No access allowed to Middleborough residents

Ownership: City of New Bedford

Management: New Bedford Water Department

Use: Public Water Supply protection

Description: Wooded land along Assawompset and Pocksha Ponds, with maintained fire lanes. Historic and archeologically significant, habitat to the American Bald Eagle, once a popular recreation area.

Recommendation: *Negotiate limited access for the purposes of passive recreation.*

City of Taunton Secured (#T)

#T-1 **Taunton Water Department**
Acreage: 11
Location/access: Lakeside Avenue
Ownership: City of Taunton
Management: Taunton Water Department
Use: Public Water Supply protection

Recommendation: *No improvements necessary*

Private Land Trust Secured (#PT)

#PT-1 **The Wildlands Trust of Southeastern Massachusetts - Dodge Reservation**
Acreage: 58
Location/access: Old Center Street
Ownership: The Wildlands Trust of Southeastern Massachusetts
Management: Private land trust.
Use: Wildlife refuge, watershed protection. This site also protects a town's well site.
Description: This property contains the headwaters of the Purchase Brook as well as other streams. Gladys Dodge donated it to the Trust for protection in 1980.

#PT-2 **The Wildlands Trust of Southeastern Massachusetts - Little Cedar Swamp**
Acreage: 22
Location/access: Off Cedar Street
Ownership: The Wildlands Trust of Southeastern Massachusetts
Management: Private land trust
Use: Wildlife refuge and watershed protection
Description: Cedar swamp and headwaters of the Winnetuxet River. This was a gift of Donald and Mary Guidoboni and Kathleen Anderson in 1993.

#PT-3 **The Wildlands Trust of Southeastern Massachusetts - Medeiros Parcel**
Acreage: 18.8
Location/access: Cedar Street
Ownership: The Wildlands Trust of Southeastern Massachusetts
Management: Private land trust
Use: Wildlife refuge
Description: Adjacent to Cedar Swamp parcel consisting of successional upland forest and wetland. This was a gift of Edward, Wilmot and Richard Medeiros in 1994.

#PT-4 **The Wildlands Trust of Southeastern Massachusetts - Medeiros Parcel, Rock Village**
Acreage: 14.4
Location/access: Walnut Street
Ownership: The Wildlands Trust of Southeastern Massachusetts
Management: Private land trust
Use: There are trails open to the public.
Description: This parcel is significant because of the rock formations. This parcel was also a gift of Edward, Wilmot and Richard Medeiros in 1994.

#PT-5 **The Wildlands Trust of Southeastern Massachusetts - Powell Preserve**
Acreage: 7
Location/access: Fuller Street
Ownership: The Wildlands Trust of Southeastern Massachusetts
Management: Private land trust
Use: Wildlife habitat
Description: Red maple swamp and some Eastern white pine upland

B. Inventory of Unprotected Parcels

Although customarily considered part of the open space inventory, land with temporary conservation easements is not permanently protected. This includes the private recreation land, with a Chapter 61B conservation restriction, farmland enrolled in chapter 61A conservation restriction and forestland enrolled in Chapter 61 conservation restriction. These parcels are mapped on the **Unprotected Open Space Map** included in this plan. The following privately owned recreational open spaces have temporary conservation easements.

#P-8 **Camp Tispaquin**
Acreage: 31.84
Location/access: Purchase Street
Ownership: Private
Management: Private
Use: Camping area, seasonal recreational use
Description: Wooded camp ground, has a recreational use conservation easement under the 61B program.

#P-9 **KOA Campground**
Acreage: 113.81
Location/access: Plymouth Street
Ownership: Private
Management: Private
Use: Camping area, seasonal recreational use.
Description: Extensive wooded area with trails. This property also has a voluntary recreational use conservation easement under the 61B program.

#P-10 **Wankinquoah Rod and Gun Club**
Acreage: 195
Location/access: Pine Street
Ownership: Private
Management: Private
Use: Hunting and fishing and wildlife management
Description: Wooded land adjacent to the Rocky Gutter Wildlife Management Area.
This property also has a voluntary recreational use conservation easement under the 61B program.

Private non-profit lands (#PN) with no conservation commitment

There are two non-profit parcels included on the open space inventory chart that are completely unsecured. Since they constitute significant private recreation opportunities, are located in vital natural resource areas and enjoy tax-free status they should be encouraged to voluntarily enter into a Conservation Restriction program.

