

MIDDLEBOROUGH MASTER PLAN

Report on Findings and Alternatives

MIDDLEBOROUGH



Vision 2020

**Looking From The
Present, Through
The Past, Into The
Future.**

Prepared for the Town of Middleborough

Prepared by The Cecil Group, Inc.

with
Bonz/REA
The BSC Group

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Middleborough Master Plan

Report on Findings and Alternatives

I. INTRODUCTION

A. Purpose of the Findings and Alternatives Report

This report is a substantive part of the town-wide program to create a twenty-year Master Plan for the future of Middleborough. It includes a list of goals and objectives that might best fulfill a vision for the Town for decades to come. It then documents key facts and trends that will shape the decisions ahead. This report also lists alternative policy and action choices that the Town might make to achieve its goals and objectives, taking into account both the opportunities and constraints that exist today.

This report seeks to help inform discussions and debates that will result in a list of preferred choices for policies and actions. These preferences will then comprise the essence of the new Master Plan for Middleborough.

The Town of Middleborough has undertaken this master planning effort to establish a clear path for public policies and actions over the next twenty years. This master plan is being conducted by the Town through the collaborative efforts of many citizens, boards, commissions, elected officials and Town staff.

As the Town begins the 21st century, a master plan could be an essential guide. Many participants recognize that Middleborough may be at a crossroads in terms of its character and quality of life. For many generations, Middleborough has retained an independent identity; a rural community with an intact town center and a high quality of life for people of many income levels and lifestyles. However, the emerging regional economy, trends in transportation and land use, and the steady suburbanization of the greater Boston region could lead to significant and undesirable change. Therefore, managing change to better meet the Town's vision of the future is a fundamental purpose behind this Plan.

This effort also recognizes the potential to support Town services and investments by linking short-term needs to long-



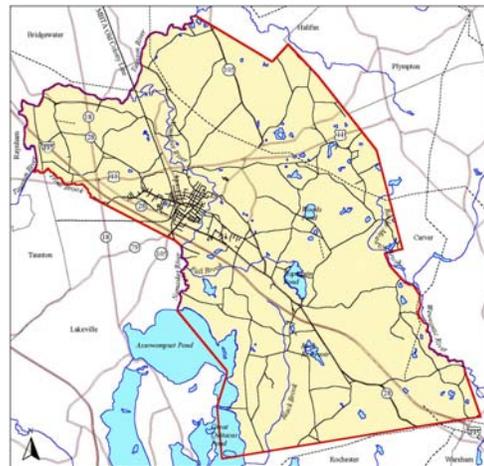
term strategies that are widely understood and supported. A master plan could serve as a reference and guide for the boards, commissions and Town staff to help ensure that common goals are met.

This section of the Report begins with restatement of the Vision for Middleborough that has been developed to establish a foundation for the Plan and the efforts associated with its preparation. It briefly summarizes the master planning process, so that the reader can best understand the context of this Report and how it has been assembled. Finally, this section of the Report describes the organization of the contents, so that the reader can easily navigate through its various parts.

B. Vision Statement

The following Vision has been prepared in draft form through the leadership of the Middleborough Master Plan Committee, which is the stewardship group for the preparation of the Plan.

Middleborough is physically defined by its open space, rivers, bogs, forests and farms. The Town has recognized the value of these resources and intends to protect them along with its other valuable natural and historic resources for the current and future quality of life. However, the Town of Middleborough is also defined by its residents, their desire to live in this community and their hope for its future prosperity.



The Town should be a family-oriented community that puts its residents first; in which the pride of the community is reflected first in its people and natural resources and then in its developed areas and buildings. It should maintain its small-town character in its village identity and thereby maintain its history. These directives will be accomplished through carefully designed development that minimizes inappropriate utilization of existing resources and balances economic development with well-maintained open spaces, clean air and clean water.

Middleborough should provide a high quality of life for people of all ages and abilities. Middleborough should be defined as one community of many parts, intimately connected by its infrastructure. But this infrastructure should not adversely impact the valued natural resources. As such, the Town plan includes a well-networked system of public services, such as schools, libraries and recreational areas, transportation, and communications that do not derogate from the overall desire to protect the Town's valuable natural and historic resources.

Development within Middleborough is needed to support the continually expanding population, which in turn is generating economic development that supports the community tax base and consequently supports continued and expanding local service requirements. However, commercial development must be targeted to locations determined through a consensus of the residents as appropriate for modern construction and commercial land use.

This vision depends on active protection and funding for open space and historic resource preservation. It also depends on development that is intelligently planned, of high quality and that contributes to the community as part of a strong economy and tax base. Finally, it depends on the active and coordinated participation of the Town as a whole, through its government and its people. The future Middleborough will be the result of controlled growth and change; driven by a regional economy, but effectively influenced by the desires and direction provided by the Town's residents.

C. Summary of the Master Planning Process

This report has been prepared as part of the ongoing comprehensive master planning process in which the Town is engaged. The Master Plan is the responsibility of the Town's Planning Board, and is being guided by the Middleborough Master Plan Steering Committee. This committee of citizens represents a broad range of community interests and concerns. The Town Planner is providing the staff direction for the preparation of the Plan. A consultant team has assisted in the preparation of this report and in the facilitation of meetings and discussions that have been part of the Master Plan process. The consultant team is lead by The Cecil Group, with contributions from the BSC Group (transportation planning and civil engineering) and Bonz/REA (economics and housing).

The planning process has included reviews of previous plans and reports, the assembly of existing data, and interviews with Town staff, elected officials, representatives from boards and commissions, and citizens. Community participation is a fundamental component in the development of the Plan. To this end, a series of public workshops for the Master Plan were held in the spring of 2000. Meetings and discussions were used to establish an initial vision and goals and objectives for the future. Further discussions were used to compile options for the Town that might lead to the fulfillment of its goals and objectives. This Report consists of the results of these steps.

Future steps will include: reaching conclusions on the best strategies for the future, the preparation of a Draft Plan for public review, and the approval of the final Master Plan.

D. A Guide to the Use of this Report

This report is composed of six separate sections that address the elements of the Master Plan (Land Use; Natural, Historic and Recreational Resources; Demographics and Housing; Economic Development; Traffic and Circulation; Public Services, Facilities and Capital Investment).

After a brief introduction, each section lists the goals and objectives that have been created for that element. Then, key findings are presented so that the reader might quickly grasp an overview of the issues that will help shape the future. The next portion of each section explores the facts and trends that have been the focus of the planning effort. The final portion of each section considers the choices – called “alternatives” – that the Town might consider to help guide its future.

II. FINDINGS AND ALTERNATIVES

A. Land Use

1. Introduction

Middleborough is the second largest town in Massachusetts by size, with over 70 square miles of land area. It has an abundance of open space, including extensive tracts of natural areas. With its relatively small population, the low-density land use pattern has contributed to both its image and the way of life of its citizens.

This section of the report addresses the use of land within the Town. It includes an evaluation of existing land uses and considers the regulatory and land management framework that guides land use today. Although it considers such issues as open space, infrastructure and natural resources within the overall context of land use, special emphases on those issues and others are contained in other portions of this document.



2. Goals and Objectives for Land Use

Among the goals and objectives advanced by the Planning Committee, the following have particular relevance to Land Use. The goals and objectives provide a context for the findings and alternatives that have been developed for Land Use.

Goal

Protect Middleborough's unique character and image

Specific Objectives:

- Prevent Middleborough from becoming a suburb to another city.
- Continue Middleborough's historic role as both a regional industrial center and a rural community.
- Consider reforming the *Permanent Growth Study Committee*.

Goal

Reinforce the community's sense of Middleborough as a place to settle and raise a family.

Goal

Preserve agricultural land, open space, natural resources and other large tracks of land throughout Middleborough.

Goal

Reinforce village identities that convey a sense of place or concentration of uses. Develop strategies to strengthen these village areas as local centers of business and social activity.

Goal

Actively reinforce the downtown as a healthy economic area that continues to function as the vital center of Town government and the community as a whole.

Goal

Designate areas of town that would be most suitable for commercial development and aggressively pursue and support potential businesses for those locations.

Specific Objectives:

- Prepare strategic development plans including infrastructure needs analysis, design guidelines and optimum build-out plans.
- Provide appropriate regulations for Middleborough's General Use District, Industrial District and Business District Zoning to support the most desired development patterns such as village-scaled business, manufacturing and multi-use districts.
- Update zoning regulations with design guidelines, design review and comprehensive planning provisions for new business development.
- Change zoning to reduce conflicts between existing residential and potential commercial uses.

Goal

Maintain the Town's rural character by providing the opportunity to combine natural resources with economic development such as recreation, eco-tourism, and agribusiness.

3. Key Findings

The land use evaluation emphasizes several fundamental findings that should shape planning for the future of Middleborough:

- Middleborough contains substantial amounts of developable land for both residential and commercial uses under current zoning regulations.
- Middleborough developed as a series of distinct rural villages or hamlets; this is a pattern is still visible, but it is fading and may disappear unless the Town takes action to preserve it.
- Open space is a major resource within the Town that contributes to its image and way of life. Land use planning must continue to expand the preservation of open space resources throughout the Town, with an emphasis on retaining connected corridors of natural environments.
- If the Town seeks to channel and manage growth, then additional regulations will be needed.
- The current zoning standards for General Use allow an excessively wide range of uses and are too large relative to likely demand for general commercial uses.
- The lack of coordinated site planning and use controls can limit the Town's ability to support high quality, high value development patterns that will best enhance the tax base and meet the goals and objectives of the community.
- The current residential and mobile home park regulations permit development patterns that differ from the Town's vision to retain its rural character.
- The Town uses a special "cluster" provision to promote open space protection within qualifying single-family developments. However, the provisions of this regulation could provide additional standards or guidelines to further meet the Town's vision.
- There appears to be a preference for very large residential lots in some areas of the Town due to the nature of the market demand and the rural character of the existing uses; new regulations or incentives are required if Middleborough is to reinforce very large lot development.
- The land use patterns reflect a rural character that is, in part, a reflection of lifestyle choices as well as remaining farms and agricultural activities. This includes families with relatively small properties who maintain animals or simply open space as an amenity. Land use regulations need to recognize the practical needs of the population that have made Middleborough their home because of its image and land use patterns.

4. Existing Land Use Conditions and Trends for the Future. Land Features and Land Use

Major geographic features and geological history dramatically influence land use in Middleborough. As more fully described in the section on Natural Resources, the Town occupies land near the final extension of great glaciers that once coated New England. The advancing glaciers flattened the topography. The range of elevations in the Town is less than one hundred feet. The advancing and retreating ice left great deposits of sandy soil and gravel that are highly permeable by water. Enormous blocks of isolated ice left unusual depressions in the low-lying land. In some locations, temporary lakes formed along the retreating glacier and deposited great quantities of dense clay that water cannot easily penetrate. Boulders were dropped in haphazard patterns, but the underlying bedrock remains largely covered by loose material that was once concentrated at the edge of the glaciers. Bedrock is not exceptionally deep, and can typically be reached within 50 and 100 feet from the surface.

As might be expected, the resulting lowland characteristics are dominated by the interaction of water and land. The major waterways of the Taunton and Nemasket Rivers pass through the area. A wealth of lakes, ponds and “kettle hole” bogs occupy low-spots, remnants of the pattern of the retreating ice. A substantial amount of the low land is filled with swamps and wetlands, some of them very large. These surface waters and wetlands permeate the landscape and are connected by stream and river corridors with wet conditions along their edges.

The topography and geology have left “islands” of upland. These upland areas have been used for farming and the functions of a town – its housing, commercial and civic uses. The wetlands and their natural history created related benefits. Cranberry cultivation was well suited to both the soils and wetland topography. Bog iron could be obtained from deposits, and was a source of early industry.

The influence of geology will be preserved in the future for several reasons. Open space regulations over the past 30 years protect wetlands, and will preserve most of them indefinitely, concentrating land use on upland areas. In addition, the open land and underlying soils provide an excellent resource for clean water supplies. Large areas of land are being reserved to protect aquifer and surface water supplies, for the Town and for the region. Finally, those areas that have dense clays that are not permeable may continue to discourage development that relies on septic systems.

Publicly-controlled open space is another result the natural history of the area. Large continuous tracts of land that were largely undeveloped and that include major lakes, ponds, wetlands and bogs have become regional opportunities for preservation. As a result, Middleborough contains extensive preserved lands, and these will likely be expanded in the future. These resources, such as the Rocky Gutter Wildlife Management Area, the Assowompset Pond complex and land along the Taunton River are discussed at greater length in the chapter on Natural, Cultural and Historic Resources.

b. Historical Development Patterns: The Village Structure

The predominant land use patterns in Middleborough began with the natural conditions, and were subsequently affected by its the evolving patterns of settlement within the region. Many towns in New England grew from a single central location, and then spread outwards in a radial pattern along the roads that connected town centers to the region. The development pattern of other towns has been limited by major geographic features – clustering around a deep-water harbor, or perhaps constrained within a steep-walled valley. Middleborough’s historical development pattern was quite different, and is rare.

The “islands” of upland left among the wet lowlands were desirable locations for most land uses, and roads were easily built across the sandy soil if they skirted the surface waters and wetlands. In this way, 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 is visible in many locations today, although their identity has often become obscured by time and the imposition of subsequent development.

This master plan recognizes the importance of the village structure as a potential organizing element for future land use. The identity of each village and the relevance of the structure is subject to interpretation, and will require more detailed investigation if they are to serve as the basis of a renewed community image. Some are quite obvious, such as the crossroads at Rock Village in South Middleborough. Some villages can be perceived through the visual clues of small greens, or in a collection of historic buildings. For the purposes of this Master Plan, the following locations are considered as part of the relevant village fabric:

- Titicut Green (also called North Middleborough Green) – This village is centered upon the intersection of Pleasant and Plymouth Streets, not far from the Taunton River. It dates from the earliest colonial times, with some of the land having been given to the townspeople by Native Americans. It was an early manufacturing center, close to gristmills, sawmills, a shipyard and an iron furnace along the nearby river. The crossroads held sites for early churches and houses for prominent families, of which outstanding examples remain. The continuity of the historic buildings and their setting mark this area.
- Eddyville – This village is centered upon the intersections of Plympton, Dedar and Carmel Streets. It surrounds a small green with an intact collection of historic buildings that recall its past. Among the historic remnants is the Eddy homestead, at the corner of Cedar and Plympton Streets.

- Waterville – This village is located along Plymouth Street between Carmel and Wall Streets, south of Route 44. This was primarily an early industrial district, including an early iron furnace using bog iron extracted from ponds and a sawmill.
- Middleborough Center – Middleborough Center retains the historic pattern of a mid-19th century town center, with the associated mix of civic, commercial and residential land uses in a dense and coherent pattern. It was known traditionally as Four Corners because of the crossroads that define the Center. In addition to the commercial uses that clustered in and near the Center, this area became the preferred location for the large homes of affluent residents, particularly along South Main Street.
- Rock Village – This historic cluster is located along Miller and Smith Streets in South Middleborough. Rock Village retains a number of historic structures reaching back to its commercial origins, including sawmill and manufacturing. A rocky outcrop was the site for early religious camp meetings, and gave the village its name.
- The Green – This village is located at the intersection of East Main Street and Plymouth Street, and includes an historic open space known as The Green. The historic roots of this village reach back to the 17th century; the village was the site of the First Church. Relatively few residential structures remain from early times, but the Congregational Church and Green School provide links to the past.

c. Regional Location and Land Use

Middleborough's land use patterns have also been strongly influenced by its regional position. Relatively remote from the major urban centers, it was nevertheless central to a large agricultural region; it historically served as a business and trade center for smaller, surrounding communities. Its location along rail lines and proximity to major ports and markets fed its industrial development during the nineteenth century, attracting investment and residents to work in the businesses that grew.

Its central location between larger communities, and in the region overall, led to the creation and expansion of a highway network that crosses through the Town. Route 28 was once a significant connector road to Cape Cod; early business development along this road sought to take advantage of the traffic. But higher-speed connections were built, and Route 44 and I-495 are major regional highways that help support the commercial uses that find advantage in regional accessibility.

The central location of the Town is also supporting suburban land development. Middleborough was once remote from the major employment center of Boston. But as commuter rail connections have been restored, more tolerable commuting is available. In addition, the employment base within the region has become geographically dispersed,

spreading along the Interstate and major highway corridors. These centers, along Route 128, I-495, I-95, Route 24 and other locations, are well within reach of Middleborough residents. The resulting residential and commercial development patterns cater to the flexibility and convenience of the automobile. This pattern can be seen in the subdivision development of single-family homes and in the concentration of commercial uses along arterials and interchanges.

d. Land Use Regulations

Since the advent of land use regulations, patterns of development have also been channeled by rules and standards that seek to organize use, density and other characteristics. Zoning exerts the greatest influence, and is central to the following discussion. The local Subdivision Rules and Regulations along with State and Federal land use standards also limit land use in important ways, and are discussed within this chapter.

Zoning

The Middleborough Zoning by-law establishes a series of zones for uses and creates a system of dimensional and other requirements to direct development. It includes provisions for special circumstances, including “overlay zones” that establish special procedures for certain areas. The relevant attributes of the zoning by-law are summarized to provide a context for planning discussions.

Residential Zones

There are three zoning categories that have been set aside for predominantly residential uses.

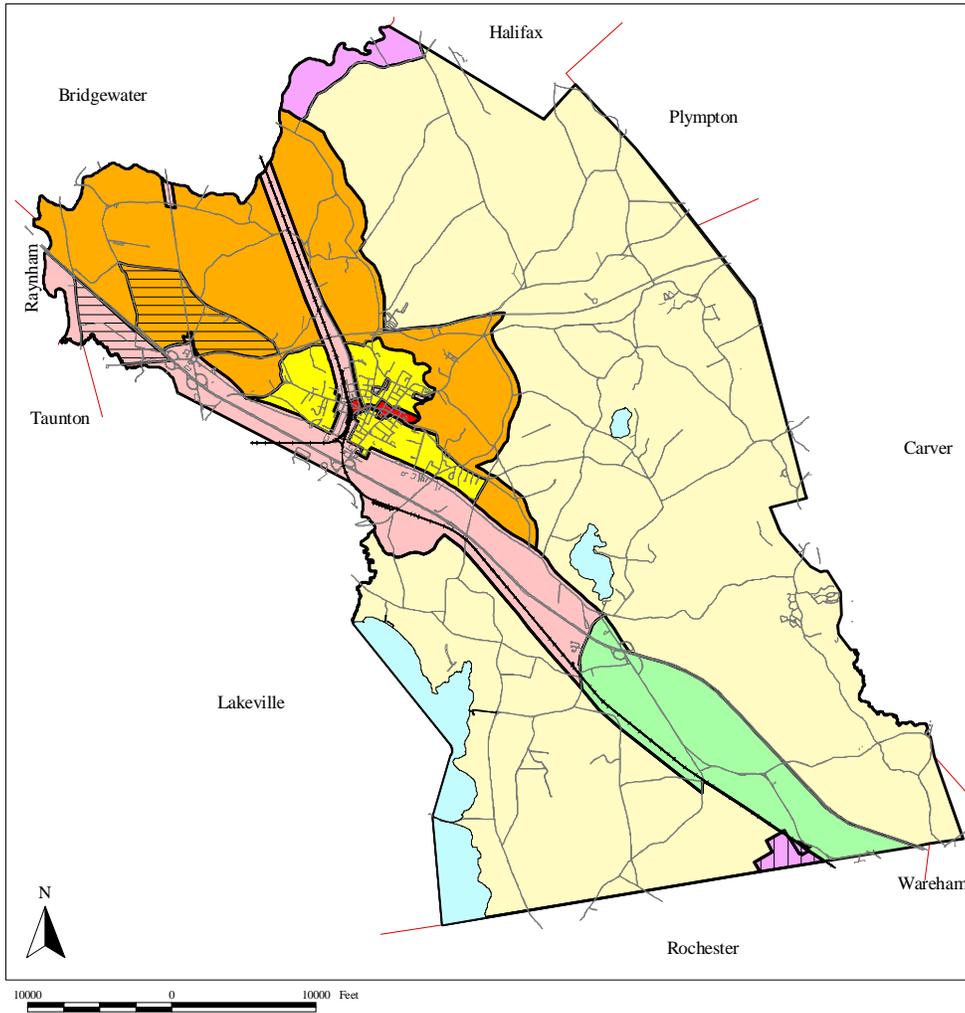
- Residence A (RA) – This district is intended for single-family dwelling and accessory structures. It has a minimum lot area of 60,000 square feet and a minimum street frontage of 175 feet. It proscribes typical setbacks of 25 feet for front yards and 10 feet for side or back yards.
- Residence B (RB) – This district is also intended for single family dwelling and accessory structures. It has a minimum lot area of 20,000 square feet and a minimum street frontage of 125 feet. It also proscribes typical setbacks of 25 feet for front yards and 10 feet for side or back yards.
- Residence Rural (RR) – This district is intended to provide for large lot, single-family development, permits homes of 80,000 square feet and requires 200 feet of frontage. Front yard setbacks are 50 feet, with side and backyard setback minimums of 10 feet.

Figure A1: Zoning

Town of Middleborough Zoning Districts

Zoning Districts	General Use Districts	Residential Districts	Overlay Districts
■ B (Business)	■ GU	■ RA	 Adult Entertainment District
■ I (Industrial)	■ GUX	■ RB	 Development Opportunity District
		■ RR	

*Information provided by Middleborough Planning Office.



Source: Town of Middleborough GIS data (zoning, town boundary, roads and hydrology).

The residential zones share common regulations in regards to home occupations. Customary home occupations are allowed as a permitted use, as long as no more than three employees are engaged in the business and that the materials or merchandise associated with the business are not visible to the public. Similarly, artisan or trade uses are allowed for house occupants, if the activity or materials are not visible to the public and if the activity has limited impacts or hazards. On a special permit basis, businesses with up to three employees may be allowed, if they meet the same standards regarding lack of visibility and low impacts. These provisions are important in the context of Middleborough, as there appears to be a high number of home businesses that are part of the way of life and commerce of the Town.

The residential zones all allow for the inclusion of wetlands within building lots, provided that there is a minimum amount of uplands where buildings are sited. There are also common provisions that limit irregular lot configurations, commonly known as “pork-chop” lots.

The residential zones also include the limited ability to expand the number of units within older, single-family homes to a maximum of three units, if the owner occupies one of the units. This provision provides a limited ability to create condominium or rental units, but seeks to limit problems that might be associated with absentee-landlord use patterns. This provision is important in the context of the multi-family uses, which is a planning topic in several parts of this Report.

Commercial, Industrial and Business Districts

There are several districts that provide for commercial and mixed uses.

- Business District (BD) – This district is intended for commercial uses, and is concentrated in the downtown district. This zone permits virtually every possible commercial use that is permitted within other commercial zones except for a special permit restriction on adult stores or theaters. It also allows for the uses permitted in the residential zones. The zoning provisions allow for limited multi-family housing, if the use is restricted to the upper floors of older buildings and if certain parking and impact concerns are satisfied.
- General Use District (GU) – This is a broadly defined zoning category that permits agricultural, outdoor recreation, commercial, warehousing, and manufacturing uses. It generally restricts the conversion of single-family to multi-family units, and limits the development of additional mobile home parks. The zone relies on site planning regulations to direct the use of land. It establishes minimum frontage requirements (75 feet), height limits (42 feet), setbacks (35 feet in front, 25 feet from the rear) and coverage limits (40 percent of lots must be open). No shared parking is permitted, and parking requirements are established by use. Landscaped buffers are required around sites and within parking areas.

The General Use Zone allows for a broader range of uses (including residential uses) through a Special Permit. It provides criteria that are applied by the Board of Appeals as the Special Permit Granting Authority. Other provisions limit the land area per residential unit to a minimum of 30,000 square feet per unit, a very low density.

- General Use District A (GU-A) – This designation is a refined category of the GU zoning regulations, but does allow multi-family residential units, even with a special permit.
- General Use District X (GU-X) – This designation is a refined category of the GU zoning regulations, and allows multi-family residential units through special permit, but requires additional land area per unit, and restricts mobile homes to standard lot sizes.
- Industrial District (I) – The industrial zoning accommodates manufacturing or industrial uses, but also allows other commercial uses or residences. It has few dimensional requirements, other than a significant landscaped front yard setback. It is designated for an area at the southern municipal boundary where it was reportedly intended, in part, to provide one location that would allow adult uses within the Town boundaries. The northern most section along the Taunton River is no longer used for industrial activities (the former K&F Brickyard site) and instead is being considered for off-site wetland mitigation for the Route 44 road-widening project.

Among the districts that permit commercial uses, the General Use areas are the most problematic. The area devoted to this zoning category is very large, encompassing approximately 6,000 acres of land. It is generally distributed along the arterials of Route 28 (West Grove, Rachel and Wareham Streets), Harding Street, Clay Street, and along Everett and Forest Streets. These were once major thoroughfares that have declined in importance with the construction of I-495 and Route 44. The “build-out” capacity of the land is theoretically enormous; a previous study prepared by the Southeast Regional Planning and Economic Development District (SRPEDD) in 1988 suggested a potential total volume of 81 million square feet of space. Although the realistic capacity is probably well below this amount, the implication is clear that the land within the zone is excessive relative to realistic economic or land use needs. This observation is supported through the land use patterns that have evolved along the General Use corridors, as noted in the discussion on land use patterns below.

The lack of effective differentiation in the General Use zoning led to the reconsideration of its value as a regulatory tool. The 1988 SRPEDD General Use District Study proposed the re-categorization of land into numerous smaller zoning enclaves, introducing new specialized zones, as well as converting some areas to existing Middleborough zoning categories, according to established land use patterns. Along with

less comprehensive proposals, attempts to rezone General Use Land have failed to achieve Town Meeting approval. In part, this has been due to the perceived loss in potential value for landowners along the corridor who have not yet developed their land.

The commercial-oriented zoning categories also contain the only provisions for multi-family use within the Middleborough regulatory structure. As noted in the discussion above, the restrictions on multi-family housing are significant. In the downtown Business District, multi-family housing is limited to the upper floors of older buildings. In the applicable General Use Districts, the overall land density for multi-family units is quite low, although the use of non-buildable land (wetlands) in the density calculations somewhat increases the effective density.

Overlay Districts and Other Special Use Provisions

Current zoning practice employs special “overlay zones” or other special use provisions to direct land uses where normal zoning mechanisms are difficult to apply. Middleborough currently employs several of these mechanisms.

- Development Opportunities District (DO) – The intent of the DO District is to provide opportunities for economic development expansion in a planned multi-use district. Its purpose is to authorize innovative use of certain portions of a defined overlay district for activities appropriate to large land areas by the issuance of a special permit with safeguards and conditions to prevent detrimental effects and impact upon neighboring properties and the Town as a whole. The DO overlay zone allows for a wide range of uses through Special Permit, but it is generally intended to be used for planned developments in manufacturing, industry, high technology, warehousing, research and development, office, hotel and motel, or medical centers. Retail uses, restaurants, theaters and public assembly uses are permitted where DO Districts overlay General Use districts. A minimum area of 10 acres is required to qualify for such an approval. The by-law establishes broad latitude for the Town to create guidelines or site planning requirements to mitigate impacts of development. This mechanism has been used in concert with Tax Increment Financing as a means to promote coordinated development in industrial and office parks within the Town.

- Open Space and Resource Preservation Development District – This provision is an overlay that applies to Rural Residential, General Use, General Use “X” and the Residence “A” districts within the Town. The purpose of this provision is to allow for the reorganization of large subdivision housing projects by creating smaller lots than would otherwise be permitted, and retain substantial open space areas for common use and protection. This by-law may be considered to be a “cluster” zoning provision. Key elements of the by-law include a minimum project size (5 acres) and revised effective frontage, lot, and setback requirements. The total number of units developed cannot exceed the number

that could be developed using the underlying zoning standards, so that land which is not buildable under those zoning provisions cannot contribute to an effective density increase. The amount of land held for common open space cannot be less than 40 percent of the total project area, and must include at least 50 percent of upland. The provision grants broad abilities to review site plan submittals and shape development proposals so that the valuable open space resources are protected.

- Adult Mobile Home Parks – Special standards have been established to guide the development of mobile home parks intended to house senior citizens, 55 years of age or older. These are large parks that consume at least 20 acres of land, but cannot exceed an overall density of 2 units per acre. Each mobile home site must be at least 10,000 square feet in size; the remainder may be in common areas. Site planning standards create sizable perimeter buffers, regulate internal streets and parking, and set utility requirements. Middleborough has used this mechanism to help control the development of a major adult mobile home park in the northern portion of the Town.

- Flood Plain District-Regulation of Flood Hazard Areas District – Many areas of the Town are subject to flooding, and the land within defined flood plains has been regulated to minimize losses to property due to floods. The provisions of this overlay regulation also include controlling filling and grading that may increase flood damage, and the regulation of infrastructure construction to accommodate flood conditions. The extent of the Flood Plain District is linked to technical studies of certain flood parameters established by the Federal Emergency Management Agency (FEMA). Although buildings are permitted in these areas, they must generally be constructed to meet flood-proofing criteria.

- Water Resource Protection District (WRPD) – This overlay district has been created to protect water quality for water supplies. The overlay district distinguishes between two levels of protection. The designation “WRPD-A” covers watersheds and associated recharge areas for public water supplies. This provision generally restricts the storage of certain harmful materials, discourages use of polluting substances, and limits coverage of permeable soils. It restricts minimum lot size to 60,000 square feet. It contains important limits on site disturbance and setbacks from watercourses. It does not prohibit any of the underlying use designations or the ability to construct buildings within its limits. The designation “WRPD-B” is intended to specifically protect natural water resources and areas hydraulically linked to public water supplies. It contains relevant conditions on development, notable a 100-foot setback requirement from qualifying rivers, brooks and ponds.

The Town is in the process of revising the local regulations so that they accord with State regulations regarding water supply protection, particularly within the zones of protection around wellheads.

- Adult Entertainment District – This is an overlay district that permits and controls adult entertainment within industrial zones, in keeping with State legal requirements.

Subdivision Regulations

The subdivision regulations are administered by the Planning Board, and are used to enforce responsible development standards for new development that requires the creation of new lots. The provisions within the Subdivision regulations particularly address infrastructure requirements and help minimize off-site and environmental impacts. The requirements appear to be consistent with the purposes of the existing zoning regulations. However, the Town may wish to review these regulations in light of changes in the zoning designations and new types of development that may be encouraged through adoption of this Master Plan and subsequent zoning changes. For example, provision of on-street parking is a traditional approach to neighborhood-scale single-family or multi-family neighborhoods, and is considered to be a “traffic calming” measure in some communities.

State and Federal Regulations

Although land use is generally regulated at the local level, there are a number of regulations at the state level that effect land use and site planning. It is not the purpose of this report to document all of these regulations and the extensive interplay with local land use policy, but rather to acknowledge the role that they play. At a fundamental level, the structure of local and state taxes underlies many land use decisions. The dependence on the commercial tax base to fund local needs drives many land use directions, for example. As another example, among the most prominent of these regulations is CMR 310 9. 00, which regulates wetlands and waterways within the Commonwealth. In Middleborough, many of the restrictions on changes within or near wetlands stem from this source. The State has established new standards for setbacks and disturbance along the edges of major watercourses, through the so-called Rivers Act. As another example, the Massachusetts Environmental Protection Act allows the Commonwealth to establish land use conditions in the context of environmental impact approvals. Through its fair housing regulations, the Commonwealth establishes standards for provision of affordable housing, and allows local land use by-laws to be superceded to meet its goals. Hazardous material standards define site and building mitigation that must be accomplished before polluted locations are converted to new uses. Sewer regulations limit development potential, in some cases; in some locations, state protection guidelines effectively limit the type of development near key water resources.

The Commonwealth has recently established a new tool that may enhance local land use planning. Called the “Community Preservation Act”, this legislation enables towns to establish new funds through local, voter-approved property tax surcharges. These funds may then be applied to support initiatives in a limited number of categories: provision of

affordable housing, open space acquisition or preservation, and historic preservation activities. The potential application of this Act within Middleborough is generally addressed in the relevant sections of this Report, as well as within this section. Among the alternative uses to which it might be applied include preservation of open space, affordable housing and historic preservation.

At the federal level, there are other regulations that must be taken into account. For example, among the most prominent are standards regulating waterways and wetlands within the jurisdiction of the U. S. Corps of Engineers.

The land use planning for the future of Middleborough will be constrained by this extensive network of regulations. In some cases, the Town may apply its efforts to change some of these regulations, and this might be considered as part of its land use planning strategy. In general, however, the state and federal context can be expected to be retained.

e. Land Use Patterns

Evaluating Land Use with Maps and Statistics

The following discussion charts the use of land within Middleborough based on standard mapping and statistical methods. The Town of Middleborough has recently established a Geographic Information System that is linked to data produced as part of the tax assessment records. Although some of this information is in a preliminary form and will require confirmation of some details, it will afford the most comprehensive mapping and evaluation of land uses within the Town ever undertaken. The attached map is from that source. The following table has been assembled from the best data available at this time, which was last compiled by the State in 1991. It indicates the distribution of land use by standard categories.

Table A1: Land Use Classifications and Areas

(1991Data)

Land Use Class	Area (ac.)
Cropland	2,360
Pasture	2,360
Forest	27,926
Wetland	1,108
Mining	287
Open Land	1,215
Recreation: participation	83
Recreation: spectator	85
Residential: MF	74
Residential: SF Less than 1/4 ac. Lots	328
Residential: SF 1/4 to 1/2 ac. Lots	874
Residential: SF Larger than 1/2 ac. Lots	3,888
Commercial	336
Industrial	231
Urban Open	355
Transportation	787
Waste Disposal	85
Water	1,947
Woody Perennial	2,407
Total Area*	46,738

Source: Mass GIS Data

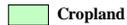
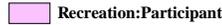
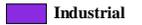
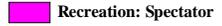
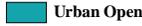
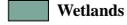
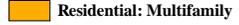
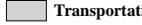
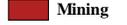
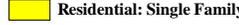
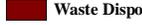
Overall Land Use Observations

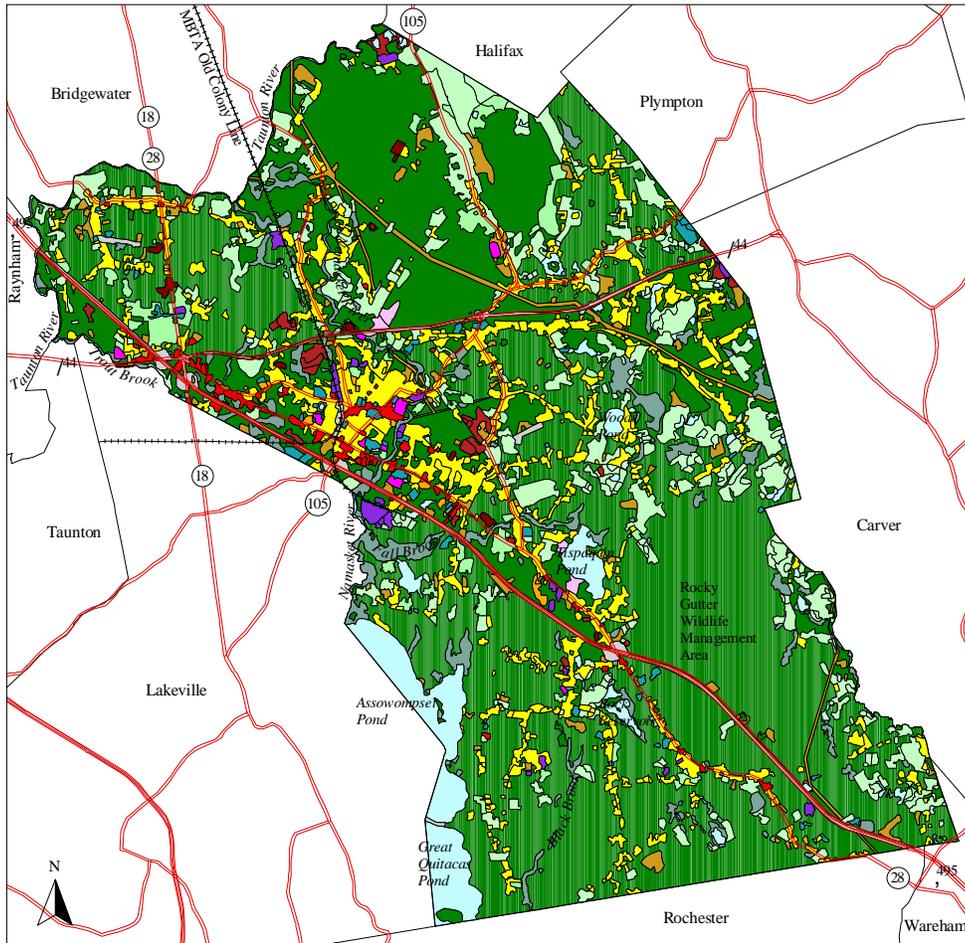
Land use within the Town of Middleborough is characterized by large tracts of undeveloped and agricultural land interspersed with clusters of development. The undeveloped land includes large, relatively contiguous land areas. The developed areas include concentrations of business and residential uses around historic villages, business uses along highway and rail corridors, and residential uses within both large lots and in subdivisions that are generally distributed near the major highway and arterials that transect Middleborough. The following map is indicative of the larger patterns of land use and is available through the Massachusetts GIS system; the more recent Middleborough GIS land use map is more useful and detailed in many ways, but is not suitable for reproduction within the limits of this report because of the extreme level of detail it provides.

Figure A2: Land Use

Town of Middleborough Land Use

Land Use Classes

 Cropland	 Open Land	 Commercial
 Pasture	 Recreation: Participant	 Industrial
 Forest	 Recreation: Spectator	 Urban Open
 Wetlands	 Residential: Multifamily	 Transportation
 Mining	 Residential: Single Family	 Waste Disposal

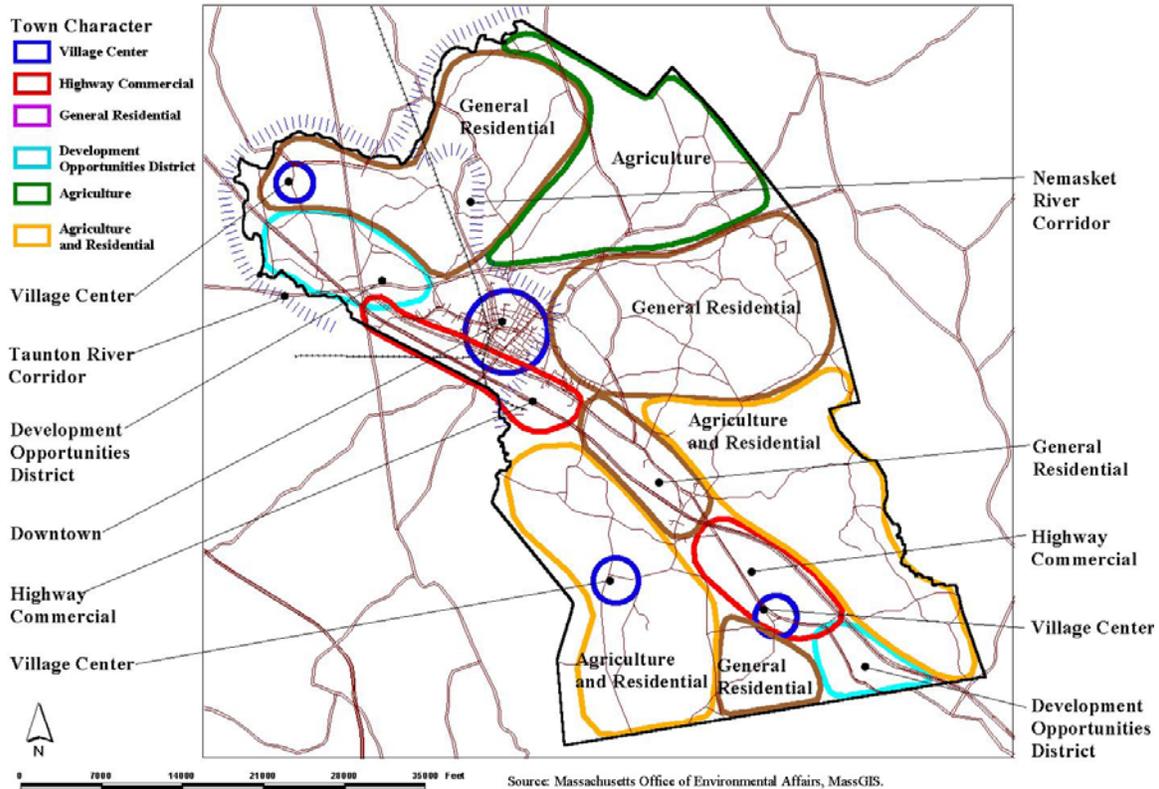


10000 0 10000 Feet

Source: Massachusetts Executive Office of Environmental Affairs, MassGIS: data layer; Land Use.

Figure A3: Community Character

Town of Middleborough Community Character Analysis



Open land is composed of several categories, ranging among true agricultural lands, undeveloped land, and undevelopable land, such as those areas consumed in regulated wetlands. The Town has notable major concentrations of open land in large parcels and holdings in its western quadrants. This includes the “Cumberland Farms” parcel at the northern end of town, which contains of hundreds of acres of logged, but undeveloped land. It stretches through bog-filled land including Great Cedar and Little Cedar Swamps in the northeastern corner of the Town. The open space resources include both the Rocky Gutter and Forbes Swamp, which are mostly located within the Rocky Gutter Wildlife Refuge, a substantial public holding in the southeastern portions of the Town. Continuing further south, the land use maps recognize the additional clusters of private agricultural and open lands.

Another major open space system can be traced along the western margins of the Town, particularly near the Assawompset Pond Complex. Some of this land is owned and protected to help preserve the underlining aquifer and water supplies, with major holdings by the City of New Bedford. Nearby is the Devil’s Kitchen preserved wetland, found within the Black Brook watershed, which flows south in Middleborough. Continuing northwards, large open parcels appear, particularly in wetland and flood plain areas along the borders of the Taunton River, ponds and streams.

The associated map indicates some of the key open space relationships. Chapter 61 land is forested; Chapter 61A is active agriculture that is under protection as open space. Chapter 61b refers to open space that is for recreational use.

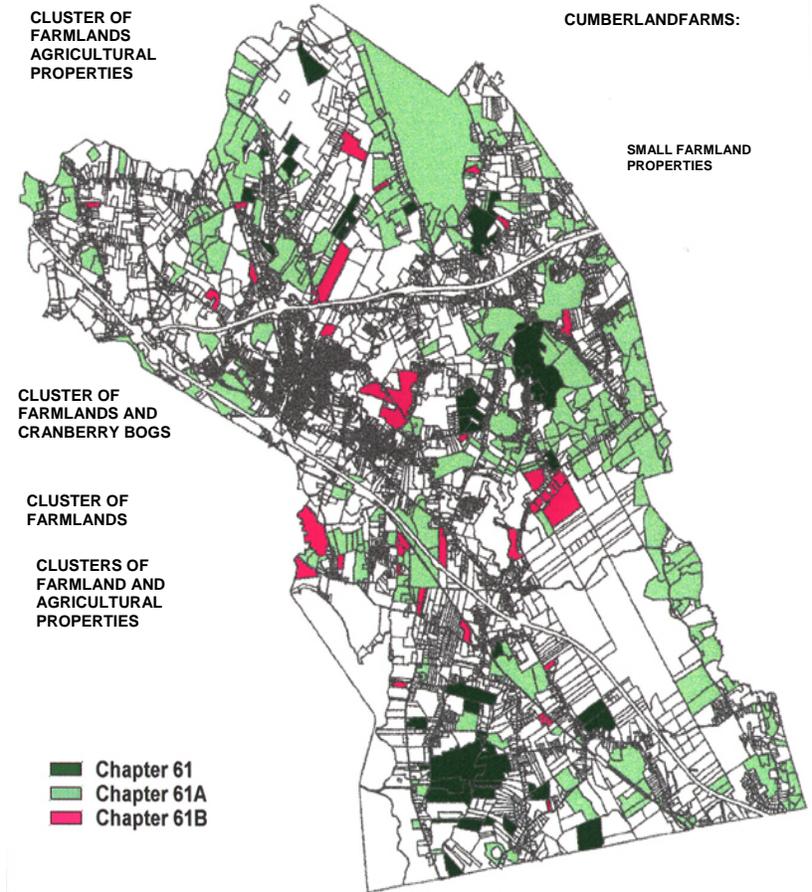
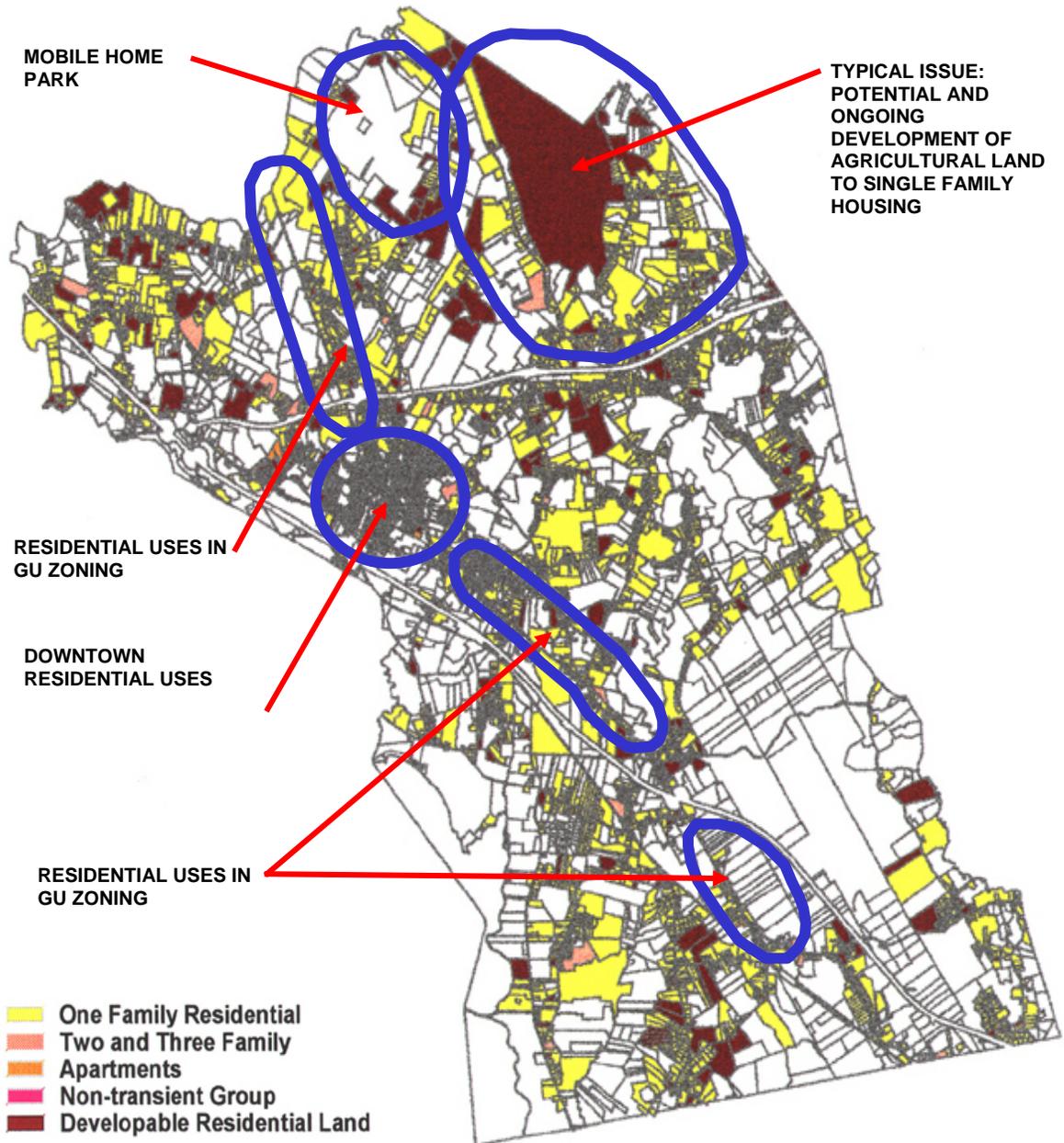


Figure A4 Map of Open Space, including Chapter 61, 61A and 61 B Agricultural and Open Space (Source – Middleborough GIS)

Single Family Use Areas

Single-family residential land use is distributed throughout the Town. The patterns remain largely concentrated along roads and within former village areas; relatively little traditional suburban tract-style development has occurred relative to other communities in the Commonwealth. There are exceptions however, and newer development has tended to be shaped in this pattern. The large senior mobile home development in the northern part of the town is a distinctive residential use pattern. Also notable are the significant concentrations of residential uses that are clustered within the General Use zones in the Town, including both new and older housing.