#PN-6 **Camp Avoda**
Acreage: 48.9
Location/access: Gibbs Road
Ownership: Private religious camp
Management: Private
Use: Children's summer camp
Description: Land bordering the southern end of Tispaquin Pond, with a beach.

#PN-7 **Camp Yomecas**
Acreage: 32.39
Location/access: Wareham Street
Ownership: YMCA
Management: Private
Use: Children's summer camp
Description: Land bordering the southern end of Tispaquin Pond with a beach

The *remaining unprotected* open space parcels that have been identified by the previous Open Space Committee, the Conservation Commission and the Planning Department are illustrated on the June 2008 Town of Middleborough *Protected Open Space and Priority Preservation Land* included in the Appendix. These parcels are described further in the Table that follows the map. Action Items that propose cataloging these priority preservation parcels and others are described in Section 9 of this Plan.

Section 6 - Community Goals

A. Description of the Process

The last Open Space & Recreation Plan expired as of 2003 and because of this, the Town of Middleborough was recently unable to accept grant monies awarded through the state's Self Help Grant Program. With the serious pressure the town faces from sure land development spurred from the potential Casino and South Coast Rail as well as the current commercial development boom neighboring Plymouth is experiencing, the Conservation Commission and Planning Department made updating the Open Space & Recreation Plan an immediate priority. The Town of Middleborough in their previous Open Space & Recreation Plans and since the last Plan update expiration has identified priority lands for preservation and protection. It is their intent to immediately pursue purchase or protection of these lands with the possible help from obtaining Self Help Grant money.

The Middleborough Conservation Commission initiated and directed the preparation of the 2008-2013 Open Space and Recreation Plan update. With approximately three months to prepare and distribute a draft document to the town leaders, planners and interested residents for comment and acceptance, public participation was significantly restricted. The Conservation Commission along with their Agent, Patricia Cassidy and Ruth E. Geoffroy, Middleborough Town Planner (collectively, the Plan development team) provided input and assistance to Nover-Armstrong Associates, Inc. with the development of this update. The inventory of protected open space and identified priority preservation lands were provided by the Plan development team through some assistance from various other municipal departments.

Because of the lack of adequate time to conduct a comprehensive analysis of the state of currently protected open space in the Town of Middleborough as well as the it's accurate description, the 2008-2013 Open Space and Recreation Plan relied heavily on the 1998-2003 Plan, which included a

comprehensive public survey. Sections were updated and improved where community and town official input was not necessarily needed. The maps and protected and unprotected land inventories were updated using currently available information from the Middleborough Assessor's Office, the Conservation Commission, the Planning Department and the MassGIS system. The Planning Department and Conservation Commission funded AGI, Inc., an outside GIS Specialist to assist in the development of an updated Open Space Inventory Map and updated Zoning Map as well an optional Chapter 61 Lands map for inclusion in the Plan Update. Updated GIS data will be provided to MassGIS as their inventory and data is outdated and inaccurate. A significant amount of time and budget for this Plan update was allocated to the development of more accurate GIS data and maps. Additional map improvements will need to be completed with each yearly internal Plan update.

The draft 2008 – 2013 Open Space and Recreation Plan was distributed to the Planning Board, Board of Selectman and Southeast Regional Planning and Economic Development District (SRPEDD) for their review and comments attached as an Appendix. They understand that this Plan Update will undergo yearly internal updates going forward that includes a public involvement component as this update was unable to do due to time constraints.

The Community Goals and Action Items were identified and developed during the Plan update development process. They are presented in a broad fashion for subsequent tailoring and implementation by the Open Space Plan Committee or equivalent over the next five years and for each internal yearly Plan update.

B. Statement of Open Space and Recreation Goals

Consistent with surveys conducted throughout the last 15 years and according to the 1998-2003 Open Space & Recreation Plan, the residents of Middleborough have overwhelmingly indicated that protecting the intrinsic quality of life, defined as traditional, small town, and rural, to be the highest priority. Instilled with a strong sense of community, residents identify with their landscape, farm and forestland, cranberry bogs, abundant and diverse wildlife, historic past, villages and each other.