Figure A5: Residential Uses and Issue Areas

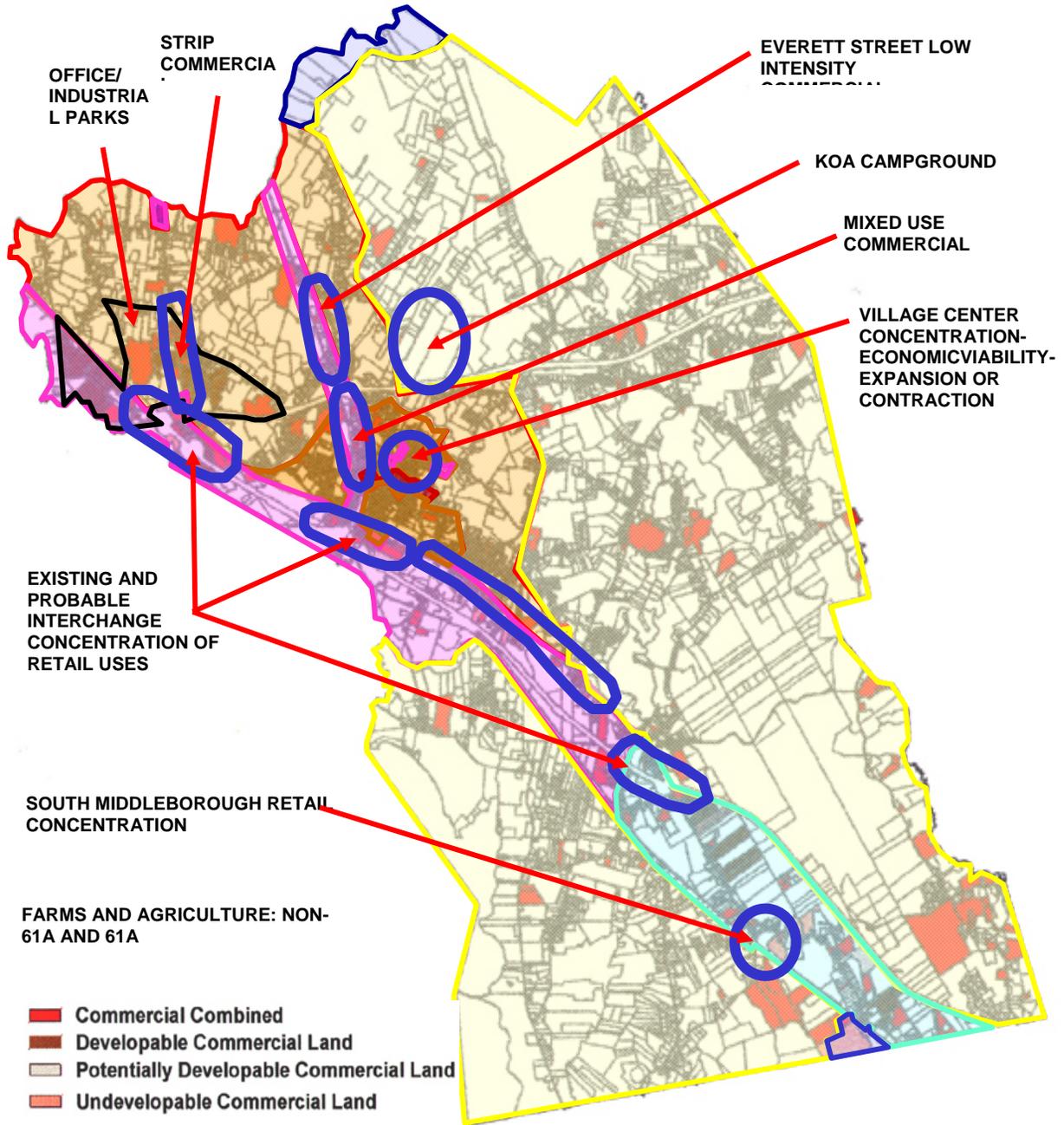


Map of Residential Uses (Source – Middleborough GIS)

Commercial and Industrial

Commercial and industrial properties are located along the major highway and arterial corridors and along the rail alignments, reflecting the zoning designations and practical needs of the businesses. Uses within this designation include the abandoned K&F brickyard along the northern boundary of the town, a property for which there are a number of land use regulation and open space preservation issues. The most important industrial and commercial use concentrations are along the Route 495 corridor, and represent substantial additional opportunities for new uses, as the amount of developable land remains very large.

Figure A7: Commercial and Industrial Uses and Issues



Mixed Use Areas and Planning Challenges

The Town has several mixed use areas that will pose important challenges in the coming years. They are depicted in the preceding map, and include the corridors along I-495 and Route 28, and the downtown.

The downtown represents a transitional area within the Town. Once a major commercial and industrial center, the business use of the downtown has declined over time, in keeping with trends that are common within the region and the nation. It retains a strong government and institutional base, and is ringed with substantial residential areas. The amount of open space near the downtown is a major asset, as well. Plans for the future could take advantage of the mixed use qualities that the district provides, by focusing on uses that can be feasibly added.

The developable land along the I-495 and Route 128 corridors remains substantial, and there is particular value to locations near the major interchanges and intersections. At the same time, the pattern of uses includes significant shifts in scale and type of use. One of the planning concerns is to create patterns of use that are complementary and which are compatible with the access and roadway networks. Many of these issues are associated with the particular mix of uses and General Use category, which is discussed below.

Land Use and the General Use Zone

The General Use (GU) zoning district stretches through the Town along the major roadway and railway corridors. It is an inclusive, mixed use district that has created a unique composition of land uses within its boundaries. Multi-family housing, recreation, commercial, and industrial uses can all be found within this zone. The GU district has also created one of the most complex land use planning issues within Middleborough. Potential land use conflicts and the resulting impacts on municipal infrastructure and land value are basic issues for land use planning. Because of the broad range and mix of uses within the GU district, these issues have become important in trying to ensure that the development within this district meets the long-term goals and objectives of Middleborough.

Traveling through the GU zoning district provides a view of the broad cross-section of the mix of land uses in Middleborough. Starting from the southern-most end at the municipal boundary and moving north, the land starts with an area that is fronted on Route 28 as residential, but with some relatively recent industrial development that abuts I-495. Just north of this area is the historic village center of South Middleborough, with its combination of municipal, cultural and business uses mixed with nearby residential development. North of the village center is an area of large land holdings, lots of 50 to 60 acres in size extending from Route 28 to I-495, but with limited development. Moving

north from here the land use, infrastructure and environmental conditions become more complex.

The first southern exit/entrance ramp, Exit 3, to I-495, Rock Village, and the Tispaquin Pond aquifer all lie within this next area. Rock Village exhibits the classic New England village center characteristics without the strong commercial presence. The strip of Route 28 north of Exit 3 includes a highly varied mix of auto-oriented business, the Abbey Lane industrial area, the Peterson motel, Ashley Place condominiums, single-family residential, and about 200 acres of agricultural land.

This leads up to Cherry Street from where the section of GU land along Route 28 shows a much stronger presence of commercial development. On the western side of I-495 are the closed industrial facilities of Ocean Spray, which lie along the banks of the Nemasket River. North of the Nemasket River lies the confluence of the rail line and Route 105, Route 28 and the next exit/entrance ramp to I-495. This area includes one of the entrances to downtown Middleborough, the entrance to the Lakeville MBTA station, a mix of auto-oriented commercial uses and strip-type business centers. A large portion is also used by the MBTA as part of the layover facilities for the commuter trains. This area is separated from the highways by a significant change of topography, which also limits the connection of the GU areas to the main access on Route 28.

At this point the GU district follows two routes, one along the railroad line and along Everett Street, the second continuing to follow Route 28 and I-495. The area running along the railroad and Everett Street has developed as three different land use areas. The first area leading up towards Route 44 through Everett Square is a mix off more industrial types of land uses mixed with some residential areas. At Route 44, the land uses are more commercial in nature, and north of Route 44 the businesses are scattered and related more to home-based businesses.

The other area of GU zoning running along the highways north from the rail line along Route 28 and I-495 starts with gravel pits to the west of Route 28. From there the topography relaxes further to the north allowing more commercial development to access the highway. The majority of the area around the Route 28, Route 44, Route 18 and I-495 interchanges is both currently and potentially under significant change. South of the interchanges, the access will be changing as a result of the Route 44 project. North of the interchange the access will also be changing. However, this latter area is also zoned for the Development Overlay District (DO).

Although some of the successful industrial projects have been created north of the GU district within the DO zone, some interesting projects are also taking place in the area west of I-495 and north of Route 44. Here, Glynn Electronics is expanding and the Southpointe industrial park has been initiated as a major proposed redevelopment area, along with a motel, gas station and some residential dwellings.

The last section of the GU district before the town line returns to a predominantly residential development area. A separate area of GU zoning also lies at the town line along Route 28/18. This is a limited commercial area that may also serve as a village business district.

In 1989, the Town engaged SRPEDD in the development of a study with the ultimate purpose of making recommendations that would allow the Town to guide development within the zone and thereby manage the impacts of the development within the limits of the Town's infrastructure. This was proposed to be achieved by reducing the total potential build-out within the zoning district, but at the same time allowing greater flexibility in projects to protect resources and better match the development with the Town character and environmental concerns. Five different land use categories were proposed:

- Planned Development Community to promote cluster type developments;
- Apartment Overlay to allow rental units by special permit;
- General Business for the highway commercial businesses;
- Village Business to promote an historic character in certain business areas;
- Manufacturing where modern industrial uses could develop with minimal competition from housing development.

Design standards were also proposed as Development Performance Standards. However, the proposed standards were more typical of site planning standards and were undifferentiated for the different proposed use zones. Although the recommendations have not yet been adopted by Town Meeting, many of the conditions found there today suggest that certain aspects of the recommendations could still be applicable.

Patterns of Ownership

Other important considerations in the planning for future land use are the large land holdings in various parts of Middleborough. While a great deal of the development that occurs is in small increments, the large properties hold out the prospect of very large proposals that could dramatically alter the existing character. The land is, of course, not all developable, particularly where wetlands intervene. Development of these properties cannot significantly exceed the demand for new uses that may evolve, either. However, by considering the implications of building out to the existing zoning within these areas, the potential impacts and opportunities to institute new land planning measures can be better understood.

Land Use: Changes over Time

The following table provides a useful statistical basis for considering changing land use patterns. The Commonwealth of Massachusetts maintains databases on land use for Middleborough. This data was first compiled in 1971, and was last updated in 1991. Although the data is somewhat dated and not entirely consistent, it is nevertheless roughly indicative of the rate of conversion of land from one use to another.

Table A2: Land Use Change, 1971 to 1991

Land Use Class	1971 Area(ac.)	1991 Area(ac.)	Change Area(ac.)
Cropland	2,179	2,360	181
Pasture	1,058	2,360	1,302
Forest	31,323	27,926	(3,397)
Wetland	1,797	1,108	(689)
Mining	167	287	119
Open Land	1,170	1,215	44
Recreation: participation	46	83	37
Recreation: spectator	85	85	-
Residential: MF	15	74	59
Residential: SF Less than 1/4 ac. Lots	327	328	1
Residential: SF 1/4 to 1/2 ac. Lots	760	874	114
Residential: SF Larger than 1/2 ac. Lots	2,343	3,888	1,545
Commercial	243	336	94
Industrial	140	231	91
Urban Open	272	355	83
Transportation	765	787	22
Waste Disposal	66	85	20
Water	1,907	1,947	40
Woody Perennial	1,510	2,407	898
Total Area*	46,172	46,738	

Notes: Source MassGIS. Discrepancies in Total Areas related to rounding.

There are several conclusions that can usefully be drawn from this evaluation. The reduction in forested areas was significant, representing a loss of approximately ten percent of this resource. During the same time period, the land converted to large lot residential and cleared land increased dramatically. This was largely due to logging operations and the gradual conversion of forested land into single-family development in

the Town. The rate of conversion, however, is not an overwhelming trend; the amount of land classified as undeveloped remained the largest proportion of land by an enormous margin, and the overall rate of development would appear to be sustainable without a major shift in this balance for many decades to come.

5. Land Use Alternatives

The Town of Middleborough can help shape future land use patterns through a combination of regulations and actions over time. This section of the report examines choices that might be made to achieve the goals and objectives for land use.

Many factors influencing land use are outside of the control of the Town. For example demand for land is linked to the regional and national economies. The regional transportation network strongly influences location choices for both homes and businesses. State law describes many property rights that cannot be changed at the local level. Current state law effectively grants landowners the ability to subdivide land according to existing zoning, for example, even if the Town wishes to impose new standards. However, the Town retains substantial ability over the long term to channel land use in ways it finds most desirable.

Choice: Retain Existing Regulations and Land Use Practices

This option would continue the Town's current zoning and land use practices. If this "no action" alternative were chosen, then a number of goals and objectives of this Master Plan might not be fully met. Slowly but steadily, the rural character and image of the community will be replaced by a more standard suburban land use pattern. Residential development can be expected to progress in dispersed patterns through subdivision of larger properties, with few limitations other than the availability of sewer or suitable land for septic systems. Although some projects may take advantage of the existing cluster zoning mechanism, there will be limited ability to tailor these projects to reinforce the visual character of the distinct rural and village districts in Middleborough. Multi-family development will be minimal, and may be located in low concentrations and in areas that are isolated from other residential uses and from convenient services. The development of additional senior trailer home units will continue in patterns and densities similar to those already established.

Uses within the General Use zones can be expected to be underdeveloped as a result of the large amount of land available relative to likely commercial uses. As a result, there will be a lack of coherent development patterns and problems with incompatible land uses, with detrimental impacts on land values and taxes. Mixed-use development of industrial and commercial uses may continue in areas and parks established for this purpose, but the uses may not achieve their greatest potential, if infrastructure planning does not keep pace with development opportunities. A steady reduction in open space will occur on private land, with the loss of valuable resources because of the size and location of developable parcels.

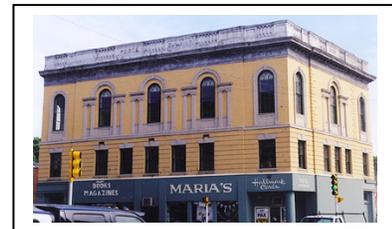
Advantages: This approach would require no additional Town expenditures other than those currently associated with existing land use regulations and enforcement, and there will be no requirement to create a voter consensus on new regulations or expenditures.

Disadvantages: Many of the desirable qualities of the Town will be compromised over time, and the changes may negatively affect both the quality of life and the economic value of properties and the tax base.

Choice: Create New Residential/Business Zoning for Village Centers

The option to add new zoning district definitions that match more closely with the present conditions within the Town's neighborhoods and commercial centers allows the Town to support current land owners and define the best characteristics found in those areas. There are several related options within this choice. A district could be developed to define the village centers as unique business areas that may not be as large as the downtown, but provide specific support to the surrounding neighborhoods as social and/or commercial centers. Allowing a mix of residential and commercial uses within a new zoning district can also be used to support a successful commercial area. This could include second floor residential uses to fill existing vacant space, and infill residential development as multi-family structures that match existing buildings and add to the overall activity levels in the centers.

Advantages: Allows the protection of existing characteristics of the commercial areas while adding a new element of activity and support to the businesses. Vacant space can be used to create affordable housing that supports multiple objectives, small affordable units and increasing the density within a developed center.



Disadvantages: Although not a strong possibility, the presently limited options for new businesses may change over time and the use of land or floor space for residential uses will displace the locations for those potential businesses.

Choice: Create New Residential/Business Zoning Provisions for Low Density Areas

This option would recognize that a high number of properties that are being used as primary residences are simultaneously serving as owner-run businesses. This use pattern is traditional in rural areas, and is consistent with the desired lifestyle of many residents. Current zoning allows for this use within some zones, with some size and site planning limits. The Town may wish to examine the existing use patterns, and more clearly specify those locations that may be appropriate for such uses as a special permit with site plan

review. More extensive site planning guidelines could be created to ensure that the visual character of the businesses, signage, and relationship to neighboring uses are positive.

Advantages: Allows the protection of existing characteristics of many of the low-density commercial and residential areas while providing additional care to the visual quality and impacts on neighboring uses.

Disadvantages: May be difficult to enforce site standards over time, and there may be ongoing issues regarding the appropriateness of uses in relation to other, primarily residential uses.

Choice: Reconfigure the General Use Zone

This alternative could include a comprehensive series of changes that recognize the existing and potential development options that best fit with the Town's land use goals and objectives. Reconfiguration of the GU zone would likely be best accomplished with the addition of new zoning districts that recognize the unique conditions developed within the GU district, the different mixes of uses and the types of development. The new districts should take into account:

- The residential nature of areas between Pine Street and Cherry Street, around Rock Village and north of Route 44 along Everett Street.
- The multi-family and apartment options near the Town Center.
- The village centers of South Middleborough, Rock Village, downtown, and on Route 28/18 in North Middleborough.
- The industrial areas in South Middleborough and at the Ocean Spray facilities.
- The potential of the DO/industrial areas around the Route 44, 28, 18 and I-495 interchanges.

These general areas could define the boundaries of the zoning districts needed to establish consistent land use development patterns.

Advantages: This choice allows the town to prevent future land use conflicts by more narrowly defining the nature of the existing land uses. This also provides new opportunities for development projects that conform to a village-like character or more intensive use such as apartments and industrial parks within defined locations.

Disadvantages: The scope of the rezoning, involving both a full set of zoning bylaw revisions and a very large number of property owners, is very broad and requires a well defined schedule for implementation - including drafting, education, and presentation.

Choice: Revise Zoning and Establish New Site Standards to Preserve the Agricultural Character

The agricultural character of Middleborough is defined in a number of ways, but the most often visualized aspects of this character are the physical qualities of open fields seen from the public roads. To maintain this visual character, the Town could create standards that preserve certain viewpoints, sight lines and vistas with new development. These standards could apply to road construction, street trees and fences, and the vegetative cover visible from the public ways. Application of the standards could require movement of driveway cuts, modified road construction, and clustering of development outside of key fields or forested areas that create an important viewpoint. Additional standards may also be considered to advise architectural design together with the site plan standards.

There are several new models for these approaches to zoning, which are similar to the older “cluster” tools, but which are more tailored to single-family home development that are more sensitive to land character and open space preservation. These models allow for the same density than would occur otherwise, or could even provide a modest bonus in units. A typical model can be found, for example, in the Open Space Residential bylaw being promoted by the Boston regional planning agency, MAPC. However, Middleborough would need to tailor any such provision to its circumstances.

Advantages: The use of these standards would preserve many of the views that people traveling the local roads recognize as part of the agricultural heritage both within adjacent farms and cranberry bogs.

Disadvantages: Some of the key viewsheds are very broad landscapes that would be difficult to preserve without decreasing the allowable development or greatly increasing the allowable density on the balance of the sites.

Choice: Support Community-based Agricultural Projects

The retention of active agriculture means not only a preservation of the present character of the land, but also can contribute to the sense of community. To combat the trends the cause the loss of agricultural operations, some communities have developed approaches to provide financial resources to reduce the cost of farming. One option involves selling public shares of farmland to the community, which benefits from the continuation of the farm. The shares provide funds to the operation and distribute the value to the shareholders. In this way, a cash flow is provided and the participating residents obtain a financial interest in the operation. Although the typical agricultural operation will not return any dividends, the value is continually provided by the continued existence of the farm.



Advantages: The townspeople are able to support the continued existence of the agricultural operations.

Disadvantages: The distribution of shares may not be appropriate for all agricultural operations.

Choice: Expand Regulatory Protection of the Water Resources Protection Areas

Although the current zoning bylaws meet the state standards for protection of the existing groundwater supplies, the future growth and development of the town will require new water sources to be developed. These water supplies may develop over time just as the Town develops. In addition, as new health advisories are issued, the Town may be subject to new treatment requirements if the water quality is not meeting the highest standards. To ensure that the Town maintains a high level of protection for the existing and future supplies, the regulatory standards could be expanded. Areas of mapped aquifers can be considered a reasonable estimation of the potential future groundwater development sites, and so become new areas for zoning protections. Currently, environmental management planning as a science has leaned towards managing the overall watershed rather than more limited political or well recharge boundaries. The expansion of the regulatory protections to the watershed limits ensures that all of the water leading to the supplies is managed equally. Adding other environmental regulatory standards, such as federal and state stormwater management requirements for site plan applications, may also allow a greater control of cumulative impacts within the watersheds.

Advantages: The expansion of the regulatory protections to the watershed limits ensures high quality water supplies and water resources.

Disadvantages: The management of larger areas and more complex watershed systems requires additional personnel time and funding, or the development of very comprehensive regulatory programs.

Choice: Link Land Development and Infrastructure Planning

There are several ways to better link land development and public infrastructure improvements.

When new development is planned, a general impact evaluation could be conducted that thoroughly evaluates the costs and benefits associated with the infrastructure that must support it, including roads, water and sewer service. This impact evaluation could consider all likely phases of development, and establish an explicit calculation of the resulting short-term and long-term costs and benefits to the community. The Town could also establish policy guidelines so that the distribution of costs is appropriate to the

Town's interests, and that the share of infrastructure costs is borne to the greatest extent possible by new development.

The extension of new infrastructure can spur new development as an indirect impact, as well. Any proposal for significant change in infrastructure could require that an impact evaluation address this growth-inducing impact, along with the potential costs and benefits to the Town. Then, reasonable policy decisions can be made about undertaking or modifying aspects of potential improvements.

Decisions regarding infrastructure and growth occur frequently, and are exemplified by recent actions that have been taken by the Town in the form of limitations on sewer extensions to the DO district, or extensions of a water line to accommodate new growth supported by the Town. These areas defined for utility extension are 'growth boundaries'. Further limitations can be created by defining the ultimate build-out of certain areas based on the ability of the water and sewage disposal options.

A decision on acceptable policy standards for small modular or 'package' sewage treatment plants for individual developments also would allow better management of the utility infrastructure. Key related issues include the policies regarding public sector responsibilities, absorption of future capital and operating costs, and the ability of other property owners to connect to such systems. By setting standards that are linked to the Town's growth management and fiscal goals and by preparing cost benefit analyses before actions are taken, the Town will be best situated to control its own future.

In addition, new public facilities such as roads, schools and emergency response facilities may be needed for new development. However, capital program improvements are not usually scheduled as quickly as development occurs, leaving a gap between construction of needed facilities or increased demands on taxpayers. Creating a link between these facilities and development may allow the Town to either:



- Require the project to be phased to allow the development of the needed infrastructure before development, or,
- Establish a fee schedule or 'impact fee' that requires funds submitted by the developers that will reduce taxpayers burden in support of the new development.

Advantages: Linking development with infrastructure improvements ensures an orderly growth of both development and infrastructure without putting an undue burden on the local taxpayer. Setting growth boundaries also allows the community to define the potential end point for the infrastructure.

Disadvantages: The possible limitations on development do not necessarily coincide with market demands, which may cause projects to fail, or opportunities to be missed. Impact fees also require state legislative approval.

Choice: Expand Design and Site Planning Review

After establishing land use by zoning district, the principal way in which the Town controls the nature and character of new development projects is through Design and Site Plan Review. The function of reviewing site and architectural designs is well established in the case law. Legal support goes to those bylaws that are specific as to the criteria used to define the standards for design. For example, calling for “New England village-like character” will not be as defensible as a bylaw that specifies such items as shingle style construction with steeply pitched roofs and dormers. With the careful drafting of a site plan bylaw the Town could be assured of a style more particularly suited to Middleborough. The bylaw could also specify environmental restrictions that preserve the air and water quality and protect specific resource areas. The greater specificity ensures that the Town sees the type of development that fits with the Town character and reduces the potential impacts of that change.

Advantages: The greater specificity and expansion of design concerns will ensure that all aspects of a project will be in conformance with local standards for development. This will also reduce potential adversarial positions by pre-determining the standards that will be applied.

Disadvantages: The more elaborate the bylaw, the more administrative time is necessary to ensure that the standards are followed.

Choice: Expand Open Space Preservation and Acquisition

The only way for a community to truly control the development and use of land is to hold the land in some form. Acquisition of land for open space can serve multiple purposes for land use planning. The land can be used to preserve character, provide access to lands for recreation, and provide locations for certain municipal facilities such as well sites.

As discussed in the Economic Development section of this report, there is a financial impact from development that incurs both a positive result from increased taxes, and a demand on Town resources for the infrastructure and services to support that development. As described in that section, if the Town were to see development of 100 new units of rental housing and 100 units of single-family housing, the Town budget would have to increase 5 percent, or about \$1.34 million. If not used for increased services, the money could be used otherwise to leverage about \$20-25 million in bonds for acquisition of land over a twenty-year period. Acquisition of the land that would otherwise be developed for these units would require a capital expenditure but would carry much lower maintenance and service costs than the residences.

Other means to obtain or control open space and lands are discussed in the Natural, Open Space and Cultural Resources section of this report. There are several other means to control the lands without significant municipal expenditures.

Advantages: Acquisition of open space ensures that the community maintains control on the impacts of change and development within the community, thereby maintaining some of the character of the Town.

Disadvantages: Land acquisition is a very costly option in a town as large as Middleborough.

Choice: Implement the Massachusetts Community Preservation Act

The Community Preservation Act was passed by the State legislature and Governor's office after much debate. The Act allows communities to raise taxes from 1 percent to 3 percent for three special purposes: preservation of open space, creation and support of affordable housing, and acquisition and preservation of historic buildings and places. A plan to preserve these assets must be created through a local committee, which is also used to direct the funds and actions. If local voters



dedicate additional local property tax revenues to support the projects identified in that plan, the State will then provide matching funds, in amounts that will be determined in part by the timing of participation and the number of communities that opt to be included in the program.

The strategy for adopting the act should begin with the creation of a draft plan for the use of the funds, including identification of projects and decisions about the distribution of the funds for the three programs. A public information program must also be developed to inform the voters of the advantages of participating in this program – and participating early, in order to optimize the funds that will be available through the State match. Ultimately, the voters of the Town will be deciding on the raising and use of the funds.

As calculated by the Community Preservation Coalition, a coalition of conservation and housing organizations, under the best options and with a 3 percent surcharge Middleborough could expect to raise \$515,085 locally and receive \$460,560 in state match for a total of \$975,645 in community preservation funds. The cost to the homeowner with a \$200,000 property would be about \$102 in increased taxes, but if the Town decides to exempt the first \$100,000 in value the total fund would be reduced and the taxes for that same property owner would be about \$51.

Advantages: The Act allows revenues to be raised over the existing tax base increases permitted by law and provides matching State funds to further expand the programs.

Disadvantages: Adoption of the increase will raise taxes for specific purposes. This puts an additional burden on taxpayers but does not allow broader use of the funds.

Choice: Alter Zoning Requirements to Meet Housing Goals

The Town's housing goals include objectives to maintain a diversity of housing for all social, economic and family situations. There are several key ways the Town can address these ideas through changes in the zoning bylaws. Some of the other options are also discussed in the section on housing.

Smaller unit size allows one option for reducing costs of the units and providing a unit type for smaller households. Two options are allowances for additional multi-family housing and mobile homes as discussed below. Another is the use of an expanded accessory apartment bylaw.



Accessory apartments could be used to assist retired, 'empty-nesters' in large structures from having to divide or sell their properties. They also could support the younger singles or couples who may be working in local jobs as waiters, teachers, government workers and in other local service jobs. For these reasons, the options to expand accessory apartments to include non-family renters could serve many other local purposes and housing goals.

Increasing the options for unit types available in subdivision of residential land could allow attached units such as duplexes, triplexes and possibly other unit types. With the variation in units the Town can ensure that new development provides a broader diversity of housing options.

Increasing the density allowances for creation of new affordable units has long been available under the State laws (Chapter 40B). The Town could provide some specific guidance for where and how a density allowance might be used.

Advantages: By taking control of the local housing needs, the Town is ensuring its own support of families, workers and businesses that reside in the community.

Disadvantages: Because of other factors impacting the costs of housing, the easiest way to achieve a more diverse stock of houses is to increase the allowable density of units. This in turn creates potential conflicts with the established neighborhoods. In addition, voluntary and incentive-based zoning options are not often used by developers to create new affordable housing.

Choice: Allow for Additional Multifamily Housing

Multifamily housing can take the form of any number of unit types from apartment complexes of single room and one or two bedroom units, to the various forms of ownership units typically found as condominiums. The attachment of units can range from a duplex to ten or more together. The choice to be made is where and of what type could be accepted within the Town.

Typically, the higher densities and smaller units are found in the areas with more services and access available to the residents. Therefore, apartment units might be best located within the downtown area and along the major transportation corridors.

Attached, ownership units may well fit in to a number of different neighborhoods where a smaller density and a larger, well-designed architectural structure may support land values with minimal impact. In fact, well-designed multifamily projects have the potential to exceed certain local unit values. Consequently, the construction of these units does not necessarily provide an affordable unit, but more likely meets a market for smaller families.

Another benefit may result from further concentration of the development envelope. By reducing the footprint of the building units and reducing the private space around the building, the total area disturbed is reduced. This opens the possibility for additional conservation land around the project.

Advantages: Multifamily housing provides a number of benefits to both housing and open space goals depending on the location and type of unit.

Disadvantages: Unless designed properly, the design of multifamily units can be significantly different from the other buildings within an area. Consequently, different unit types must be limited by the characteristics of the neighborhood in which they are sited.

Choice: Reinforce the Historic Village Patterns through Overlay or Historic Districts

The historic villages of Middleborough require land use regulatory support if they are expected to remain as they are today. However, there are several different conditions that apply to each village, and no single village zoning district could be used to preserve the qualities of those areas without the addition of an Historic overlay district for certain conditions. Still further actions may be necessary as well to maintain the historic landscape.



The Green is a location where, in order to retain the historic nature of the area, the development potential must be limited and the landscape requires significant effort to be maintained. The historic North Middleborough, Waterville and Eddyville villages require both architectural and landscape preservation as keys to retaining their qualities. Rock Village still retains only a vestige of its former commercial presence, but any proposed overlay zoning must be written well to prevent significant alteration of its present limited status and subsequent loss of the historic qualities. South Middleborough is a more significant social and commercial center and so is more in line with the Downtown. The Downtown district is discussed below.

The choices fall in to the three categories of historic preservation, design standards, and management. The non-commercial historic village centers will best be served with a zoning district and historic overlay that preserves the existing conditions. The commercial village centers require a more dynamic solution. This could take two or three different forms for Rock Village, South Middleborough and possibly the Downtown. It must also be recognized that the historic landscapes will require as much if not more maintenance than the buildings, and therefore may require programs possibly supported by the Town, but also possibly supported by non-profit groups focused on these opportunities. As an example, the Trust for Public Lands provides such assistance.

Advantages: By maintaining the historic qualities of the village centers, the Town supports some of the earliest settlement patterns of the community. This in turn maintains the rich heritage that could be used for local education and the development of tourism as part of the local economy.

Disadvantages: The resulting regulatory overlays could be complex to cover the wide range of conditions found within Middleborough's villages, which complicates passage and enforcement of the standards. This is a result of the size and complexity of Middleborough.

Choice: Promote and Develop Regional Attractions

Part of the overall economic development strategy for Middleborough should probably include tourism. The collection of many natural resources in Town is one reason visitors from other areas are frequenting the community. To further capture the tourist market, the Town could make choices about allowing, promoting and developing other attractions. These attractions could be recreation facilities such as parks and museums, some of which already exist or could be improved. These attractions could also be more active facilities such as theme parks that provide a much higher revenue and tax base. Suitable locations for the theme parks could be determined based on access and infrastructure, which would presumably gain access to I-495 and the other major highways in Town.

Advantages: Higher value recreational attractions take advantage of the maximum potential for tourist dollars and provide a higher return to the local businesses and the Town's tax base.

Disadvantages: A successful, regional recreational facility creates significant traffic demands on the access roads. The facility must be carefully sited to prevent impacts to local road systems.

Choice: Encourage Large Lot Development

Large lots or Estate lots are commonly used to preserve certain historic characteristics of an area, or as a means to significantly limit development in areas that are highly sensitive to the encroachment of human activity. There are potentially two applications of this concept.

Where the farmlands have been developed with large homes sited on much larger properties, the only option to maintain the maximum usage as agricultural land that meets the historic context would be with large lot zoning. This would preserve as close a semblance to the historic character as possible and protect the lands that could still be productive in agricultural use.

Within the Taunton and Nemasket rivers and their associated watersheds, the value and quality of the resources has been well documented. Protection of these resources comes largely from as great a separation of human settlement from the wildlife and resources as possible. The use of these lands for human habitation is still possible, so long as the density of development is limited. As examples, deer require a migratory path of at least 300 feet, and bald eagle nests require a much larger separation to human activity.

Advantages: The Town protects highly sensitive natural resources and agricultural lands for the long term.

Disadvantages: The change to densities low enough to protect the resources requires significant land holdings and so will work only in those areas not yet subdivided to smaller lots.

Choice: Revise the Mobile Home Park Bylaw

Based on the Town's recent experience, the use of the Mobile Home Park bylaw could significantly change the distribution of the population density and require significant new infrastructure support in areas not previously planned or designated. Consequently, the choice to make concerns how the bylaw might be amended to better meet the Town's overall planning goals.

One option is to connect the size and density of the projects with the location of existing infrastructure. As an example, the access to water lines and public transportation might be considered. Another option would be to vary density allowances by location or zoning district. As an example, locations near commercial centers may allow greater densities. This could include a sliding scale or density bonus for siting projects closer to the facilities deemed most important, or areas deemed capable of accepting higher densities.



Another option is to use the projects to help in the Town's housing goals. By requiring affordable units within the projects, the Town can gain additional units as needed to meet its goals. Because the most recent mobile home project was for the elderly, the project does not bring in additional school-age children and reduces the disparity between tax revenues and service costs. This makes the possible inclusion of affordable units a benefit to the elder population and the town tax base.

Advantages: The revision of the mobile home bylaw corrects what are perceived as issues with the present bylaw and how it has been utilized.

Disadvantages: The future use of the bylaw may be significantly altered by the possible revisions, and limit the potential to use this land use option.

Choice: Reconfigure some Industrial Zoning Districts

The Industrial Zoning districts should be used carefully to reinforce those locations acceptable for the most intensive land use options available under Middleborough zoning. Infrastructure support should be available, and changes in that infrastructure should be reviewed to determine whether there should be changes in the district as well. Also, separation of the industrial land areas from the residential zoning districts is an important action to ensure the continued value and quality of the nearby residential neighborhoods. This suggests several actions to consider.



The most significant infrastructure change in Middleborough will be the Route 44 reconstruction. The interchange at the existing Route 28/18/44 rotary and I-495 will alter the options for accessibility to the surrounding lands. With the continued success of the industrial parks within the DO boundaries, the alteration and possible expansion of the industrial lands maybe a realistic option. This choice could include consideration of extending the industrial

overlay zoning further up Route 28/18 as well as further south around the southern side of the present rotary.

The potential upgrading and possible expansion of the industrial lands at the southern boundary of the Town is another possible choice. However, in conjunction with this change, the Town must consider the local residential neighborhood and the nearby South Middleborough center. Some buffers as zoning districts are structural changes may be necessary to accommodate this upgrade.

The closed Ocean Spray facilities at Wood Street and the Nemasket River pose another choice for the Town. Continued support for the facility may be necessary through zoning changes. But first the decision must be made whether this area continues to represent a needed or desired industrial use when the environmental sensitivity may suggest otherwise.

Advantages: Expansion and correction of the industrial zoning boundaries will support this sector of the local economy, which continues to support local workers and provide a significant portion of the non-residential tax base.

Disadvantages: Expansion of the industrial boundaries will require reconsideration of the sewer expansion policy to incorporate the new areas. Land values are impacted when industrial zoning boundaries are altered. Expansion of industrial lands can lower adjacent residential values and a reduction of industrial zoning significantly reduces the value of the former industrial area.

Choice: Reinforce the Downtown as a Vital District

The Downtown is the present center of the social community, commerce and government for Middleborough. Support for the Downtown positions the community to reap some of the benefits of economic development and social commerce. There are a number of ways to ensure that



the center receives the highest level of activity. Some of those choices the Town could make include:

- Continue the streetscape improvements that make the location more attractive.
- Improve the building facades to present the best face of the built environment.
- Encourage residential units in strategic locations to increase the activity levels, security, and vitality of the center.
- Promote events and activities that celebrate the Town and its center.
- Determine whether the local regulations are limiting options to increase business activity, and change those regulations to create a positive environment.
- Provide sufficient parking and access to all Town facilities.
- Improve the remaining public parking areas.
- Establish a plan that improves the public facilities in an historic manner.
- Establish a plan that sets out a process for determining the use and reuse of public lands and buildings.
- Promote the local history and museums as a part of the effort to increase tourism.

The Town's Downtown and economic development officials and programs would be best positioned to ensure the coordination and completion of these ideas.



Advantages: By focusing resources and efforts on the Downtown, the town uses those resources most efficiently in promoting the center and increasing tax revenues to the Town coffers.

Disadvantages: The complexity of the Downtown, with its mix of businesses, government, activities and residents requires a complex set of programs to complete it. The coordination of the different efforts should be managed through the highest levels of the Town government.

B. Natural, Historic and Recreational Resources

1. Introduction

This section focuses on the complex of natural systems and created conditions that define Middleborough physically and culturally. It focuses on many of the town's qualities that people recognize and enjoy. The quality of Middleborough's natural environment is measured by the health of the natural systems and their contribution to the



quality of life within the community. In addition, important cultural resources, historic and prehistoric, can still be found within Middleborough. Consequently, the Town's policies should consider both the condition and quality of the resources, and how they relate to other land uses in the community.

However, many of these resources are vulnerable to significant change. With relatively low land prices and large tracts of undeveloped land in town, significant changes could occur in the condition, extent, and enjoyment of the natural resources. This, in turn, could ultimately reduce the value of land by reducing the health and quality of the resources. The reduction in natural values has consequences beyond Middleborough. Large and unique natural communities exist within Middleborough that are rare for this whole southeastern section of Massachusetts.

2. Goals and Objectives for Natural, Cultural and Recreational Resources

Among the goals and objectives advanced by the Planning Committee, the following have particular relevance to the Natural, Cultural and Recreational Resources. The goals and objectives provide a context for the findings and alternatives that have been developed for Land Use.

Goal

Invest public funds in open space preservation to maintain community character, protect vital resources and reduce the need for providing additional municipal services.

Specific Objectives:

- Identify the significant natural and historical resources of the town and develop appropriate preservation strategies for each resource.
- View Middleborough's natural and historical resources as regional assets and work with abutting communities to jointly protect them.
- Consider reforming of the Natural Resources Preservation Committee.
- Encourage establishment of a non-profit land trust to leverage other funds for preservation.

Goal

Preserve agricultural land, open space, cultural and natural resources, and large tracks of land throughout Middleborough.

Specific Objectives:

- Allow, encourage and maintain agricultural use of lands through zoning, conservation restrictions, and tax policies.
- Use 'conservation development' and other innovative tools such as estate-lot zoning and transfer of development rights to ensure the preservation of important areas.
- Develop techniques and options to preserve historic homes, buildings, sites and landscapes as cultural, tourist and educational resources.

Goal

Develop and maintain active and passive recreational resources for a growing community.

Specific Objectives:

- Establish multi-use trails, equestrian facilities, fishing, hunting, canoe/boat access, pond swimming, neighborhood playgrounds, bicycle facilities, motorbike facilities and interpretive nature areas as community-wide resources.
- Evaluate the advantages of opening a municipal and/or private golf course. In particular, look at the potential development of an 18-hole championship course with an associated first class hotel/conference center.

3. Key Findings

The natural, cultural and environmental resource evaluation emphasizes several fundamental findings that should shape planning for the future of Middleborough:

- There are natural restrictions by way of soil limitations and water availability that affect both development and local biota. These limitations must be recognized to understand natural change and development impacts.
- The town lies within three major watersheds. Two of them are closely inter-related: the Nemsaket and the Taunton river watersheds.
- Water resources, wetlands, streams, rivers and bogs, are a very important part of the town landscape, covering 25 square miles – over one-third of the town.
- One of the state's most unique resources is the Assawompset Pond complex, a major water resource system that is highly restricted and used by other communities for water supply.
- The Nemasket River, Tispaquin Pond, and Taunton River are the among the other important surface water resources.
- The Town also has large and biologically complex wetland systems. Separate from cranberry bogs are the Great and Little Cedar Swamps that, although altered significantly by manmade changes, represent some of the most unique regional habitat as evidenced by the significant bird populations recorded there.
- Groundwater availability and quality are exceedingly important to the growth of the community. Current information suggests that the most significant sources of groundwater for public supply are found within the central portions of town.
- The Town has highly varied natural habitats, supporting a great number of plant and animal species along the Taunton River and on the land surrounding the Assawompset Pond complex.
- Although not yet a critical issue, invasive species are potentially a problem that could impact the quality and enjoyment of the water resource areas.
- The anadromous fish runs represent one aspect of natural and socio-economic conditions that have actually existing for centuries.
- Archeological treasures from the Wampanoags and others can still be found at Titicut, Oliver Mill, and Wapanucket. The town's museums provide a resource base for the artifacts. However, important finds may be still available in the field.
- The Town has presently surveyed some 400 properties for the historic resource

inventory, which shows a strong connection to its architectural past.

- Scenic roads have been designated within town. These designations highlight historical and natural landscape conditions.
- The Town's open space resources include 42 Town-owned parcels covering approximately 1368 acres, five state-owned parcels totaling about 3708 acres, and ten privately-held parcels of land with about 640 acres of land.
- Well-used open space and recreational areas exist. But the goals for the Town include creation of new facilities and spaces for the population that will continue to grow.

4. Existing Environmental Conditions

a. Environmental Resource Inventory

Soils

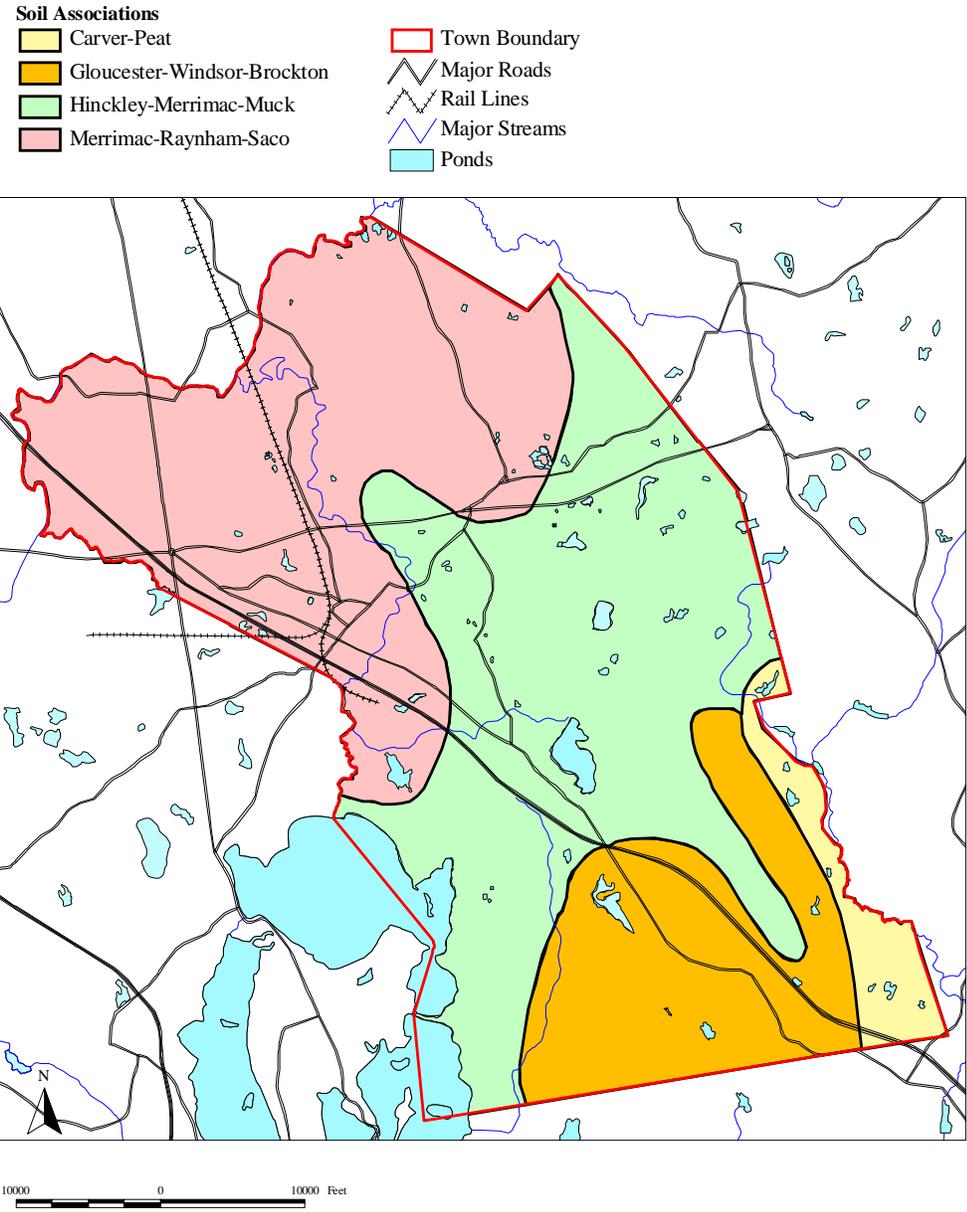
The natural soil conditions define the potential for everything from biodiversity to human construction. The Natural Resources Conservation Services (NRCS; U. S. Department of Agriculture) identify soil types and categorize them according to their qualities. The principal soil types of concern within 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 noted in the most recent Town Open Space 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 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. In addition, the Carver soils found predominantly in the southeastern side of Middleborough are poor for agriculture but support mostly wooded areas that provide valued upland habitat.

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 B1: Soils Associations

Watersheds

The watersheds define the flow of surface waters and groundwater flow through the town. Middleborough is flat, with generally no more than 100-foot changes in elevation across the town. However, the town lies within three different watersheds:

- Taunton River watershed, which is the most significant watershed in Middleborough, includes Black Brook, Fall Brook, Whetstone and Raven Brook, Bartlett Brook, Purchase Brook, Otis Pratt and Poquoy Brook, and the important Nemasket River, which takes water from the Assawompset Pond complex. This watershed is one of the most important from the standpoint of regional ecological and cultural values, as will be discussed further, below.
- Weweantic River watershed, which covers a significant portion of the Rocky Gutter State lands and include a majority of the town's cranberry bogs.
- Sippican River watershed, which collects from the southern most portions of the town.

Major Water Resources

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.

Assawompset Pond Complex

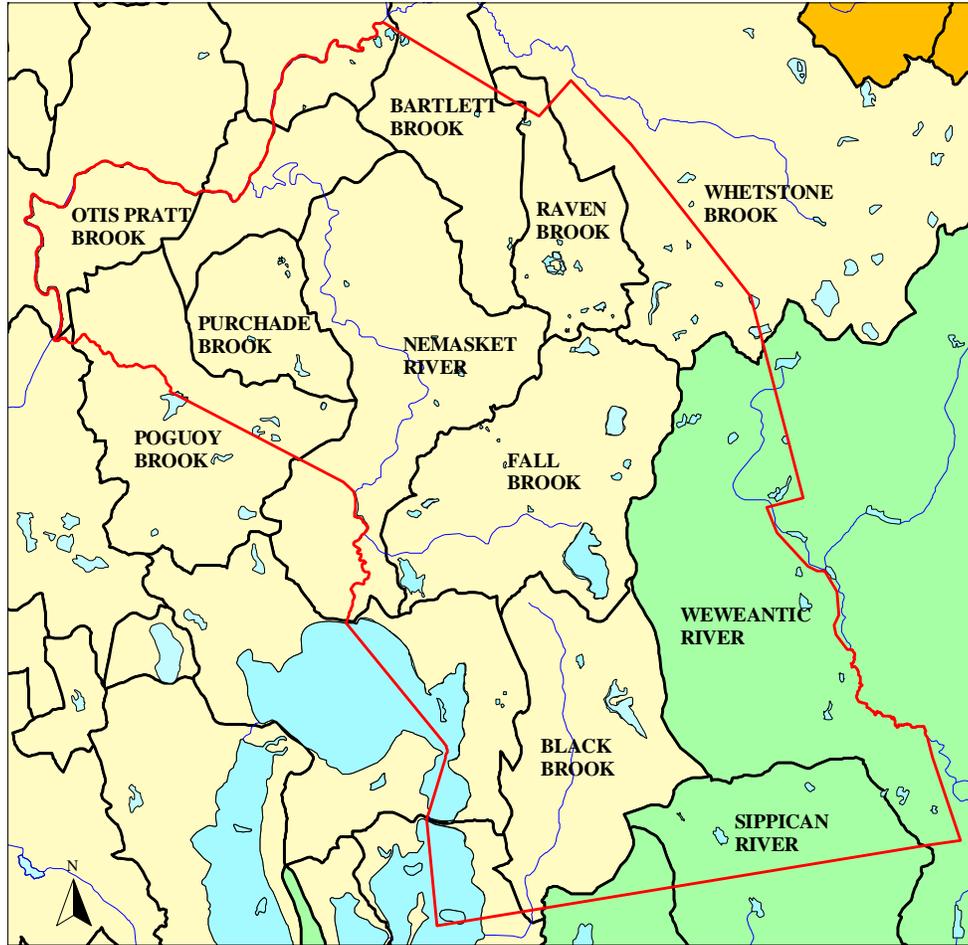
Running eventually to the Taunton River, the Assawompset Great Pond system is one of the most important regional water resource areas in the State. Great Quittacus, Little Quittacus, Assawompset, Pocksha and Long Ponds are all part of the Assawompset Great Pond complex. This is the largest natural inland 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.