This New England hometown can be characterized by the farmers' market, an animated town meeting, and a ramble through the woods or the Fourth of July Parade on Titicut Green in North Middleborough. Crime is low, traffic is still sparse and the nights are quiet. More than the scenic qualities, Middleborough rural-ness is described as *a feeling*. It is this quality of life, binding the community to the natural resources and historic culture in a very intimate way that must be preserved. While protecting valuable resources, it is the goal of this plan as well as the past plans to provide abundant access to residents so that they may continue to appreciate the wonder of their environment.

Section 7 - Analysis of Needs

Relative to the overall goal for the town as stated above, resource protection needs to derive from an inventory and evaluation of natural resources as identified by a compendium of sources including soils maps, estimated habitat maps, water supply maps, wetland maps, historic and archeological maps, detailed conservation plans, open space maps, farm, forest and recreation maps, river way plans and parcel maps, zoning maps, park plans and other sources. Community needs were previously identified in the 1998-2003 plan through reviewing two different citizen surveys, past plans and policies, open forum discussions and working with a variety of town officials and interest groups.

A. Summary of Resource Protection Needs

In order to preserve the quality of life in Middleborough it is essential to attend to the following resource protection needs. This is consistent with the community needs, which are fundamentally inter-dependent.

- Protection of current and future drinking water supplies.
- Protection of river and stream corridors.
- Protection of buffers adjacent to surface water bodies.
- Preservation and protection of wildlife habitat.
- Agricultural sustainability.
- Continued Timber Stand Improvements through forestry management.
- Preservation of scenic vistas.
- Maintaining buffers of undeveloped land.
- Preservation of the town's unique cultural history.

Middleborough is a large town by area that includes land bordering a major drinking water supply in southeastern Massachusetts - Assawompset Pond, Pocksha Pond and Great Quittacas Pond all interconnected and known as the Middleborough-Lakeville Pond complex. This is also a potential future water supply for Middleborough. Assawompset and Pocksha Ponds form the headwaters of the Nemasket River that runs north through the center of town. Management of the dam on Assawompset Pond to the Nemasket River most directly effects the welfare of the entire river corridor and the diverse habitat that it supports, including the range of the American Bald Eagle and the most significant anadromous fish run in Massachusetts (Massachusetts Division of Fisheries and Wildlife). River flow also directly impacts historic Oliver Mill Park on the Nemasket River. Fall Brook and attending wetlands contribute flow to the Nemasket River from Tispaquin Pond.

The Nemasket River joins the Taunton River in an area of archeological significance, and together, becomes part of the Wampanoag Canoe Passage connecting Cape Cod Bay in the north to Narragansett Bay in the south. These river corridors contain a wealth of historic and archeological sites, diverse natural habitats, aesthetically beautiful natural areas, and farm and forestland. The Taunton River is the second largest watershed in southeastern Massachusetts, and in addition to the resident wildlife, is also a migratory stop along a north to south flyway.

Middleborough Public Water Supply wells are located south of Tispaquin Pond, and along the Nemasket River Valley, within the Taunton River watershed. This riparian beltway, including Assawompset, Pocksha and Great Quittacas Ponds, Tispaquin Pond, Woods Pond, Fall Brook, Black Brook and Purchase Brook(s), along with the Taunton River and the Nemasket River, requires careful consideration and protection.

In the eastern part of the town, the Weweantic River and contributing streams and brooks, including Crane Brook and Double Brook, also provide a diverse wildlife habitat and support the reservoirs of the local cranberry wetland agriculture. The Weweantic River is within the drainage basin of Buzzards Bay, and is entirely recharged through ground water. In order to continue viable cranberry agriculture in Middleborough (known as the cranberry capitol of the world), it will be essential to protect the Weweantic River from over development and loss of recharge potential.

The ranking of resource protection needs, according to the 1997 Open Space Survey was: 85% of the respondents thought it was very important to preserve open space, 84% to preserve wildlife habitats, 75% to preserve forested land, 82% to preserve land along rivers, 78% to protect park land, 81% to preserve agricultural land, 76% to preserve historic sites, 75% to save open space buffers within developed areas,

70% to protect scenic vistas, and 65% to preserve archeological sites. Asked whether or not tax dollars should be used to acquire land, 32% said yes, 51% said that it depended on the situation; indicating that 83% would be willing to spend tax dollars on land acquisition depending on the situation. 81% of the respondents registered concern over the impact of development to natural resources, as a result of the rail improvements. We assume that similar results would be seen in a more current Open Space Survey.