The pond complex 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, Achesnet, 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.

Town of Middleborough Surface Watersheds

- | | | |
|---|---|--|
|  Major Streams | Major Watersheds | Middleborough Surface Watersheds* |
|  Ponds |  Taunton River | 1. Otis Pratt Brook |
|  Middleborough Town Boundary |  Buzzards Bay | 2. Poguoy Brook |
| |  South Coastal | 3. Purchase Brook |
| | | 4. Nemasket River |
| | | 5. Bartlett Brook |
| | | 6. Raven Brook |
| | | 7. Whetstone Brook |
| | | 8. Fall Brook |
| | | 9. Black Brook |
| | | 10. Weveantic River |
| | | 11. Sippican River |

*Surface Watersheds as identified in Town of Middleborough Open Space and Recreation Plan 1987.



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.

Figure B2: Watersheds

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.

Beyond the area's importance for the historic development of the region is the fact of the prehistoric Wappanucket settlement, which was occupied about 9700 years ago and has been considered one of the most important archeological investigations in the area because of its definition of the village pattern in southern New England. Further investigations have been suggested in the Middleborough Historic Preservation Plan.

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. The Taunton River later runs south through Taunton and Fall River before flowing into Mount Hope Bay. The watershed is 562 square miles in area 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:

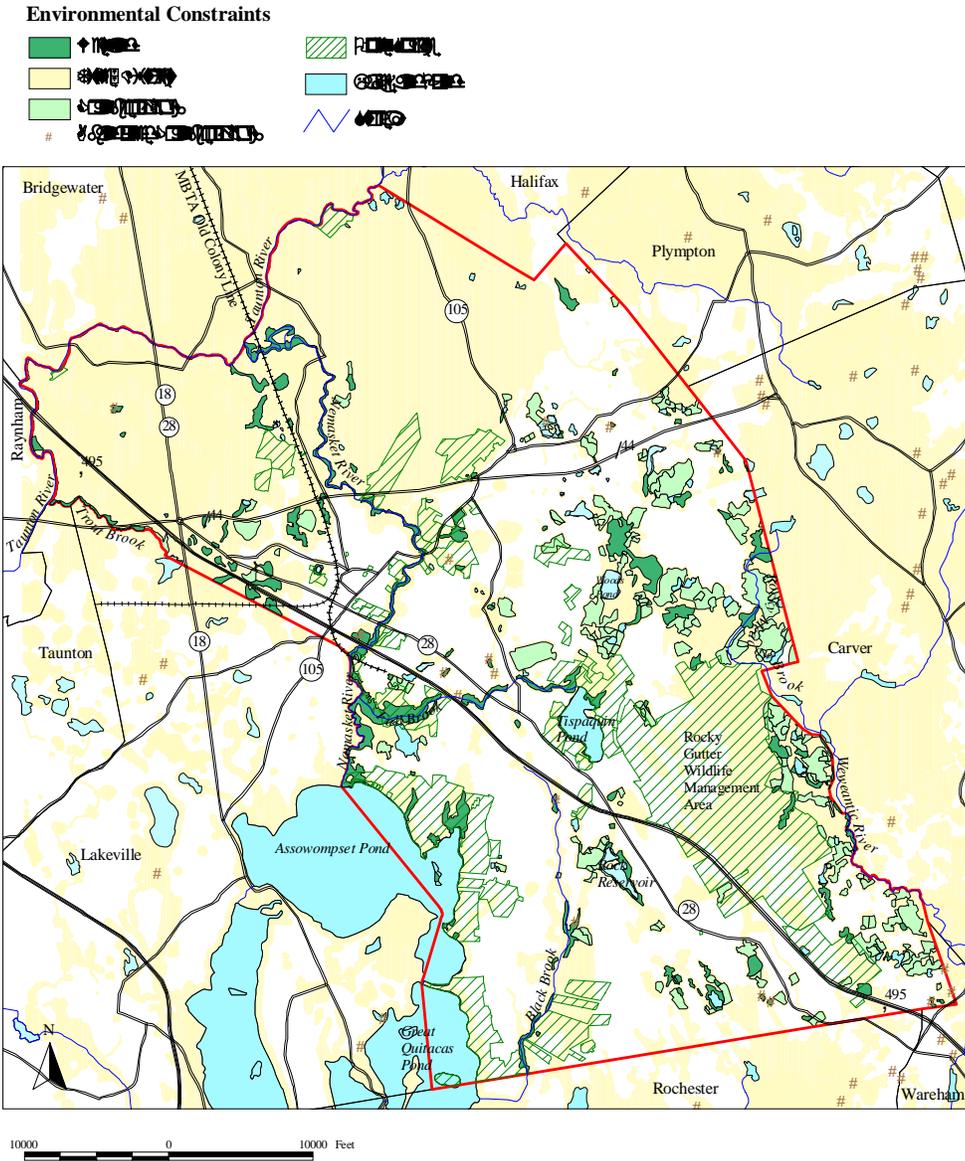
- The river is of statewide importance to conservation goals because of its relatively undisturbed nature and its resources. However, full protection would be a highly ambitious effort.
- The Taunton River Greenway was listed among the top three priorities as part of the State Department of Environmental 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. The possible wetland restoration project at the K&F Brickyard and the acquisition of the Cumberland Farm property would create significant assets for Middleborough.

Town of Middleborough Environmental Constraints: Surface Water and Wetlands



Source: Executive Office of Environmental Affairs, MassGIS. Land use, title 5, abandoned cranberry bogs, open space, hydrology and major streams.

Figure B3: Environmental Constraints: Surface Waters and Wetlands

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 more rare 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, regulated under state law (310 CMR 10.00 et seq.) can be found in Middleborough. The major wetland systems other than the Great and Little Cedar Swamps within Middleborough include the following:

- Meeting House Swamp, a large wetland on the north side of Route 44
- Beaver Dam Swamp, along Beaver Dam Brook
- 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.
- 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. (Additional information on the water supply and delivery system is discussed in the Infrastructure Findings section.)

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.

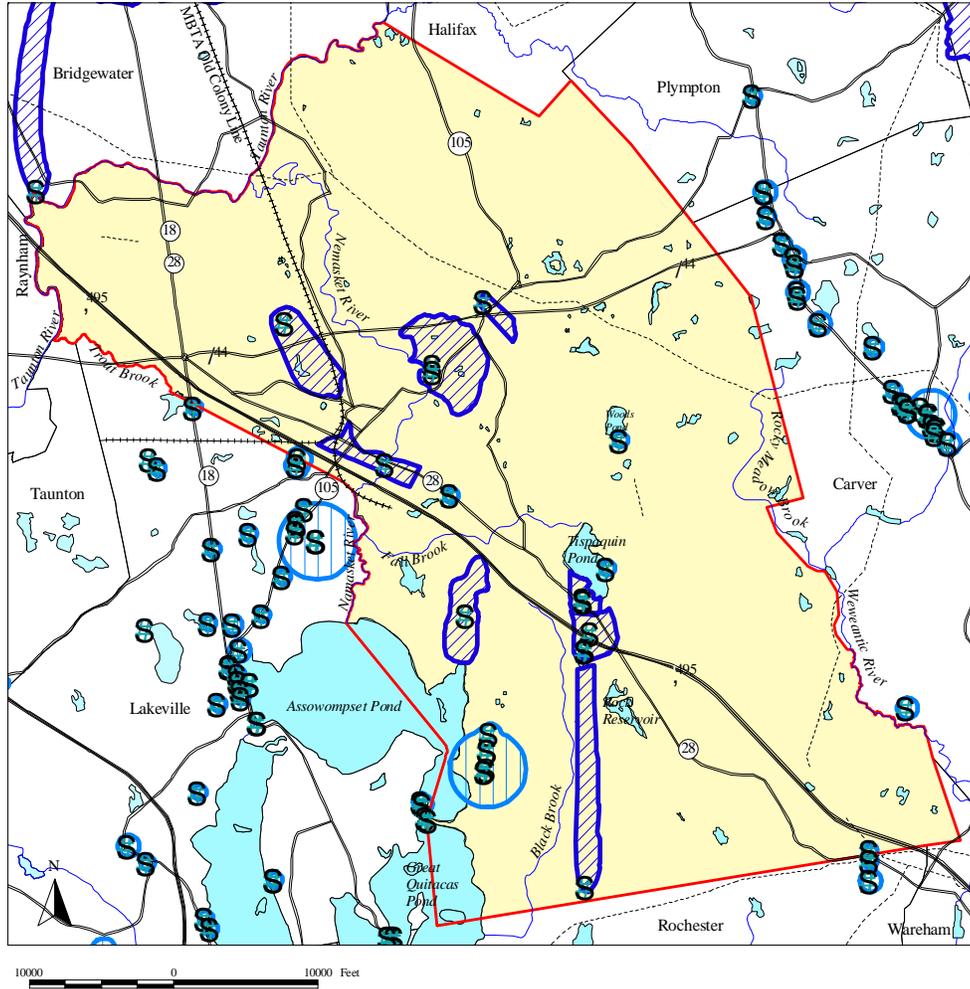
This becomes important to managing the water resource balance within each watershed as well. As water withdrawals from the ground increase, this in turn can deplete the water reserves for surface water resources. This is especially important for water resources within the Nemasket River, Fall Brook and 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.

Town of Middleborough Environmental Constraints: Groundwater

Environmental Constraints

- Public Water Supplies
- DEP approved Zone 2's
- Interim Wellhead Protection Area
- Lakes and Ponds
- Streams



Source: Executive Office of Environmental Affairs, MassGIS. Public water supplies, interim wellhead protection areas, DEP approved Zone II's, hydrology and major streams.

Figure B4: Environmental Constraints: Groundwater

Biota

Middleborough is environmentally rich with a wide variety of habitat types and wildlife species. Plant and animal lists for the species found in Middleborough are much too long to be of specific use to the master plan. However, there are critical habitat areas that have been identified and which are important in the overall planning of the town.

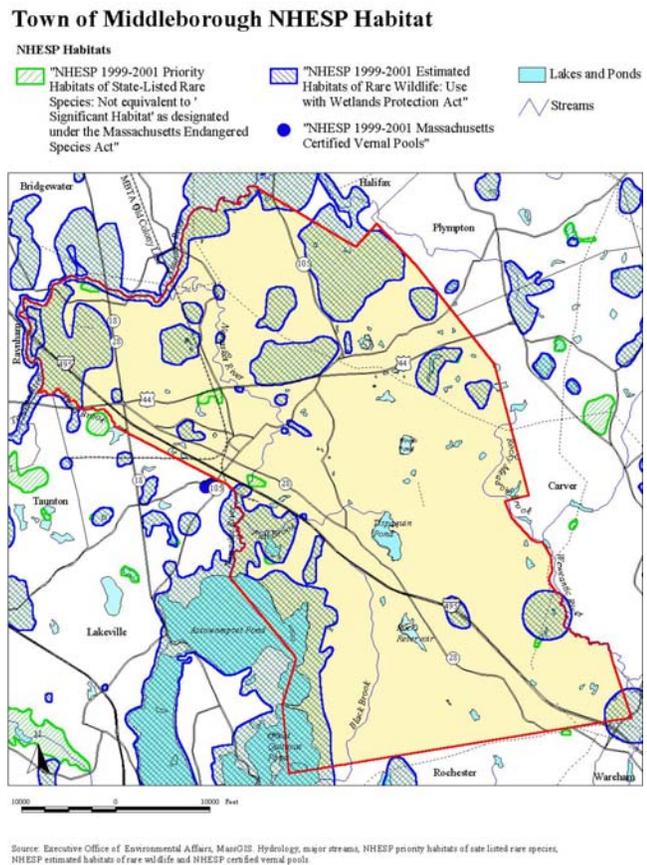
Figure B5: Habitats

Listed Species

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. Of note, there are no certified vernal pools in Middleborough, a unique habitat supportive of amphibian species. This does not mean they do not exist, only that no area has met the test of the State for certification.

Vegetative Cover

In 1980, approximately 65 percent of the town was classified as woodland with 14.5 percent (6,720 acres) as open and agricultural land. Although a significant portion of land remains as woodland, the growth of residential and commercial development along the major routes has reduced the percentage of natural and open lands. The development has occurred principally within the central and southern portions of Middleborough. However, significant new development has recently started in the areas north of Route 44.



Invasive Species

Another issue of importance to the wetland resources in Middleborough is the invasion of non-native species. Aquatic plants such as water chestnut and milfoil, and wetland species such as purple loosestrife, have been problems 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 measures such as herbicides also impact the desired native species. The principal options for control involve manual or mechanical harvesting. The pristine nature of the Taunton River has kept it relatively free of invasive species.

Fish Runs

As previously noted, Middleborough has one of the most prolific alewife/herring runs in the state. The migration path of the anadromous fish is up the Taunton River and then up the Nemasket River to the Assawompset Pond complex. Two fish ladders have been installed along the Nemasket. This fish run in turn provides a regular recreational fishery at Oliver Mill and a food source for the animals found around the Assawompset Pond and spawning areas.

b. Cultural Resource Inventory

Middleborough is also rich with a variety of cultural resources. Cultural resources in this context include archeological (pre-historic) and historic resources, and the scenic vistas and unique landscape areas that give a singular feel to the sense of Middleborough as a town. The archeological resources include the sites where digs have unearthed Native American village life and other hard resources, but also include the Wampanoag Canoe Passage with its cultural value defined by the original use of the waterways. The historic resources include both individual buildings and the settings of groups of the buildings within a landscape. Lastly are the areas of landscape or vistas that have allowed the Town to define them for the public as Scenic Roads.

Archeological Resources

An inventory of prehistoric sites can be found at the Robbins Museum and many of the thousands of artifacts recovered can be viewed at the museum. The oldest history of Middleborough comes from the Wampanoag people who frequented the area.

Current understanding was that the movements of these early people did not allow for concentrations of many artifacts except for the most heavily used areas, and these areas are associated with areas rich with natural resources, and connected by large trail systems. Three of these heavily used areas or settlements in Middleborough are at Nemasket, Wapanucket and more recently at Purchase. Connecting the historical with the present, the principal trail between the Nemasket and Wapanucket areas is approximately the location of Route 105 today. In addition, lesser-used sites may be called camps. The

1987 Open Space Plan lists at least three such sites. Other sites of importance for potential finds are frequently found along the Taunton and Nemasket rivers. The many natural fisheries found in these rivers probably supported the people seasonally.

Three priority areas were identified in the 1989 Middleborough Historic Preservation Plan for preservation: Titicut Reservation/Fort Hill, Oliver Mill/Muttock/Nemasket Crossing, and Wapanucket.

- Titicut Reservation/Fort Hill area consists of large Native American encampments along the Taunton River. Areas of burials and a fortification have been found in the area along with a fish weir in the river.
- Oliver Mill/Muttock/Nemasket Crossing includes the Wading Place and a number of fish weirs. The connection to Oliver Mill has allowed the recent establishment of the Muttock Historic and Archeological District, which includes both the historic and prehistoric resource areas.
- Wapanucket has been listed on the National Register since 1973. It holds a very old Native American settlement with a history back about 9,700 years. Located along Assawompset Pond, the settlement was probably supported by many of the natural resources that are still seen there today.

Historic Resources

In accordance with its goals the Historic Commission prepared an inventory of the town's historic sites and buildings. About 400 properties have been inventoried, in addition to the archeological sites. The Commission has also had prepared a 'predictive' map for showing the sensitivity for archeological and historical artifacts of areas within the town. Some of the sites that have been considered historically significant include:



- The historic village centers (listed below)
- Oliver Mill, Peter Oliver House, General Abel Washburn House, which are now part of the Muttock District;
- Richard Sampson Homestead;
- Smallpox cemetery and hospital;

- Pratt Farm including Upper and Lower Native American Paths;
- Several old and one-room school houses;
- Charles Stratton and Lavinia Warren (“Tom Thumb”) House;
- Site of a colonial fort of 1670 (Peirce Playground).

A more detailed listing of historic places can be found in “Middleborough’s Comprehensive Historical Survey”, published in 1984 and referenced in the 1987 Open Space Plan. The Middleborough Historic Commission adopted the Preservation Plan, which recommended establishing historic districts at the historic village centers of Titicut Green, Eddyville/Waterville, Middleborough Town Center (19th century), the Green, and Rock Village.

The first historic district designation for Middleborough was along Route 105 into the downtown area, including the stretch of residential dwellings, Town Hall, and some of the connected historic structures and museums.

Recently, the Muttock Historic and Archeological District, which was also included in the Preservation Plan and which includes the Oliver Mill, Oliver House, Washburn House, and Native American sites, was granted the designation of a National Historic Register district. The district includes 40 sites and buildings of the 19th and 18th century and a few archeological sites. As a result, or as part, of the most recent efforts for the Murdock district, grant funds have been sought for Oliver Mill Park to upgrade the site and improve the historic and recreational experience. A preliminary study and plan for those improvements has been prepared and will be presented to Town Meeting this fall.

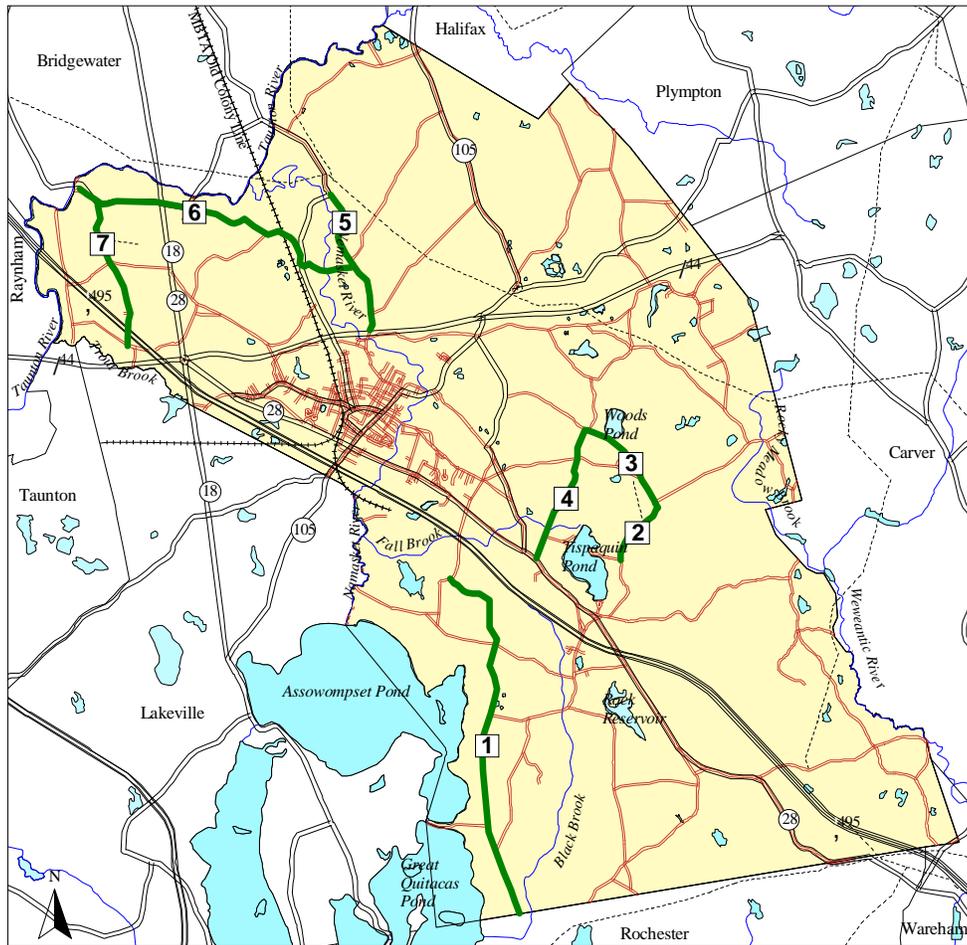
Scenic Roads

As noted, the town also has vistas and landscape areas that provide a unique and pleasant experience for the public. Within State law, the Town has the option to designate those special areas as Scenic Roads and overlay those roads with special provisions for review of any changes within the public rights of way. 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 Muttock Street
- Plymouth Street from Summer Street to the Bridgewater town line
- Pleasant street from Route 44 to Plymouth Street

Town of Middleborough Scenic Roads

- | | | |
|--|--|--------------------|
|  Major Roads |  Scenic Roads | |
|  Local Roads | 1. Marion Road | 5. Summer Street |
|  Rail Lines | 2. Purchase Street | 6. Plymouth Street |
|  Transmission Lines | 3. Chestnut Street | 7. Pleasant Street |
| | 4. Tispaquin Street | |



10000 0 10000 Feet

Source: Executive Office of Environmental Affairs, MassGIS. Major roads, trains, MBTA, US Census Bureau Tiger files (local streets) and transmission lines.
 Town of Middleborough, Open Space and Outdoor Recreation Conservation Plan 1998.

Figure B6: Scenic Roads

c. Public Lands

A complete listing of the open space, conservation and recreation lands is included in the 1998 Open Space Plan. In summary, land currently protected and preserved within Middleborough as listed in the last Open Space Plan includes:

- A total of 42 Town-owned parcels covering approximately 1368 acres,
- Five state-owned parcels totaling about 3708 acres, and
- Ten privately-held parcels of land with about 640 acres of land.

Most of the privately-held lands in the list are owned by the Wildlands Trust of Southeastern Massachusetts and are considered protected for the long term.

Other significant public land holdings are the lands owned by the cities of Taunton and New Bedford around the Assawompset Pond complex. While the cities hold some 8,000 acres around the ponds, the area within Middleborough is less than 1500 acres. These lands are not open to public access, however there are a number of other public lands along the shores of some of the important water resource areas.

Private lands, which provide some public access, include the three campgrounds around Tispaquin Pond, the KOA campground north of Route 44, and the Wakinquoah Rod and Gun club. These areas, with almost 600 acres of land, control the use of their lands and maintain them in an open condition, but are not required to do so.

The Town has used its open space resources for a variety of purposes and under different departmental controls. For example, the Water Department is made responsible for all water supply sites. An interesting management plan of note is the Soule Farm, which has been leased by the Selectmen to a nonprofit corporation for environmental education.

Public Waterfront/Riverfront Lands

Along the Taunton River and Nemasket River are some important land holdings that while they do not provide full protection to the rivers, do provide some opportunity for access and a measure of protection that should be increased.

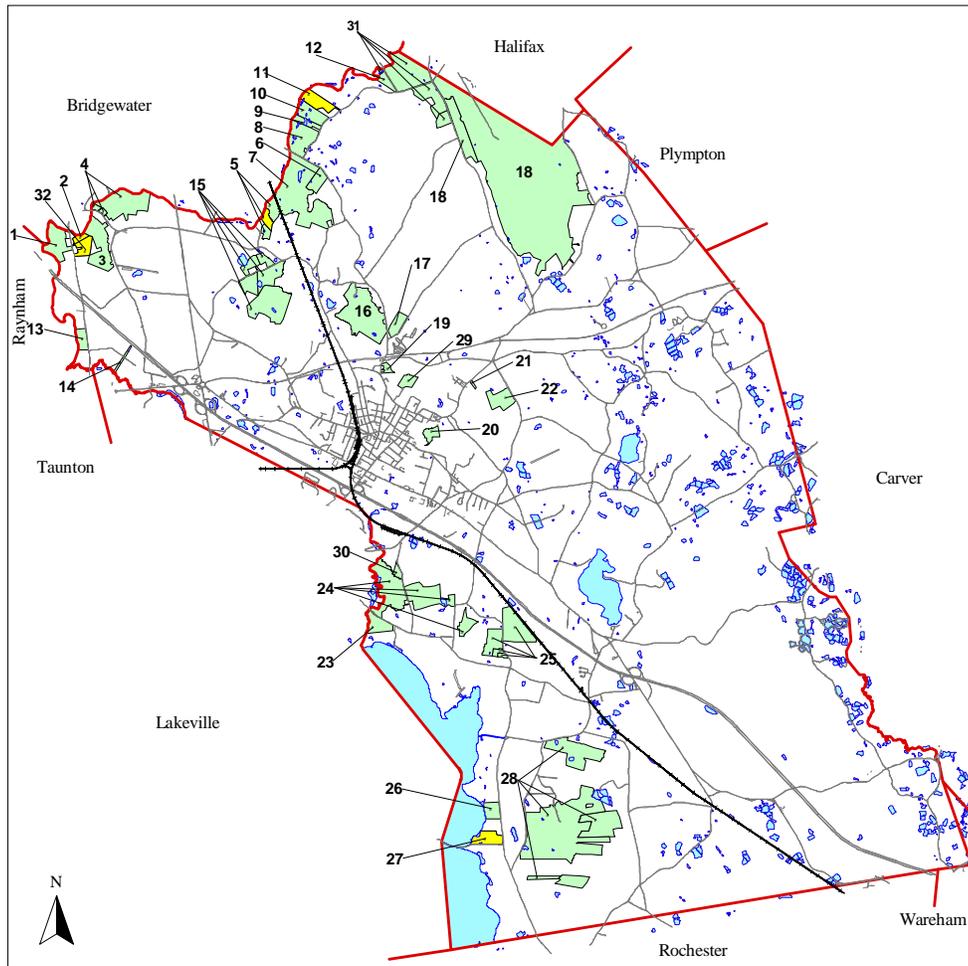
Along the Taunton River on the east side of town are 129 acres owned by the state Division of Fish and Wildlife (72 acres) and the Town (57 acre Bradshaw property). Two other parcels of 13 acres – the Slein property in North Middleborough and another 13 acres – the Bally property at the junction with the Nemasket River are the only other areas owned by the public along the Taunton River in Middleborough.

Figure B7: Existing and Proposed Lands for Preservation

Town of Middleborough Parcels Identified for Preservation

- Ponds and Wetlands
- 31 Parcels identified for preservation*
- 11 Parcels acquired for preservation*

*Information provided by Middleborough Planning Office.



10000 0 10000 Feet

Source: Town of Middleborough assessors data and GIS data (town boundary, parcels, roads and hydrology).

Along the Nemasket River are some important public holdings:

- Two parcels of 2 and 3.5 acres owned by the Town as conservation land;
- The Town's Water Pollution Control Facility land;
- Oliver Mill Park and downstream conservation land;
- Water Department wellhead protection lands of 59.28 acres, and a smaller 8-acre wellhead site at East Grove Street;
- Wading Place;
- Thomas Pierce playground;
- Thomas Memorial Park at Wareham Street is 2.92 acres managed by the Gas and Electric Department;
- Highway and Water Department garage property;
- Senior Citizen's housing project;
- Mayflower/Burkland School;
- The High School;
- Lakeville Hospital land; and
- Several more conservation properties.

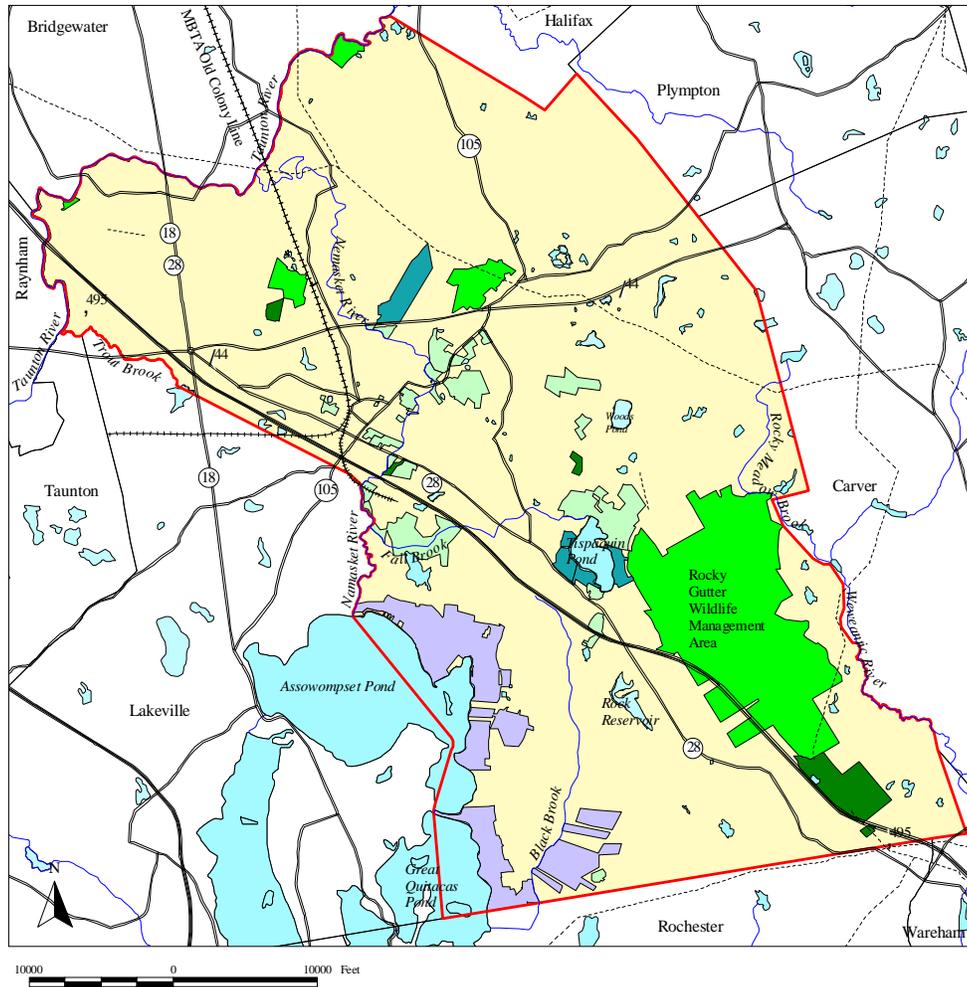
In addition, along the last section of the river before the municipal boundary lie the Ocean Spray conservation lands.

As described previously, other important pond front lands can be found around Tispaquin Pond and the Assawompset Pond complex.

Town of Middleborough Open Space

Open Space Ownership

- | | |
|---|--|
|  Town of Middleborough |  Private |
|  Commonwealth of Massachusetts |  Private Non-profit |
|  City of New Bedford |  Lakes and Ponds |
|  City of Taunton |  Streams |



Source: Executive Office of Environmental Affairs, MassGIS. Open space, hydrology and major streams.

Figure B8: Open Space

Town Recreation Areas and Parks

The number and quality of local facilities helps define the quality of life for residents – their number, usage, organization, maintenance, security, means of access, and relationship to the surrounding neighborhood are all crucial considerations. The Town’s recently completed Open Space and Recreation Plan includes the listings of those spaces and their assets, so the list is not repeated in detail in this report. However, it is evident that the Town will need additional active recreational fields to accommodate its future population growth. Recent demand has been assisted by private funds put into the Field of Dreams. Future improvements may require continued private support or a public program of improvements. Key existing recreational areas include:

- Peirce Playground – Centralized within the Downtown area, this park holds a public swimming pool, a tot lot and a number of ball fields within 10 acres of land.
- Oliver Mill Park – This five-acre park is one of the highlights of the Muttock Historic District and is well recognized both locally and regionally because of its location beside Route 44.
- Field of Dreams – This privately funded field provides easy access for Little League and youth soccer programs off of Route 28.
- Westside Playground – Recently improved, this playground can handle large neighborhood groups.
- Skating park – A relatively new addition approved by Town Meeting last year at Thomas Peirce playground.

Recreational Facility Goals

Many of the lands identified in this report include conservation lands that require a more careful management of use to match the carrying capacity of the resources. However, the Town is looking for active recreational areas as well. In the 1998 Open Space Plan, several of these more active needs were recognized as community needs including the following excerpt from Summary of Community Needs, page 68:

"Improve handicapped access in all recreational areas.

Provide wholesome recreational activities for town youth.

Provide ample access for water resources recreation.

Develop multi-use trails for horse back riding, hiking, cross-country skiing and snow-mobiling

Develop bike paths as an alternative mode of transportation and recreation.

Develop picnic areas particularly near a swimming beach.”

5. Alternatives for Natural, Cultural and Recreational Needs

The Town of Middleborough can help shape future land use patterns through a combination of regulations and actions over time. This section of the report examines choices that might be made to achieve the goals and objectives for land use.

a. Natural and Cultural Resources

The importance and value of the natural and cultural resources in Middleborough cannot be disputed. However, the preservation and management needs for the natural and cultural resources in Middleborough far exceed the local funding and staffing resources. Since the resources are truly regional in nature, they should be recognized as worthy of a high level of statewide importance. For example:

- The lands around the Assawompset Pond complex are as important to the local natural resources as they are to the water demands of the cities. Consequently, the partnership between the communities should be strengthened.
- The uniquely pristine quality of some of the water resource areas suggests that significant savings could be made to protect the existing water quality rather than having to restore it later.
- The size of the state holdings within the town suggests a commitment to the Town's resources that should continue to be supported.
- The incredible number of prehistoric resources that could be so easily lost to development without investigation and assessment begs for a concentrated effort.
- The almost pristine nature of certain historic districts; e.g. Titicut, suggests that this is a clear opportunity to preserve local examples of the classic New England traditions.

By its very nature, the size of Middleborough and its limited development has created an opportunity to preserve these aspects of its natural and cultural resources. However, state and federal funds are also limited, so different approaches must be taken to attempt to preserve lands and their resources. Below are some of the options to meet the Town's preservation and management needs.

Choice: Using Tax Abatements to Preserve Land

'Chapter 61' properties fall under a state municipal finance law that allows a Town to abate taxes on land used for agriculture, silviculture or recreation. In return, the Town holds the 'right of first refusal' should the property be put up for sale. Because there are so many properties under this designation within Middleborough, including such land as the former Cumberland Farms parcel in the northeast corner of town, the Town would be

hard pressed to fund the purchase of all the land so designated. Consequently, this is not considered a permanent land protection plan, but may contain selected opportunities for public, private or non-profits to take action. Overall, it is hoped that the tax abatement may be sufficient to hold back the need to develop the lands at all.

Advantages: Provides a layer of control on the use of land and supports land owners interested in maintaining current uses.

Disadvantages: This option does not provide a full control over potential reuse, and places the Town in a financial burden if all such lands are proposed to be developed.

Choice: Using Conservation Restrictions to Preserve Land and Resources

Similar to conservation easements, which are supported by deed restrictions for a specific purpose that could be privately concluded, a Conservation Restriction (CR) is actually established under state law and each one is reviewed by the state. The CR also includes a provision for third party review and control of the restriction to prevent easily modifying the CR. However, the CR also provides the opportunity to significantly reduce tax burdens because of the restriction on the land. The success of these programs is dependent upon proactive steps made by the Town to educate the landowners and inform them of their options and benefits. By playing an active role, the Town becomes the first resource for the landowners to turn to, which increases the potential for obtaining the CR's.

Advantages: These are full legal agreements that establish the protections determined necessary for the lands.

Disadvantages: These require legal counsel and are more restrictive. Thus, they are harder to complete as agreements with uninformed landowners.

Choice: Use of Outside Land Trusts

Outside of Town government is the potential for a non-profit group (an IRS-classified 501(c)3 entity) to raise funds beyond that available to the Town with the specific purpose of land acquisition and maintenance. In fact, there are a number of open space parcels in the Town already owned by a regional non-profit, The Wildlands Trust of Southeastern Massachusetts. In certain communities, the local land trusts have built a relationship with their host towns to share certain costs and administrative procedures.

Advantages: The land trusts provide a service that the Town may not be able to accomplish by raising funds outside the government process.

Disadvantages: The land trusts may also be subject to restrictions by their charter, and the lands purchased may be restricted and cannot be used for other municipal purposes.

Choice: Non-profit Management of Public Lands

Some of the significant costs for land management develop over the long term and towns can be faced with escalating cost burdens. The leasing of Town land to non-profits, who can in turn receive funding from fees and other sources can be a solution. The leasing of the Soule Farm for environmental education is a key example of this option.

Advantages: This potentially reduces costs to the community by placing the care in entities with more efficient operations.

Disadvantages: The options for these services may be very limited.

Choice: Consideration of the Community Preservation Act

The recently approved Community Preservation Act provides greater local control of funds for land acquisition, historic preservation and diverse housing opportunities. This allows the local residents to also determine where and how some of their tax dollars should be spent. The option of buying land and preserving historic resources before development occurs could be decided at the local polls.

Advantages: This provides a way to increase revenues, local tax and state, for specific community goals.

Disadvantages: This requires an increase in the tax burden on local residents.

Choice: Improvement of the Demolition Delay Bylaw

Although a demolition delay bylaw is already in place, the promotion and education of the public about its implications and use is very important for its application. The Historical Commission has already held several hearings spurred by the bylaw, which allows up to six months for negotiations and alternatives. Options such as the Federal Homeowners Assistance Act for historic district tax credits can be presented for consideration.

Advantages: Allows time to negotiate alternatives to loss of historic structures.

Disadvantages: Adds to the short-term costs of development for the landowner.

Choice: Installation of new Local Historic Districts

The Town's two historic districts are considered very successful. The option of adding other historic districts at least to cover the areas described previously as the historic village centers, would allow the same local bylaw controls and recognition to be added for those sites. For example, The Green, which was the original town center, needs protections for both buildings and landscape to retain its scenic qualities.

Advantages: Creates a zoning district with all the powers of the Town allowed by zoning.

Disadvantages: Requires the education and acceptance of the landowners within the proposed district.

Choice: Expansion of the Street Trees Program

One option to maintain the natural landscape along the public roads is to further develop the local street trees program to provide protections to the trees along the Town roads. As a lesser option to a scenic road designation, this still provides a process and program to maintain the street trees.

Advantages: Creates a landscape design that beautifies and identifies the town.

Disadvantages: Increases the maintenance costs for the Town.

b. Recreational Resources

Choice: Meeting Recreational Facility Needs

Expansion of active recreational facilities will have to proceed with the expanding population. However, maintenance of the facilities will become a more significant fiscal burden at the same time. To accommodate the need for some recreational options, the Town could consider some creative solutions.

One concept for creating new opportunities for access to the rivers and ponds is to use existing rights of way. Some research may be necessary to determine if older ways allow public access, or the Town could use existing land holdings and develop them for certain access opportunities. One example would be to use bridge crossings and determine if they could be utilized for river access for canoes, fishing, or hunting.

Advantages: Using existing rights of way will add no land costs for the Town.

Disadvantages: Some of the research required to determine access can be lengthy and difficult.

Choice: Providing New River Access

Current bridge crossings of the Taunton River are in varying states of repair. Several are closed until repairs can be made. This changes the pattern of use of the local roads and the potential impact to the river. The State has currently committed to providing funds to improve some of the bridges in Middleborough, including the North Street Bridge along the Nemasket River. With the reconstruction may come an opportunity to provide drop-off spots and access to the rivers.

FYI: List of Taunton River Bridges connecting Middleborough

- Auburn Street
- Woodward Bridge from Summer Street
- Titicut Street
- Route 18/28
- Sturtevant Bridge from Green Street
- Pratts Bridge at Vernon Street
- I-495

Advantages: State funds could be used to improve access.

Disadvantages: State funds are more difficult to obtain at this time.

Choice: Using Outside Funding Sources; Partnering

The Parks Department must continue to expand its programs with limited resources. It becomes especially difficult to maintain and upgrade the parklands as new users and uses demand more of the resources. An option is to partner with private entities to provide direct assistance or funds for the purpose of maintenance of the lands and facilities. Typical with these programs, highly visible recognition of the entities aiding the Town helps to encourage their participation.

Advantages: Businesses may find the opportunity for advertising and community goodwill.

Disadvantages: Townspeople may require a standard that does not allow business partnering.

Choice: Using Outside Funding Sources; Tourism

Most other recreational areas require much larger land areas to accommodate the activities. Here the use of outside funds needed for Town projects could be generated by tourism - visitors willing to pay to come see and experience the areas presented by the community for the visitor's enjoyment. Well-developed tourism plans require a full commitment by the Town as a whole to accept visitors (and their dollars). They also include a continuing financial commitment, making improvements ranging from interpretive displays at key areas to public toilets, training, promotional materials, and consideration of how to fund the higher maintenance costs stemming from more intensive use of the lands and facilities. However, the results of the revenues to the local businesses and even directly to the Town for access to municipal lands could be significant and help

pay for other needs within the community such as soccer and ball fields. Tourism could easily be used to also fund natural resource and cultural resource projects because of their direct connection to the tourist's experience.

Advantages: Tourism can add significant new funds to local receipts, which in turn can support new government initiatives.

Disadvantages: Tourists add additional demands on the community for other services and the acceptance of increased traffic. Also, the ability of the Town to successfully compete for tourist dollars with other regional attractions is not clear, and may not be feasible on a cost/benefit basis.

Choice: Change in Municipal Management Structure

Management of the large land holdings in Middleborough, and the planning needed to decide on the best options for acquisition and preservation are best completed by a standing committee created for this purpose. The constituencies for open space, natural resources and cultural resources can all be represented within the committee. If the Community Preservation Act were to pass locally, this could also be the vehicle to manage the additional project funds. One option is to re-establish a group such as a Natural Resources Planning Committee as the Town's principal committee for program planning.

Advantages: Development for more focused local planning for the Town's resources can improve the overall quality of those resources.

Disadvantages: The support for the committee must be clearly established by Town Meeting action or the committee may not be as effective in the planning and management.

Choice: Specific Project Alternatives

Provided an opportunity during a visioning process sponsored by the State last year, six different multi-purpose open space projects were proposed to the State Department of Environmental Management for the state-wide Trails and Greenway Plan by participants from Middleborough. The projects included:

- Taunton River Greenway
- Nemasket River Greenway Trail
- Assawompset Pond Complex Trail System
- Southeastern Massachusetts Linkage Trail
- Equestrian/Multi-use Linkage Trails
- Route 44 Bike/Multi-use Path

Taunton River Greenway:The proposal includes a 600-foot to 1000-foot wide swath on either side of the river. The resources for protection within the area include archeological, historical, natural wetland and open water resources.

Nemasket River Greenway Trail is an important resource project for Middleborough. The Nemasket River is already lined with some important open space and protected areas. This project would look for the few key properties along the river and establish the connecting links between the remaining parcels.

Assawompset Pond Complex Trail System takes advantage of the significant land holdings around the ponds by other communities, and looks to gain some additional trail areas for public access away from the critical surface water areas. The program would be akin to the Quabbin or Wachusett Reservoir models developed by the Metropolitan District Commission (MDC) for access around those critical water supplies. A summary of MDC public access guidelines is attached for helping to understand the types of controls placed on access.

Southeastern Massachusetts Linkage Trail: This the most ambitious of the projects and intends to link the central portion of the whole southeastern portion of the state with an east-west corridor of very significant length. The trail would cross the Assawompset Pond and Rocky Gutter areas and so become an important aspect to Middleborough's master plan.

Equestrian/Multi-use Linkage Trails would create a unified trail system allowing greater opportunities for bridle paths and trails. Existing bridle trails can be found around Assawompset Pond, Pocksha Pond, Fred Weston Forest, Quittacus, Pratt Farm, Thomastown, and the Forest at Tispaquin. Connections between these trails, particularly from Assawompset to Rocky Gutter would also play to the interest for the Southeastern Linkage Trail, above.

Route 44 Bike/Multi-use Path is potentially viable because of the proposed reconstruction of Route 44 through the Town. Proposed as a co-existing path within the Route 44 right-of-way, the path would require no expensive land takings. However, the relatively pristine nature of the land beside the highway in many areas would also be reason to consider the impact of expanding the impervious surface for a bike and roller blade path.

These projects could become a central part of the Middleborough open space planning effort. To determine how they may fit into the Town's overall strategy, and to provide the maximum potential for state funding, it is recommended that the Town's Open Space plan be re-opened to allow the open space planning process to consider specific inclusion of these projects or some related concepts.

The Open Space Plan is developed in a state-mandated process that requires public input and discussion specific for the purpose of creating a plan for recreation and conservation. However, once established and approved, the plan allows the Town to apply for funds for

acquisition or improvements. The Middleborough Open Space plan was last completed in 1998 and these plans maintain their status with the state for three years. Given the significant projects presented to the DEM, the planning process should be initiated fairly quickly to ensure the best resulting plan and (hopefully) wide spread participation.

Choice: Support for Preservation Recommendations by Others

The Wildlands Trust of Southeastern Massachusetts, in their report on the Taunton River Corridor, Natural Resource Inventory and Conservation Plan of February 1998, suggested the following acquisition strategies within Middleborough.

- Priority one with the highest biodiversity value for acquisition by the State Division of Fish and Wildlife: at the Poquoy/Taunton confluence, 280 acres of land in Raynham and Middleborough.
- Priority two within the river corridors, at smaller but unique sites: at Puddingshear Brook north of Route 44, 250 acres, at Otis Pratt Brook west of Route 18, 175 acres, on the Upper Nemasket River at Vaughn and Wood street, 630 acres, and the River Street floodplain at Auburn Street, of 300 acres.
- Priority three where CR's or local acquisition would work: the River Street fen, east of Summer Street with 35 acres.

C. Demographics and Housing

1. Introduction

This section focuses on Housing as a resource within Middleborough. It starts with the demographic information that describes the town residents and paints a useful profile for considering how the Town's housing needs are going to be met in the future. It then gauges the conditions and trends that are affecting the demand and supply for housing within the community.



Unlike some other communities, Middleborough has the potential to add a significant number of additional housing units to its stock, because of the large amounts of land still available for development. It is also a relatively affordable community, within a region with very high housing prices. The Town can set policies that help provide the diversity of housing opportunities into the future, in part by taking into account the issues discussed in this section.

2. Goals and Objectives for Housing

The following goals and objectives have been articulated for the Housing component of the Master Plan.

Goal

Identify policies and strategies to provide a balance of local housing opportunities for all residents of Middleborough.

Goal

Evaluate Middleborough's needs for affordable housing, senior housing, assisted living, in-law apartments and other housing options. Evaluate Town-initiated development or rehabilitation projects to ensure they provide housing that fulfills the Town's objectives.

3. Key Findings

The review of demographics and housing provides several insights that should help shape planning for the future of Middleborough:

- The estimates of future population growth and the expectations for the total number of new households in Middleborough and the rest of Plymouth County are significant in a number of ways. They reflect the impact of new transportation improvements in southeastern Massachusetts, the metropolitan area's improved economy and the relatively tighter housing market in other parts of the metropolitan area. This makes Middleborough an attractive location in the near term. The implication is that Middleborough should prepare for the change this represents to the community.
- The ten-year forecasts suggest that Middleborough's population will continue to increase, adding nearly 2,300 residents in the next ten years while averaging annual growth rates of 1.1%.
- Housing units are forecasted to continue to increase in Middleborough at a rate of about 80-100 units per year through 2009, so that there could be 15% more houses in Middleborough in 2009 than there were in 1999. Although there has been a very recent increase in this rate, it is not reasonable to presume that this higher rate will necessarily continue.
- The expansion in housing will be filled by a population of households for which current trends predict will be a mix of young families and retirees.
- Middleborough's average household size is 2.81 persons, which is above regional averages, indicating that a significant number of families are attracted to the way of life in Middleborough.
- While the proportion of elderly within the population has been consistent with the regional averages, this is shifting. 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.
- These expected changes in the total population and in the number of households will influence budgetary decisions, land use issues and local commercial expectations. These local changes will not be solely based on the aggregate increases expected, but are also due to the relevant characteristics of the town's future population. Additional data on these aspects of the community will be discussed in the next section on Economic Development.
- The Town has a very small proportion of multi-family rental housing units; the majority are single-family homes.
- Housing prices in Middleborough are relatively affordable relative to other parts of the

region. The relatively low prices tend to make Middleborough a somewhat attractive housing location than other areas. However, the increases in local prices are still increasing greater than incomes.

- The Town of Middleborough does not meet goals for low income housing supply, as currently defined by the state. As a result, the Town may be subject to “Comprehensive Permit” projects that exceed zoning standards or vary from local land use regulations, if such projects can supply additional housing meeting state goals. The Town may consider other methods to add to its approved low-income housing stock to promote diversity.
- There are many choices to promote a wider range of housing choice within the Town by amending land use policies and other actions.

4. Existing Conditions and Trends for the Future in Demographics and Housing

a. Demographics

Past Population Trends

The long view of Middleborough has been of a community slowly emerging from its rural roots as a low density, sparsely populated town. The Town did not experience the post-war growth spurt that affected so many other communities in the 40's and 50's. Instead, Middleborough experienced a flatter growth increase that by default allowed the town to retain much of its rural character. However, the coming decades suggest a new pattern of population growth.

<i>Key Facts: Population growth</i>	
Year	Number of Residents
1900	8,000 people
2000	20,000 people
2???	50,000 people (build-out projection)

Projected Population Growth Rates

Planners use growth rates from the recent past, tweaked by economic factors to project future growth rates. Consequently we start the discussion of projected rates with the results from the last few years.

Over the last decade, the town's population changed from 17,867 people in 1990 to 19,950 people in 1999. This was an 11.66% increase, or little more than 1.3% annually. 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 556,943.

Even with this seemingly small increase, population growth rates in the entire New England region are significantly lower than those seen in Southeastern Massachusetts. The Town of Middleborough has supported this trend by experiencing growth rates that exceed the Boston metropolitan area-wide growth rates by three times the average for that area north of Middleborough. Note that regardless of this local and regional rate of change, the population growth has not kept pace with New England's economic expansion. Employers are still finding it hard to fill jobs.