B. Summary of Community Needs

- Preservation of rural qualities.
- Preserve agricultural land use.
- Protection of historic sites.
- Protection of scenic roads.
- Protection of archeological sites (Native American significance).
- Preservation of air, water and sound quality.
- Improve handicapped access in all recreation areas.
- Provide wholesome recreational activities for Middleborough youth.
- Improve and maintain recreational properties.
- Provide ample access to water resources for recreation.
- Develop multi-use trails for horse riding, hiking, x-country skiing and snowmobiling.
- Maintain access to forestland for fishing and hunting.
- Provide access to Assawompset, Pocksha and Great Quittacas Ponds for limited recreation and wildlife appreciation.
- Participate in the management of the dam on the Nemasket River.
- Develop bike paths as an alternate mode of transportation and recreation.
- Develop picnic areas particularly near a swimming beach.

According to the 1997 Open Space Survey, 71% of respondents identified Middleborough as a rural community. Asked what they liked best about living in the town, most identified aspects of small town living including, open space, farming, low crime rates, quietness, clean air and water, forestland and friendliness. Consistent with every survey conducted throughout the last 15 years, the residents of Middleborough have overwhelmingly indicated that protecting the rural, small town quality of life is the highest priority.

Middleborough adopted open space zoning as a method of protecting rural characteristics while allowing for new development. It was anticipated that this by-law would encourage creative landscape designs within subdivision plans that would be less land consumptive and environmentally and aesthetically pleasing. This provision has been underused in part because local land developers lack experience with this type of land use design.

Historic and archeological sites have always been most important to Middleborough residents. Not surprisingly, these sites happen to be located in the most sensitive natural resource areas, principally along the rivers and streams (throughout history used for water, fishing, hunting and transportation). Some areas are protected while others are particularly vulnerable. Fort Hill, one of the most historically and archeologically significant sites in Middleborough is currently unprotected and vulnerable.

Oliver Mill Park, on the Nemasket River is an historic, recreational site that is also significant to the herring running up the Nemasket. Improvements to Route 44, abutting the park could significantly impact the condition and uses of the facility. The Park Department has developed an improvement plan included in the addendum of the Open Space Plan that should be implemented in order to preserve this

historic site, enhance the recreational access, including handicapped accessibility, and protect the river corridor at this location.

With 31 miles of river flowing through the town, there is very little publicly owned access, or protected habitat and open space. Aside from acquiring land along waterways, access can be provided by developing launch areas and parking places along public rights of way, against bridge abutments and in sub-division plans as they are approved. Residents clearly need public access to enjoy the traditional Wampanoag Canoe Passage, which encompasses 76 miles of paddling between Battleship Cove in Fall River and Cape Cod Bay.

Multi-use trails are needed to access public open space and woodland currently available in town. Over 50% of the respondents indicated that they currently hike, bike and picnic in town with family members, and many people requested hiking trails in the write-in portion of the questionnaire. Horse trails have also been requested by an interested group of residents. This is also consistent with past plans and surveys. Moreover, trails would enable greater access for a variety of uses to all public open space. In addition, there is a group in town interested in pursuing bicycle paths. Private property rights should be respected and trail easements should be legally obtained in cooperation with property owners.

One of the most pristine natural places in Middleborough is currently off limits to even the most casual and passive appreciation: Assawompset Pond, Pocksha Pond and Great Quittacas Pond, part of the Middleborough/Lakeville Pond system known as the New Bedford Water Works. Historically, Native Americans in several successions settled the area. Later, the ponds were popularly enjoyed for recreation and at one point included a popular riverboat from Assawompset Pond up the Nemasket River. Today, the City of New Bedford owns all of the surrounding land that is not private, and currently prohibits access to Middleborough residents. Lack of any public access and hence appreciation is a long-standing problem.

There is no public swimming area on any of the ponds in Middleborough. 47% of the respondents stated that they would like to have a public swimming/picnic area on Tispaquin Pond. This area of town has a high build-out anticipation, which makes a public recreational open space highly desirable in the Tispaquin area. There are also town wells on Tispaquin Pond, which is also within the Nemasket River Corridor, a desirable natural resource zone.