Forecasts for the next five to ten years are that Middleborough's population will continue to increase, adding nearly 2,300 residents in the next ten years while averaging growth rates of 1.1%. The balance of the region is expected to experience average growth rates

in the range of 0.3% to 0.9%. The resulting year 2009 forecast population will be 22,233. This represents an overall increase of people at 11.4% over the latest numbers from 1999 and a similar impact to the growth that occurred over the previous decade.

Consequently, the town's rate of growth is projected to exceed the average for other comparable regions around Middleborough, but it will not be among the highest growth centers in the southeast region. Two obvious examples are the adjacent towns of Rochester and Lakeville that will each see a growth rate twice as high as Middleborough.

Overall, the addition of new residents will influence residential growth patterns as well as the demand for a variety of commercial goods and services. While these population growth estimates project a number of new people, they may understate the full socio-economic impact of future residential growth. More on this will be discussed in the Economic Development chapter of this report.

Household Characteristics

The number of people projected for Middleborough does not directly equate to the number of new housing units until we look at the make-up of the families or social units that will occupy that housing.

Resident and household profiles for existing residents and expectations for new residents and households help to shape demand not only for housing but for commercial goods and services as well. It also exerts an influence on local development patterns.

Middleborough's households are larger than the rest of Plymouth County, the

metropolitan area, and the state, which has an impact on statistical information such as per capita incomes. This data, along with the other statistics summarized in this section, suggests consideration for government and social programs that support family units and their particular needs; e.g., schools, youth programs, after-school programs, family counseling, and housing programs geared to assist families in times of need or crisis.

Interestingly, this larger unit size is combined with a head of the household who is a younger age than the norm for the region. 51.2% of all households in Middleborough are headed by individuals that are less than 44 years old, while for Plymouth County the statistic is 45% and for the rest of region, 46.5%. To reinforce this condition, slightly less than 20% of Middleborough households have heads that are between the ages of 55 and

A quick review- Household Size:

- Middleborough's average household size is 2.81 persons, larger than the County at 2.76 persons and larger than the Boston region at 2.54 persons.
- In local distribution, the Downtown area has a relatively smaller household size, while South Middleborough has the largest number of members per household.
- Less than half (48.3%) of Middleborough's households are comprised of either one or two persons, as compared to 50.6% and 57.4% in the other regions outside the town.

74 years old, while Plymouth County and rest of region are higher at 23.7% and 23.98%, respectively.

This puts a twist on the stability of the neighborhoods. Younger home-owning householders, especially those with school-age children, *are less likely to move* than older householders and households without children. Stability within the existing housing stock influences projections in the need for local services and expectations regarding changes in demand for commercial goods and services.

Also in an atypical but supporting way, Middleborough contains a smaller percentage of one- and two-person households despite its larger concentration of household heads that are less than 25 years

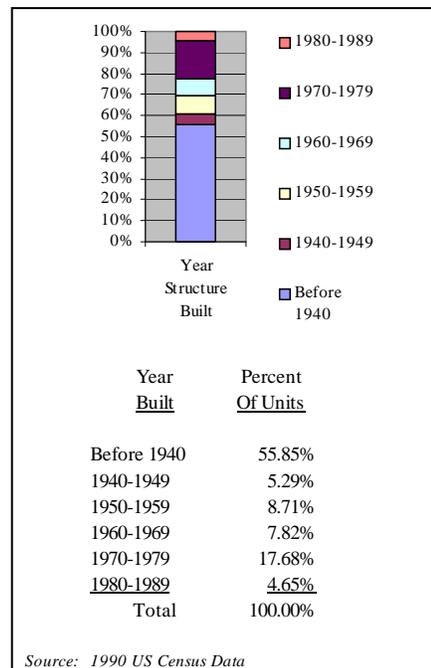
old. The lower concentration is due both to the larger number of younger households with children and the lower percentage of older households (those with household heads that are more than 65 years old).

A quick review – Additional Household Statistics

- 11.09% of households in Middleborough have household heads that are more than 65 years old. Comparatively, Plymouth County is at 11.69% and the rest of the region is at 13.08%.
- 20.78% of Middleborough’s population is between the ages of 5 and 17. As an average, Plymouth County and northern regions are 19.02% and 16.16%, respectively.
- Middleborough contains a slightly higher concentration of pre-school children at 7.82%, compared to 7.25% and 6.79% for Plymouth County and the rest of the northern region.
- Special Needs: 309 people have identified themselves as mobility limited, 1,088 people have some work disability, and 436 are prevented from working at all.

b. Housing: How People Live in Middleborough

In our last section, we discussed the population characteristics and its projected growth. This translates into households and the family units that require the housing. Note that household growth rates are typically faster than population growth rates in a growing area. However, a key point is that the majority of householders in Middleborough own the units they live in. They chose and purchased their house so they could live in this community. This is important in several ways since households, not total population, are the basic unit of measurement for evaluating housing and other markets. So what kind of house did they choose, and what can we glean from the future homeowners coming to town? Also, will family members continue to find available housing units at a price they can afford?



Half of the housing units in Middleborough were built between 1960 and 1988. This is a relatively young stock of housing. However, the older units could be subject to redevelopment as a result of their age. Two-thirds of the units house single families, and more than that are owner-occupied.

Despite the recent lack of new home production, Middleborough's population increases exceed the averages seen in the rest of Plymouth County. The development of new mobile/manufactured housing units in Middleborough accounts for the seeming discrepancy between single-family housing production and population trends. Middleborough is expected to substantially increase the number of mobile home units in town. The production of these units will have a direct impact on local demographic trends.

Key facts: Growth in the Number of Households

Middleborough experienced an increase of 881 households between 1990 and 1999, an average annual increase of 1.6%.

Projections are for 7,428 households in 2004 and 7,963 households in 2009; an annual average change of 1.4%.

The rest of Plymouth County grew by 1.3% per year, on average, from 1990 to 1999.

The number of households in the County will increase by approximately 1.1% per year for the next five to ten years.

The New England region is expected to add households at a rate of 0.5% to 0.6%

The U. S. as a whole is expected to increase at 1.1% to 1.2% through 2009, which is the same as projected for the local region.

Rental Housing

Rent housing represents a small percentage of local housing units, with much of the rental housing stock comprised of either subsidized, rent and income restricted, or small, (less than eight units) properties. Middleborough contains only one market rental housing development of more than 50 units. This is Talbot Woods. Talbot Woods is located west of the intersection of West Grove Street and Route 105. It features 121 studios, one- and two-bedroom units. The property contains eight three-story brick residential buildings with red mansard style roofs. The property also contains an outdoor swimming pool and fitness center and a number of unit amenities. As of November 1999 rental rates at Talbot Woods ranged from \$625 for studio units to \$995 for the larger two bedroom units. These rates are lower than in Boston, for example, but similar to those found in other outlying communities such as Attleboro. Middlebury Arms on East Grove Street is a 64-unit one-two- and three-bedroom development. It provides subsidized rental rates under the Federal Section 236 program, which are considered Affordable.

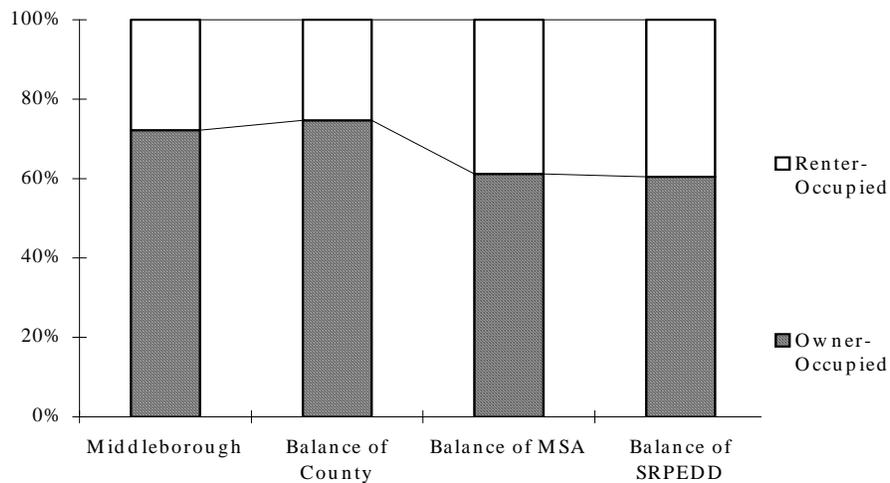
There is also a notable cluster of 2-family and 3-family rental units (as well as some similar condominiums) in the neighborhoods that surround the downtown. There are no available statistics on the number of condominium units that are rented, rather than occupied by their owners.

Rental Housing Trends

We do not believe that these rental rates will encourage the development of new rental housing and do not expect to see any major change in the number of market rate rental housing units in Middleborough.

Looking at a comparison of ownership and rental units, it can be seen that Middleborough has trended to home ownership. Therefore, analysis of the Middleborough housing market must include a closer examination of the market for single-family houses. This also sets the stage for the aspects of land use that are most critical – the development of single-family subdivisions within the remaining open lands of Middleborough.

Table C1: Distribution of Housing by Ownership



Housing Tenure	Market Area			
	Middleborough	Balance of County	Balance of MSA	Balance of SRPEDD
Owner-Occupied	5,014	114,948	1,221,255	120,713
Renter-Occupied	1,930	39,009	774,943	78,939
Total-Occupied	6,944	153,957	1,996,198	199,652

Source: AGS (1999)

Home Ownership

Homes Built

The number of homes constructed is both an indication of the growth and type of housing product desired within the community. It is also an indicator of the local economic health at least for the construction trades.

Table C2: Local Permit History

<u>Year</u>	<u>Type of Unit</u>		
	<u>Condominium</u>	<u>Single Family</u>	<u>Total</u>
1990	61	53	114
1991	18	70	88
1992	16	103	119
1993	12	78	90
1994	0	106	106
1995	0	97	97
1996	0	95	95
1997	0	62	62
1998	0	81	81
1999	<u>0</u>	<u>97</u>	<u>97</u>
Total	107	842	949
Average	11	84	95

As noted, the Town permitted and constructed approximately 95 new owner-occupied units annually during the last decade, for a total of 949 units between 1990 and 1999. The vast majority of these units were single-family units. Note that Middleborough has not issued a single condominium permit since 1993.

The development of the manufactured/ mobile housing units at Oak Point will add 650 households and approximately 975 residents. It is estimated that each manufactured/ mobile home will contain 1.5 persons on average because of the age restrictions associated with the development. It is assumed that most will also be owner-occupied but this has not been determined as the project (albeit not necessarily the residents) is relatively recent. In addition, the smaller Edgeway Estates mobile home development is permitted for 74 units.

Given the recent pricing trends seen in town and the town's build-out capability, we would expect new housing growth to continue at approximately 80 to 100 units per year. Shifts in this trend could occur, however, depending upon the evolution of the regional

economy, the transportation network, and many other factors. In general, if the quality of life in Middleborough is enhanced and its affordability is preserved, it may become an increasingly attractive place to live.

Homes Sold

The next investigation concerns the number of those newly constructed and pre-existing homes that were sold, indicating the number of new households being created. As can be seen in the graph below, the number of single-family home sales in each of the markets substantially increased between 1991 and 1998. In 1991, Massachusetts, including Middleborough, was still

experiencing the detrimental effects of the last recession. This impact can be seen in the number of sales in each of the areas reviewed. With the ending of the recession, home sales have increased. However, while the number of sales in the county and SRPEDD areas have increased steadily throughout the last decade, sales in Middleborough appear to have remained relatively constant from 1992 on.

Key facts: Housing

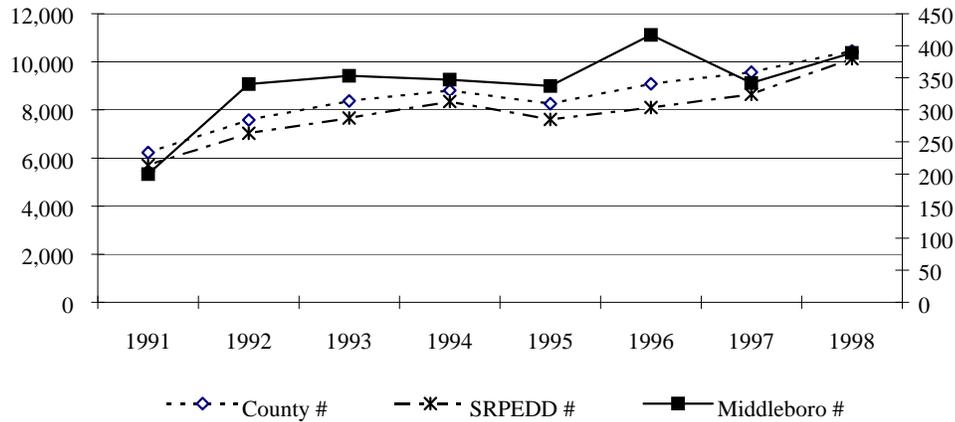
67% of the units are single-family homes.

Over 4% of the homes are protected as affordable.

More than 72% (5014 units) of the housing stock in Middleborough is owner-occupied. This compares to 74% for the rest of Plymouth County and 62% for the Boston region.

Table C3: Number of Single-family Homes Sold

The right Y-axis represents the county and SRPEDD. The left Y-axis represents Middleborough.



RESIDENTIAL HOUSING SALES

	CALENDAR YEAR							
	1991	1992	1993	1994	1995	1996	1997	1998
Middleboro #	200	340	353	347	337	417	342	389
County #	6,224	7,584	8,366	8,810	8,252	9,085	9,566	10,452
SRPEDD #	5,694	7,032	7,661	8,352	7,606	8,091	8,645	10,126

Housing Costs

The housing market in Middleborough has experienced a lower rate of cost increases than surrounding areas. In 1991 the median sales price of a single-family home in Middleborough was \$109,900. In 1992, the price had dropped to \$92,500. Plymouth County and the SRPEDD communities experienced similar declines in their housing market. The median price of a home in Plymouth County dropped from \$121,000 in 1991 to \$115,000 in 1992. In SRPEDD the median price of a home dropped from \$115,000 in 1991 to \$108,000 in 1992. By 1995 the median sales price in Middleborough and the SRPEDD area exceeded or equaled their 1991 levels. Plymouth County did not regain this pricing level until 1996. While home prices in Middleborough increased between 1992 and 1995 and the town was able to recapture the housing value lost during the last recession, housing prices in Middleborough have not kept pace with the rest of Plymouth County. Between 1995 and 1998, the median home price in Middleborough increased from \$113,000 to \$129,900, a

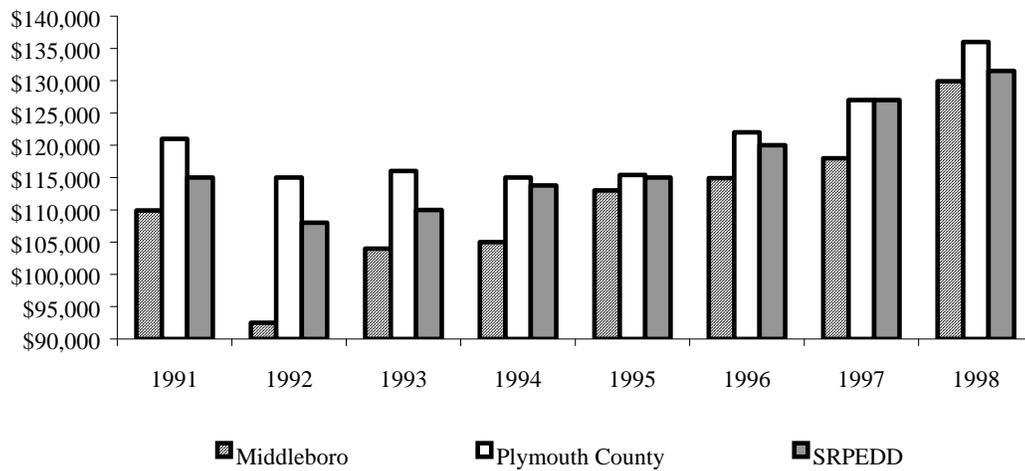
New housing also creates a fiscal impact on Middleborough. Refer to the section of fiscal impact analysis to evaluate the differing impacts on new development on the town.

15% increase. In Plymouth County median sale prices jumped from \$115,400 in 1995 to \$136,000 in 1998, an increase of nearly 18%. Prices in the SRPEDD area rose from \$113,750 in 1995 to \$131,509, a 15.6% increase.

Mobile homes are an important portion of the housing supply. Prices are reportedly in the range of \$160,000 to \$200,000.

Differences in incomes partially contribute to regional differences in housing costs. The next graph illustrates gross median rent levels and median home values (from the 1990 census) for each geographic area reviewed for this planning effort. Based on recent trends and other data reviewed, it appears that the current housing cost differential is greater than the difference indicated here. While the relatively modest price increases within Middleborough would seem to make Middleborough affordable, these increases are still outpacing rises in income.

Table C4: Home Sale Price Trends



RESIDENTIAL HOUSING MEDIAN SALES PRICE (in US Dollars (\$))

CALENDAR YEAR

	1991	1992	1993	1994	1995	1996	1997	1998
Middleboro	\$109,900	\$92,500	\$104,000	\$105,000	\$113,000	\$114,900	\$118,000	\$129,900
Plymouth County	\$121,000	\$115,000	\$116,000	\$115,000	\$115,400	\$122,000	\$127,000	\$136,000
SRPEDD	\$115,000	\$108,000	\$110,000	\$113,750	\$115,000	\$120,000	\$127,000	\$131,509

The Combined Trends

Moderate housing prices in Middleborough have an affect that limits the production of new single-family units in town. Consequently, it is not expected that Middleborough

will undergo a large shift in the rate of development and experience either a large number of new single-family housing units or experience a large increase in three- to four-person households as a result of new home production.

The following chart summarizes the information from above, and adds information on the last two years. What is striking is that the numbers do not correlate extremely well between permits, sales, and sales price. A key observation, however, is that the sales prices have taken a significant leap in the last two years. Although this is still modest in relative position to the rest of the region, it shows the value that is being placed on the community.

Table C5: Comparison of Building Permits, Sales and Price of Homes

Year	Permits	Sales	Sales Price
1988		361	133,900
1989		305	130,000
1990	53	226	121,000
1991	70	200	110,000
1992	103	340	93,900
1993	78	353	104,000
1994	106	347	106,000
1995	97	337	115,000
1996	95	417	115,000
1997	62	342	118,000
1998	81	389	132,000
1999	188	423	154,000
2000		90 (ytd)	156,250

Geographic Distribution

The 1990 U. S. Census provides us with information on the distribution of population and housing types. The following charts show the Census tracts followed with the data associated with those tracts. The housing is classified by value of the total property as it relates to the basic household characteristics.

Table C6: Households and Property Values

Tract	Block	Households (Number)	Family Size (persons/ unit)	Income Range				Property Value Range			
				5- 25K	25- 50K	50- 100K	100- 150K	up to 100K	100- 150K	150- 200K	250- 500K
5421	4	422	3.3	51	161	172	38	20	143	116	58
	48	754	3.3	109	316	329	0	42	314	211	29
	111	628	2.8	201	245	165	17	22	157	79	33
	100	406	3.3	43	163	182	18	20	102	78	100
	97	104	1.6	88	16	0	0	0	0	9	0
5422	23	598	3	148	223	199	28	49	130	136	79
	56	429	3.1	126	172	112	19	48	210	22	17
	96	225	3.2	35	90	94	6	11	104	43	8
5423	62	465	2.8	146	201	98	20	30	83	59	58
	58	514	2.7	210	208	96	0	8	79	8	0
	61	213	3.1	65	113	35	0	7	85	20	0
	77	426	2.7	104	230	92	0	36	120	49	12
	91	581	2.8	277	172	123	0	9	81	47	10
	60	291	2.5	128	121	42	0	23	28	25	0

Information in this table is from the U. S. Census, 1990 database. Refer to the map of census tracts on the following page for locations of the tract and blocks. Also note that current total assessed value of residential properties in Middleborough as of April, 2000 was \$793,358,000 according to the Department of Revenue.

Town of Middleborough Census Tracts and Block Group

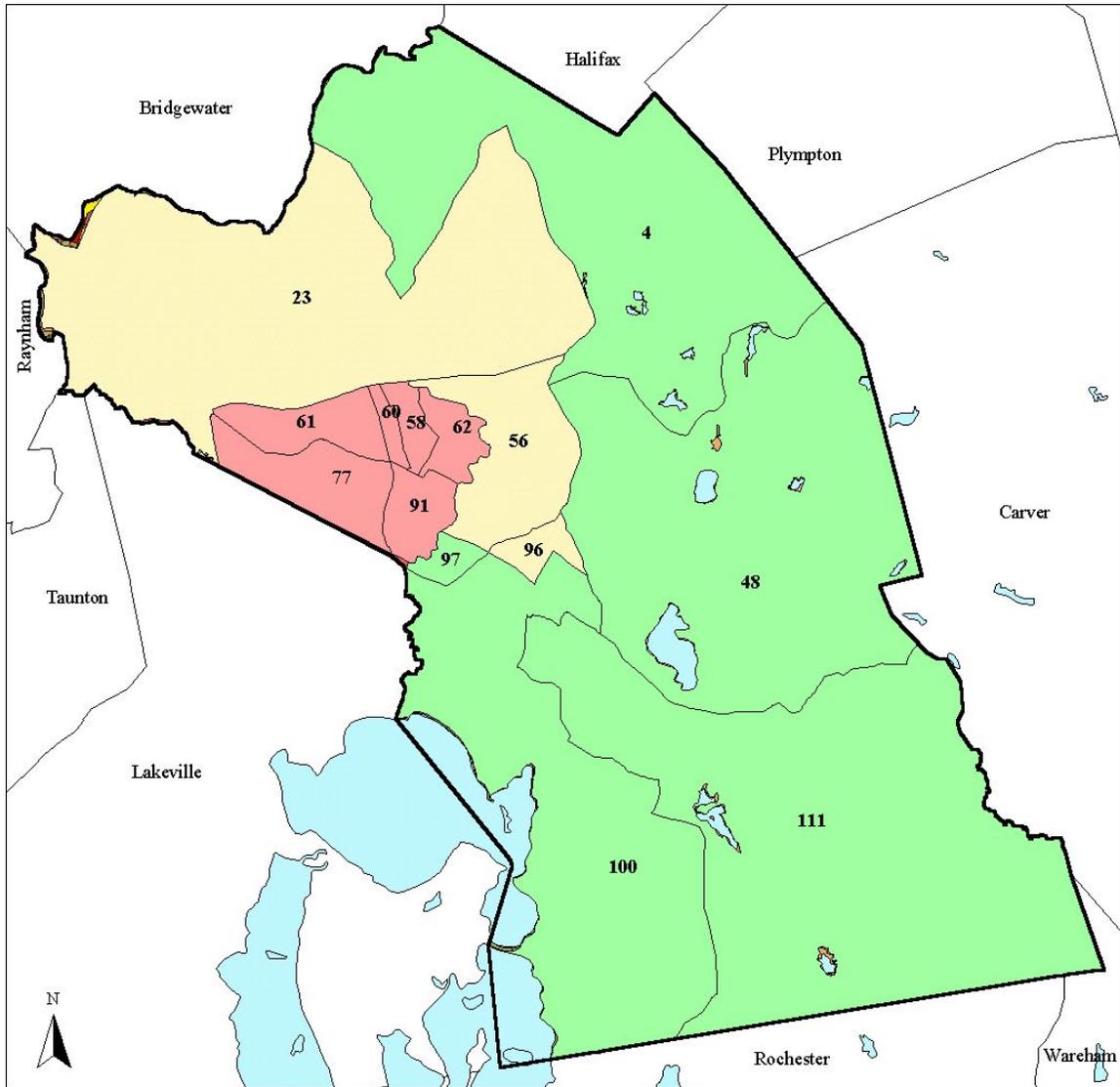
Middleborough Census Tracts and Block Groups

48* Census Tract 542100

56* Census Tract 542200

77* Census Tract 542300

* = Block Group number



Source: Massachusetts Executive Office of Environmental Affairs, MassGIS: data layer; Blockgroups

Figure C2: Census Tracts

Housing for Senior Citizens

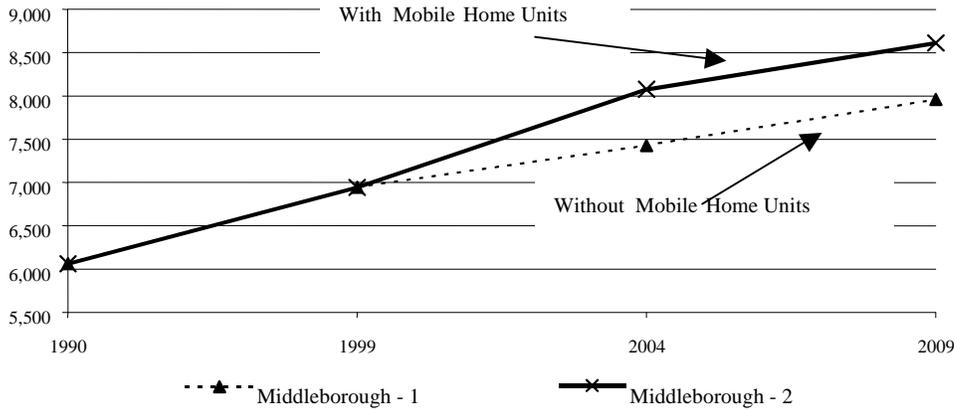
At the time of the last census (1990), the percentage of senior citizens within Middleborough was very similar to that of the surrounding region. The latest breakdown of seniors living in a group setting was created in the 1990 U.S. Census; it showed that 237 individuals were in senior housing in Middleborough. Among the facilities housing the elderly are the following:

- Alpha Village Long Term Care Facility
- Greenery of Middleboro
- Greenlawn Nursing Home
- Hanna B.G. Shaw Home For Aged
- Meadow View Nursing Home
- Oak Hill Nursing & Rehab Center
- Fair Havens Rest Home
- Middleboro Rest Home
- The Ann Lewis Rest Home, Inc.