The surveys included many comments on maintenance and improvement of town owned recreational land. Suggestions include developing a map of existing facilities, trail development, better communication and cooperation between administrative committees, and a system of volunteer stewardship.

C. Sport Field Needs for Middleborough Youth Organizations

Over a thousand boys and girls participated in league baseball, football and soccer in Middleborough in 1997. Although these organizations are private non-profit, they are available to all children in Middleborough and provide a wholesome outdoor recreational activity for student athletes and their families. Promoting organized activities for Middleborough's youth is a community goal.

The most acute need for field space is in Little League and Babe Ruth baseball. There are currently 610 children playing Little League and 150 children playing Babe Ruth, involving boys and girls from ages 8 to 18. Today, there are four regulation Little League fields in town and two additional practice fields. There are only two regulation Babe Ruth League fields, which are used by 10 Babe Ruth teams and shared with the High School, Junior High and one semi-professional team for practice and games. There are clearly not enough game fields for Babe Ruth, and not enough practice fields for Little League. Based on a most modest population projection, a minimum of four little League baseball fields will be required

within the next four years. Two additional Babe Ruth fields are needed immediately. Adding lights to the Babe Ruth fields could extend the practice time.

In the late 1990's Middleborough Youth Soccer Association included 450 boys and girls ages 4 to 16. This number has surely grown and is anticipated to increase substantially with the anticipated land development spurred by infrastructure improvements, transportation improvements, the South Coast Rail extension, and the potential casino resort between Route 44 and 105 in northern Middleborough. They currently play and practice on three fields located at Purchase Street and one other newer field located on Grove Street. Ideally, the soccer association needs six new fields to meet the current and projected use requirement.

Pop Warner football involved 96 football players and 48 cheerleaders in 1997. The league included children ages 8 to 13. They currently have one game field and one practice field for their use. With lighting, game and practice time could be optimized. The field space meets the leagues current and expected needs.

Section 8 - Goals and Objectives

The following list provides concrete objectives to meet the general goals identified in Section 6 of this Plan.

- Protect ground water resources including current and future Public Water Supply well sites and Zone I, II and IIIs. Evaluate, prioritize and preserve or protect parcels necessary for protection of existing Public Water Supply Wells and their Zone of Contribution – Zones I, II and III and existing Public Surface Water Supplies and their watersheds.
- Identify and prioritize parcels critical to the protection of Middleborough's and the region's water resources protection / acquisition including riparian zones and adjacent watersheds.
- Initiate critical land protection and recreational opportunities on a regional level including the City of New Bedford, adjoining towns, and non profit organizations such as the Taunton River Watershed Alliance, Inc.
- Manage and improve the Nemasket River ecosystem to encourage recreational use of and on the river while at the same time, improve the anadromous fish run by various conservation and restoration means.
- Explore the possibilities of creating a Nemasket /Taunton River Corridor designation similar to the Natural Heritage Corridor (Blackstone Valley), State Heritage Corridor, or Greenways State Park (Connecticut River Valley). Support efforts of involved communities in nominating this corridor for distinction.
- Preserve the rural character of the community by acquiring and protecting agricultural land, open space, scenic roads and vistas, and local villages.
- Preserve and promote historic villages throughout town with the adoption of local Historic District designations. Promote land uses within village areas that complement the village center.
- Protect and maintain the abundant diversity of natural and rare habitats in Middleborough.

- Educate the community on the values of open space protection including the advantages of conservation easements and restrictions. Work with land trusts to see that preservation goals are met and educate landowners regarding tax incentive options.
- Improve all existing town-owned open space parcels with special recreational value including trail improvements, public awareness enhancements, public facility improvements, handicapped access improvements, Timber Stand Improvements, invasive specie controls, etc.
- Implement Open Space and Recreation Planning on a more regional basis.
- Support continued viability of agriculture and forest land management through education, best management promotion, and incentives, zoning and promoting “buy local produce”.
- Discover and preserve / acquire historic and archeological sites.
- Provide plentiful and updated, compliant recreational opportunities for residents and visitors on town owned properties. Promote use of open space owned and managed by others through education and publicity.
- Promote the use of non-motorized modes of transportation throughout Middleborough, eventually linking to adjoining towns.
- Acquire increased accessibility to open space owned and/or maintained by other for recreational opportunities for Middleborough residents.
- Promote hunting and fishing opportunity in Middleborough through encourage Mass Division of Fisheries and Wildlife to stock appropriate ponds and rivers in to improve local fisheries; continue pheasant and quail stocking programs at Great Cedar Swamp and on private land; encourage land owners to allow access to privately owned open space for hunting.
- Provide and promote wholesome organized recreational activities for Middleborough youth including acquiring and improving additional open space for athletic fields and parks as well as maintaining existing facilities.
- Promote private recreational businesses that conserve open space values and protect wildlife habitats.
- Develop Forest Management Plans including forest stand type map for each town-owned forested parcel to promote Timber Stand Improvement.
- Prepare to-scale site maps for each town-owned open space parcel with public access availability that illustrate existing site conditions including forest stand types, foot and bike trails, public amenities, parking areas, unique features, etc. This map will be available on the town-managed web site.

Section 9 - Five -Year Action Plan

Successful attainment of the goals and objectives listed in Section 8 will require constant, deliberate collaborative effort by the Town of Middleborough. Beyond the submission and approval of this 2008-2013 Open Space & Recreation Plan update, a team of individuals will need to formerly implement actions identified in this Plan to continue the success story that took place at the May 2008 Town Meeting where the citizens of Middleborough declared the direction in which they would like open space preservation to take by voting to purchase *both* the Freitas and Gibbs properties – in a time of economic uncertainty. To meet the objectives listed in Section 8 – Goals and Objects, the following Action Items:

Year 2008 - 2009

- Re-instate the Open Space Committee or equivalent;
- Open Space Committee or equivalent (the Committee) shall evaluate the 2008-2013 Open Space & Recreation Plan Update prepared by the Conservation Commission and Planning Department with the assistance of Nover-Armstrong Associates, Inc. The goals and objectives presented in Section 8 of this Plan shall be further defined, revised and prioritized by the Committee. These refined goals and objectives shall be adopted and published.
- Citizen input in open space and recreation planning is critical to its overall success. The Committee shall evaluate the need to conduct an *immediate* Open Space Survey. This Action Item may be more effectively conducted in Year 2009-2010 after the Committee is formed and in effect for one year. The Open Space Survey could be accomplished through the use of the town's website in addition to other more feasible means. One of the goals of the survey would be to prioritize the wants and needs of the residents of Middleborough. For example, would the residents prefer to see maintenance of existing open space and recreational land or development of recreation amenities (e.g. trails) as the state-wide Open Space Plan survey reported (southeastern Massachusetts included).
- Establish a sub-committee to develop the standard procedure for identifying critical open space and recreation land for protection and /or acquisition. This procedure will be used to prioritize parcels for protection. Those priority parcels will be formally identified and a proposal will be developed that describes all available means of permanent protection or acquisition.
- Develop an Article to present at the May 2009 Town Meeting that identifies the lands identified for priority preservation and ask the voters to approve their acquisition, when they become available. This will eliminate the need to present each priority parcel to the voters individually when they become available. This Article can be developed with the assistance of the Town Planner.
- Establish a sub-committee to formally catalog all town-owned parcels. Each parcel shall be evaluated for needed improvements; recreational opportunities; unique features; American Disabilities Act compliance issues; and descriptive information available. A separate file shall be developed for each priority preservation parcel and a separate required Action Item list developed.
- Establish a sub-committee to research available grants and partnerships to permanently preserve either through acquisition or conservation restrictions / easements.

- Establish a GIS sub-committee to manage GIS data and coordinate plan updates as necessary. This will be a collaborative effort between the Committee, the Assessor's Office, Conservation Commission and Planning Department. This sub-committee will also develop a hyper-link on the Town of Middleborough website that will provide the residents in Middleborough as well as the region, with descriptive information on each town-owned open space and recreational parcel. Including location, amenities, acreage, and public recreational opportunities. The goal for this five year passage is to develop a to-scale map of each town-owned open space and recreation parcel that will be available on the town's website as well.
- Establish a sub-committee to explore presenting the *Community Preservation Act* to the resident voters of Middleborough. The Community Preservation Act is a key component to open space and recreation land permanent preservation.

Year 2009 - 2010

- Develop and publish for *internal town use* an updated 2008-2013 Plan that reflects necessary revisions / corrections to the maps and information; finalized list of priority parcels including their detailed descriptions; and refined goals and objections (Section 8) and Five-Year Action Plan (Section 9). Successes and information gathered during the implementation of the Action Items will be included or appended to the updates.
- Updated and more detailed information regarding the town's cultural history will be researched for inclusion in the yearly internal update. Emphasis towards historical and cultural resources will be consummate with the Middleborough residents and the Committees prioritized goals and objectives based on surveys and other means.
- Solicit local colleges, vocational schools regional planning agencies and / or local talent to develop to-scale maps of town-owned open space and recreational land. These maps will be available on the Town of Middleborough website.
- Begin *regional* open space and recreation planning by collaboratively identifying and permanently protecting river corridors and core habitats; promoting connectivity of open space across town-lines; and working collaboratively to obtain grant monies to achieve these tasks.
- Continue the promotion of the Community Preservation Act in the town.
- Catalog all parcels with Conservation Restrictions or Agricultural Protection Restrictions. Each property will be evaluated to ensure that they are being managed in accordance with their legal restrictions.

Year 2010-2011

- Develop and publish for *internal town use* an updated 2008-2013 Plan that reflects necessary revisions / corrections to the maps and information; finalized list of priority parcels including their detailed descriptions and to-scale maps as they are developed; and refined goals and objections (Section 8) and Five-Year Action Plan (Section 9). Successes and information

gathered during the implementation of the Action Items will be included or appended to the updates.

- Research the implementation of Timber Stand Improvements (TSI) on town-owned forested lands. TSI's promote the growth and sustainability of quality timber; improves wildlife habitat; and improves watershed management if done correctly.
- Implement trail improvements identified in 2008 – 2009 during each town-owned parcel's evaluation.
- Initiate and implement vernal pool certification on town-owned land.

Year 2011 - 2012

- Develop and publish for *internal town use* an updated 2008-2013 Plan that reflects necessary revisions / corrections to the maps and information; finalized list of priority parcels including their detailed descriptions and to-scale maps as they are developed; and refined goals and objections (Section 8) and Five-Year Action Plan (Section 9). Successes and information gathered during the implementation of the Action Items will be included or appended to the updates.
- Initiate trail construction on town-owed open space for passive recreation (hiking, walking, photography, etc.)activity.
- Research privately-held open space for potential public passive recreation (trail connectivity, etc.) and hunting.

Year 2012 - 2013

- Develop and submit the 2014 – 2019 Open Space and Recreation Plan Update to the Massachusetts Department of Conservation Services for approval.

Section 10 – References

A. Town of Middleborough

Communication with Conservation Commission
Communication with Planning Department
Town Clerk Figures
The Middleborough Historic Commission
The Middleborough Council on Aging
Town of Middleborough, MA Community Development Plan dated June 7, 2004; Prepared by Larry Koff & Associates
Middleborough Master Plan: Report on Findings and Alternatives (2002)
1998-2003 Open Space and Recreation Plan

B. Open Space Documents

The 1998-2003 Open Space Plan
Open Space and Recreation Planner's Workbook
2006 Statewide Comprehensive Open Space Recreation Plan

C. State Resources

NHESP: A Field Guide to the Animals of Vernal Pools (May 2001)
NHESP Biomap
Massachusetts Bay Transit Authority (MBTA)
Massachusetts Executive Office of Energy and Environmental Affairs (EOEA)
Massachusetts Department of Environmental Protection, Division of Water Supply
Living Waters: Guiding Land Conservation for Biodiversity in Massachusetts, 2004

D. Federal Resources

U.S.D.A Soil Conservation Service Soil Survey for Plymouth County, 1969
US Census Information, 2000
Southeastern Regional Planning and Economic Development District (SRPEDD), Town of Middleboro, MA;
The Natural Resources Conservation Services (NRCS; U. S. Department of Agriculture)

E. Private Organizations

The Nature Conservancy
Taunton River Watershed Alliance: People Working to Save a Great River
The Greater Attleboro-Taunton Regional Authority (GATRA)
The Massachusetts Archeological Society
The Taunton River Stewardship Program (TRSP)

F. Other Sources

Big Yellow Taxi by Joni Mitchell
Taunton River Stewardship Plan (July 2005)
The Wildlands Trust of Southeastern Massachusetts (September 1998)
Kathleen Anderson in the Bird Observer, vol. 24, no. 1
University of Massachusetts Vegetation Survey, 1980