There are no assisted living opportunities within Middleborough today. This unmet need is not addressed specifically within the Town's zoning regulation. However, some development interest has been expressed for such a facility, which would benefit a segment of Middleborough's population.

The remainder of Middleborough's senior citizens is housed in single-family homes, rental units, or within the Oak Point senior mobile home park development. The creation of the Oak Point mobile home development, which is targeted to senior citizens, will dramatically shift that distribution. This shift should be evident in the new census figures for 2000, and can be expected to continue as that development continues towards a "build-out" condition. As the discussion noted above, the Oak Point development projects a build-out population of 975 individuals in 650 households. By way of comparison, the total number of senior households in the community (65 years or older) was 787 in 1999. It is possible to estimate the proportional effect that this growth in senior households will have, as the following chart displays. It is clear that a major shift in the overall proportion in senior households will occur, and that the community will have a disproportionately high number of senior citizens relative to its past and relative to other communities. This will result in increases in demand for related services.

Table C7: *The Impact of Mobile Homes on the Number of Middleborough Households*



Market Area	Number of Households				Average Annual Change		
	1990	1999	2004	2009	1990-1999	1999-2004	2004-2009
Middleborough - 1	6,063	6,944	7,428	7,963	1.6%	1.4%	1.4%
Middleborough - 2	6,063	6,944	8,078	8,613	1.6%	3.3%	1.3%
Balance of County	137,874	153,957	162,664	172,569	1.3%	1.1%	1.2%
Balance of MSA	1,875,890	1,996,198	2,058,424	2,134,577	0.7%	0.6%	0.7%
Balance of SRPEDD	199,652	212,260	218,727	226,661	0.7%	0.6%	0.7%
Metropolitan Area	2,025,890	2,164,043	2,236,594	2,323,722	0.8%	0.7%	0.8%

Source: Census of Housing, AGS (1999), and Local Permit Data

Condominium Conversions and Home Ownership

The Middleborough zoning code includes a provision that restricts the conversion of existing buildings into condominiums to circumstances in which the owner will continue to occupy one of the units. This has the advantage of reinforcing the commitment to maintenance and the quality of the resulting conversion. However, this provision may also restrict conversions that would be beneficial to both the Town and the owners, if equivalent protections were applied.

Affordability Trends and Options

Clearly, an 18% increase in housing prices over the last two years is not in keeping with either incomes or inflation, and ultimately affects the affordability of housing in the Town of Middleborough. The affordability of units is an issue for the Town to address with the knowledge that influences outside the community are demanding a response.

The key regional demographic influences to consider are:

- There is and will be a regional labor shortage; which,
- will impact/slow business growth; and,
- drive up wages faster than the national average; but,
- while wages will continue to increase;
- the number of households in the region will not grow fast enough to accommodate the demand; and so,
- housing costs will increase in the competitive seller's market.

The Commonwealth of Massachusetts passed an Affordable Housing (Comprehensive Permit) Law in 1987 to address what the Commonwealth considered to be a pressing need for affordable housing throughout the state. The state determined that all local communities should seek to ensure that a minimum of 10% of the local housing stock be considered affordable as defined by the Commonwealth. The Comprehensive Permit essentially enables developers to by-pass all except one local review and approval process and to directly petition the state to grant approvals for housing developments, provided that these developments are partially funded by an approved affordable housing program.. The state will review requests for comprehensive permits in any community in which the state considers less than 10% of the local housing stock to be affordable.

According to the Massachusetts Department of Housing and Community Development, Middleborough contains 6,365 housing units of which 280 units are considered to be affordable housing units. That is 4.40% of the local housing stock. Therefore, developers may use the Comprehensive Permit in Middleborough. Most affordable housing programs only require 25% of the project to be affordable.

As a result of the Comprehensive Permit law, Middleborough is now seeing developments come before their approval process that are inconsistent with Town goals as outlined in the Master Plan. Proposed and potentially new developments will have land-use impacts, adverse fiscal impacts, and may substantially alter the Town's goals related to managed growth.

Definitions of Affordability

There are two separate concepts of housing affordability that are introduced into this master plan. First, there is the formal definition of "Affordability" that is used by the Commonwealth of Massachusetts for its housing policies and programs. In this Finding and Alternatives document, this definition is consistently capitalized, as in "Affordability with a big A". The second concept is a simpler

*The Definition of Affordable Housing,, State
Chapter 40b Legislation*

. . . . Any housing units subsidized by federal and/or state government and/r local housing authority under any program to assist the construction or substantial rehabilitation of low or moderate income housing as defined in the applicable federal or state statute or regulation . . . No unit of housing under the federal leased housing program or state rental assistance program shall be considered low and/or moderate housing unless such unit is constructed or substantially rehabilitated under a state or federal housing subsidy program.

definition that considers “affordability” to include low-priced housing relative to median incomes and the costs of housing in other communities. This definition is consistently left in lower case letters, as in “affordability with a small a”. As we shall see, Middleborough can be considered to be an affordable community in the simpler use of the term, even while it is not considered Affordable in terms of state policies and programs. This difference gives rise to important planning and policy issues.

Currently, the basis for determining Affordability emanates from the state’s Comprehensive Housing law (Chapter 40B legislation) that defines what is Affordable within a community. Affordability is defined as housing that is financed with public subsidies to lower costs (see note above). It also specifies that, when less than 10% of the local housing stock can be listed as Affordable, new housing projects can be proposed that do not conform to the local zoning if they provide Affordable units, which are then further defined as units which are permanently priced at a level that can be rented or purchased by those with incomes at or below 80% of the median area income. The concept is that the density of housing, when increased significantly enough beyond local zoning allowances upon which the land costs are based, will allow a developer to build units that can be sold without the full land costs attached, and so become much more Affordable.

The Commonwealth completed an inventory of each community’s Affordable housing units. As noted above, the state count includes housing units as “Affordable”, not by actual housing costs or the income level of housing occupants, but by the financing used to develop the units. The most significant section of the definition from the Town’s perspective is the fact that government programs must have been used for units to count as Affordable housing. Middleborough may currently contain, for example, rental units or homes that are in fact affordable and occupied by many low- and moderate-income households with incomes below the 80% threshold. These units were not developed with government programs, and, therefore, are not counted by the state.

The state currently lists approximately 290 units within Middleborough as Affordable, which puts the Town at about 4.4%-Affordable under the state law. Without permits being issued for potentially lower cost detached or condominium units than the market is providing, there will be no contribution to Affordability. Similarly, the low rental rates that qualify as Affordable do not encourage private sector development. So, the local economy will not be encouraged to develop new rental or otherwise Affordable housing in Middleborough without the incentives provided by the 40B legislation. This puts the Town in a bind when it cannot

Types of Housing that can be used under LIP:

- 1) *Units created on the upper floors of downtown retail space.*
- 2) *Units built on town land.*
- 3) *Housing Authority sponsored units.*
- 4) *Assisted Living Facilities*
- 5) *Existing housing renovated and repaired with CDBG assistance.*

influence the private economic demands that drive individual building decisions. It may have to accept private sector 40b Comprehensive permit projects that exceed zoning requirements and good land planning practices promoted by Middleborough.

The 290-unit count related to Affordable housing units has been created by the state and is open to amendment provided Middleborough, or a designated entity, can demonstrate that more Affordable housing units exist in town through other means that accomplish the same goals, such as through programs that provide guaranteed units set aside for sale or rental to those with low incomes. Additionally, it is important to note that the state recognizes that the 10% rule as currently defined has made it difficult for local cities and towns to meet the requirements. The state developed the Local Initiative Program to assist towns trying to meet their affordable housing goal.

The Local Initiative Program (“LIP”) was established to provide towns with more flexibility in meeting affordable housing requirements. Housing units that serve households that earn less than 80% of the area median household income and carry use restrictions can also be designated as affordable housing units. These units can be new construction, building conversions, adaptive re-use, substantially renovated, or other units created as a result of local provisions. The LIP program provides towns with greater flexibility in meeting the 10% affordable housing goal. The LIP program also allows a Town to count a greater number of units toward the goal. Under the Comprehensive Permit Law, a developer could create a 200-unit rental project with 50 affordable housing units. Only the 50 units count toward the Town’s housing goal. Under the LIP guidelines, all 200 units will count toward the housing goal.

The state has a somewhat different interpretation of Affordability that should be noted, as well. Executive Order 418 is intended to encourage communities to expand their supply of housing for low- and moderate-income people. This order created new categorical definitions, which might be called “418-Affordable”. This definition includes new units that are priced within 150% of the median income for the area. The Town is credited as providing such units when they are built and marketed. The availability of such units is then linked, as a general policy, to the support of local programs and local funding by the state. It is not yet clear what specific implications this may have for the Town, but it should be noted that many units being developed within the Town qualify as “418-Affordable”, and have been credited as such by the state.

5. Housing Alternatives

The following section describes various choices that the Town could take to meet the goals and objectives for housing:

Choice: Use Land Use Regulations to Promote Housing Diversity

This is a general approach to land use regulations that would expand the range of housing types that would be promoted by zoning and subdivision regulations. The emphasis of this approach would be to ensure that there is a mix of housing densities and types and reasonable zoning districts to accommodate them.

Advantages: This approach is consistent with the list of goals and objectives that the Town has established through the planning process.

Disadvantages: This will require changing several of the zoning descriptions, subdivision approach and zone locations, which may not be perceived as a benefit to some existing property owners.

Choice: Expand the Availability of Multi-family Rental and Ownership Units

The Town zoning and land planning practices have been oriented towards single-family housing, rather than encouraging the development of multi-family housing options. This is particularly true of rental opportunities. The Town could examine locations that would be conducive to this type of housing, such as areas within the current GU zoning district and within the Downtown. Land planning should take into account the need to provide high quality environments that have adequate buffers, or compatible relationships with surrounding uses.

Advantages: This approach would gradually expand the range of housing types and affordability. It could be accomplished through regulations alone, which can be tailored to create appropriate quality standards and relationships with surrounding areas.

Disadvantages: The Town has very little rental multi-family housing, and the expansion of this type of use would be a shift in past patterns. The fiscal implications of housing of this type also need to be taken into account so that the fiscal costs and benefits are acceptable.

Choice: Provide for Live/Work Housing Options in Commercial Areas

As the section on Land Use describes, Middleborough could reinforce options for residents to work in or at their homes. This reduces costs for residents, and provides

options for lifestyles. In addition to expanding provisions for single-family home/business combinations, special standards could be created to encourage live/work arrangements in multi-family housing or rental units, such as artist-type studio space in the downtown.

Advantages: This approach is very compatible with the goals and objectives for Middleborough, because it reflects the pattern of use and lifestyles within the Town.

Disadvantages: Live/work housing options can raise issues of adjacency and compatibility with neighboring homes or businesses.

Choice: Expand Opportunities for Accessory Apartments

Zoning provisions could be expanded to encourage the development of accessory apartments. Many homes could reasonably contain such spaces. These units can be regulated in terms of size, parking and other factors so that they represent a small change in the appearance of a neighborhood. This form of housing offers low-cost housing options that may otherwise be unavailable.

Advantages: This approach would be appropriate in many of the lower density areas of Town, where there are large lots. It would also be compatible with the neighborhoods or villages that have large houses, which could be readily converted to these uses.

Disadvantages: The addition of these units can shift the character and perceived quality of neighborhood settings, and this may be undesirable.

Choice: Promote Assisted Living Opportunities

Assisted living for the elderly is an unmet need in Town. Support for such a facility could take several forms. At a minimum, the Town could provide specific land use regulations to support appropriate development locations, scale and character. The Town could consider the sale of Town land for siting such a facility, for example, if it wished to proactively promote such a use.

Advantages: Assisted living is an unmet part of the housing needs for the elderly, and actions to support it would be beneficial.

Disadvantages: The dedication of Town resources to this end would displace other priorities.

Choice: Promote Apartments and Condominiums with the Downtown

The downtown has particular opportunities to provide housing. There is an existing stock of buildings and sites that could be adapted to housing, and the area could help provide new housing choices.

Advantages: The demand for commercial space is unlikely to be adequate to fill either existing buildings or land in the future, and the expansion of housing is an appropriate strategy to help retain a vital central district for the Town. This is an area, which has services within walking distance for many, and is not far from public transportation.

Disadvantages: The character of the downtown could shift, and residents tend to be sensitive to issues of compatibility with commercial uses, which should remain an emphasized use within the downtown. Housing will also bring demand for parking, which can compete with the retail and business needs if not properly controlled.

Choice: Create a Local Fund to Support Low Cost Housing

The Town could create a local fund that could be used to subsidize low housing costs for qualifying residents. This can be accomplished in many ways, such as using funds to purchase and administer units, or underwrite low cost financing for home ownership programs. The sources for such funding could be through the Community Preservation Act, which allows communities to direct additional tax resources for such purposes, matched in part by State funds. It could also occur through local development contributions (see below), or through other grant programs.

Advantages: Through this method, the Town can directly sponsor lower cost housing opportunities within the Town. It could use the Housing Authority mechanism to direct this effort.

Disadvantages: These approaches require significant management time and resources to implement. The Town should also gauge the relative costs and benefits of such an approach relative to the amount of funds that might reasonably be created and the amount of benefits that would be created.

Choice: Strengthen the Role of the Middleborough Housing Authority

The Middleborough Housing Authority could be repositioned to take a more active role in the provision of affordable housing. The Housing Authority would take a lead role in the establishment of new strategies for housing, and could take a strong role in pursuing grants, administering funds, and sponsoring development that would meet needs within the community.

Advantages: The Housing Authority already exists as an entity within the Town, and a strengthened emphasis and role would be consistent with its existing mission.

Disadvantages: The scale of the programs and the human resource needs must be balanced against the capacity of the Authority to accomplish a revised mission. The use on non-profit housing development entities may provide more flexibility in creating new affordable units relative to the Housing Authority, as well, and might be considered.

Choice: Expand Eligibility for Condominium Conversions

The Town currently restricts conversions of existing residential structures to condominiums by requiring that this be accomplished only if the owner is also a resident of the building. The zoning code could be changed to allow more conversions, with substitute requirements that establish standards for design and maintenance.

Advantages: The amount of multi-family units could be expanded in appropriate areas of the Town.

Disadvantages: The Town may find it difficult to ensure the quality and stewardship of the converted units, once the conversion has been accomplished.

Choice: Require Affordable Units within Large New Residential Developments

The Town could require the provision of a certain percentage of housing units to low- and moderate-income families as part of developments above a certain threshold size. This could be a mandated requirement. Such a provision could also be provided as part of a “bonus” incentive to qualifying projects, which would be able to increase total density in exchange for the provision of Affordable housing. The quality and location of the units would need to be representative of the development as a whole. The Town might consider a variation of this program, which would allow qualifying projects to substitute a contribution to a housing fund (see above), if such a fund was found to be equivalently helpful in meeting Town needs.

Advantages: This approach directly provides units that can be used to meet both local and state housing goals. Such programs are generally more effective than other, non-mandated housing support initiatives. For example, a recent study completed by the Massachusetts Housing Partnership Fund found that local incentives within the Town and city regulations have not been enough to generate any appreciable amount of affordable housing units. It was estimated that only 200 units or 1% of the statewide housing production was permitted under these regulations. It may also serve as a disincentive for development of large projects generally in the Town, which may be consistent with open space preservation, fiscal objectives, and maintenance of the rural character of the community.

Disadvantages: The Town may consider that it already provides adequate affordable housing through the pricing of its existing and new housing stock. The relatively low

prices for new housing may require density bonus provisions that the Town finds unacceptable relative to its other land use and open space goals and objectives.

Choice: Establish an Affordable Housing Contribution for Qualifying Residential Development

This would be a "linkage" payment requirement that would require residential developments above a certain scale to provide funds into an affordable housing initiative. This may also be a substitute provision for a direct provision of low cost units, as noted above.

Advantages: This may provide the amount of funds appropriate to adequately fund and effective housing initiative. This program could shift the economics of development and discourage some larger developments, which may be in keeping with some Town goals and objectives.

Disadvantages: This approach would require the institutional infrastructure to apply the funds to proactive Town efforts. It is also dependent upon the emergence of adequately large proposals to trigger payments.

Choice: Use Town-owned Land for Town-sponsored Development

Land owned or acquired by the Town could be used as housing sites for low, moderate, or senior housing options. The Town could offer the sale or use of the land with restrictions that would meet this purpose.

Advantages: The Town could directly promote the supply of housing types that fulfill its goals for housing diversity.

Disadvantages: The Town would not be able to use the land for other uses that might be in its short-term or long-term interests.

Choice: Evaluate Impacts of Mobile Home Development, and Provide Enhanced Regulation if Required

The net impacts of the mobile home development within the Town could be measured and considered in light of the services and costs absorbed by the Town relative to the tax benefits. Such an analysis could be required as part of any significant proposal for new or expanded developments.

Advantages: An overall cost benefit study would allow the Town to set comprehensive policies in regards to Town requirements and land use policies, as well as directing the investment that the Town may need to make in infrastructure.

Disadvantages: There are no evident disadvantages to the Town following from this choice.

Choice: Promote Statewide Revision in the Chapter 40b Provisions to Better Acknowledge Local Conditions of Affordability

The statewide policies for affordable housing have been established to meet important goals of housing diversity and opportunity. However the Chapter 40b provisions narrowly define “Affordability” in a way that does not acknowledge the actual circumstances of Middleborough, which in fact provides a large amount of relatively affordable housing within the region. As a result, the Town is subject to limited control over prospective “Comprehensive Permit” applications that may not meet other important Town planning principles. Although Massachusetts has recently initiated programs that give more flexibility to the Towns, state policies, laws and regulations are nevertheless poorly suited to Middleborough’s circumstances. The Town could initiate and participate in collaborative efforts with other similar communities to advocate changes in the regulations.

Advantages: The Town could influence changes that would be significantly better for the Town.

Disadvantages: The Town has a limited ability to change statewide policy, and the human resource and financial costs to the Town of active pursuit may not be the best use of those resources.

Choice: Continue Coordinated Efforts with the CDBG Program to Enhance Housing Opportunities

This choice would continue efforts to join Community Development Block Grant efforts with housing priorities. For example, the Town received a \$446,000 in June of 2000. This grant will support the creation of 7 affordable rental units (2 two-bedroom; 5 one-bedroom) in Middleborough's central business district by rehabilitating the second and third floors of a vacant commercial building into apartments.

Advantages: The Town can leverage its participation in CDBG programs to address housing issues.

Disadvantages: Use of CDBG funds for such initiatives would displace other project priorities.

D. Economic Development

1. Introduction

This section focuses on the issues that drive local business prosperity and growth, issues that impact where residents work, and suggests how the Town may stabilize its tax base and how the residents' lives may be enriched. The concepts to reveal involve the growth of both residential and non-residential development, the influence of this development on how people live and work, attainable incomes, changes in Town's tax coffers as a result of alterations in land use, and the potential negative and positive impacts of government policies on these changes.



2. Goals and Objectives for the Economy

The following are those Goals and Objectives developed by the Steering Committee that particularly apply to the economic future of the community.

Goal:

Evaluate areas of town that would be most suitable for commercial development and aggressively pursue and support potential businesses for those locations.

Goal:

Prepare strategic development plans including infrastructure needs analysis, design guidelines and optimum build-out plans.

Goal:

Review Middleborough's General Use District, Industrial District and Business District zoning to determine if the districts allow the desired development such as village business, manufacturing and multi-use retail districts.

Goal:

Update zoning regulations with design guidelines, design review and comprehensive planning provisions for new business development. Change zoning to reduce conflicts between existing residential and potential commercial uses.

Goal:

Position Middleborough as a Town that encourages businesses with a good mix of job types in the locations that the Town deems appropriate.

Goal:

Promote Middleborough as a desirable location for the new high tech, office, health care and services, as well as manufacturing and warehouse uses, in appropriately designated locations.

Goal:

Use tax breaks innovatively to accomplish the goal of attracting desired businesses and jobs.

Goal:

Develop a consistent approach and positive image within the government agencies of the Town towards those businesses that meet the Town plans and goals.

Goal:

Maintain the Town's rural character by providing the opportunity to combine natural resources with economic development such as recreation, eco-tourism, and agribusiness.

Goal:

Promote Middleborough's equestrian community, cranberry production, recreational facilities, 4-H, Soule Homestead, Pratt Farm, and other productive rural settings, as an agricultural and lifestyle niche. Support and promote open space areas that remain in private ownership when they meet this goal.

Goal:

Evaluate Middleborough's opportunities as a destination and prepare a plan to develop tourism as a segment of the local economy.

Goal:

In the development of this plan, showcase the natural resources, historic homes and sites and museums.

Goal:

Prepare strategies to divert regional pass-by traffic. Specifically, consider the development of a regional retail center to divert people into Middleborough.

3. Key Findings

- Average household income is near the average for the overall Boston region. It is above the average, however, for the surrounding Southeastern Massachusetts Region.
- The townspeople also exhibit a fairly narrow concentration of incomes, with a predominance of "middle income" families.
- Household sizes, however, are larger than in the areas surrounding Middleborough, so the average per capita income is relatively reduced, with some effects on lowered buying power relative to housing, goods and services.
- The town is a net exporter of jobs, but the local employment base is very important, as a contribution to the businesses and tax base of the community, and as a source of income for the residents who work in Middleborough. These jobs include a high proportion of blue-collar jobs. Historically, Middleborough's unemployment rates have been above the regional average, so expansion of long-term jobs is a reasonable goal.
- Among the markets for new development, office space is not expected to be a major component, but can be encouraged through aggressive marketing; good locations are available for this type of development. Retail space can be expected to expand along highway locations, but Middleborough is not viewed as a probable location as a major regional retailing center. Industrial uses can be anticipated, and the Town has business parks to accommodate this kind of use.
- The Town should be supportive of new development and retain existing businesses, with an emphasis on enterprises that support the local community with jobs.
- The Town will need to be pro-active in its support of retail uses in the downtown and village centers to allow them to remain competitive.
- The use of Tax Increment Financing appears to remain a reasonable incentive to draw

new businesses to Middleborough. However, care must be taken to ensure that the short-term and long-term costs and benefits to the Town are carefully weighed, so that this tool is used to its best advantage.

- Because of its location in a growing region, Middleborough's economy is likely to benefit from the changes within the region.
- There is more than enough land within Middleborough to absorb foreseeable commercial development.
- Measures that protect and enhance residential values are extremely important, as the residential tax base is such a large proportion of this resource.
- A fiscal analysis of the Town's budget and tax revenues reveals that new housing tends to add more costs than revenues to the Town, while commercial development substantially adds revenues well above the incremental costs to the Town.
- The Town faces growing deficits between expenditures and revenues, and will have limited options to borrow funds to fill the gap. As a result, actions to enhance Town revenues or cut costs are extremely important. Land use, infrastructure and public facility planning must consistently analyze the impacts on the Town's finances.

4. Existing Economic Conditions and Trends

a. Local Incomes

Incomes of Families and Residents

Middleborough is predominantly made up of middle-income families and residents. But there are two ways to view income. One is *per capita* income, which essentially distributes the household income over the number of people in the house thereby realizing that the cost of raising a family affects the ability to spend on non-essential items. The other is *household* income, which balances comparisons between areas of varying family size. With Middleborough's large household size (see

A quick look: Median Household Income; 1999

- Middleborough \$54,384.
- Plymouth County \$57,035
- SRPEDD area \$44,917
- Boston MSA \$56,543

Demographics in the Housing section), this effects the town's relative position relative to per capita income.

The town has the largest percentage of households that earn between \$35,000 and \$100,000 annually (the statistical middle-income) of the areas surrounding it. This places the town's households midway between the surrounding geographic areas on the northeast and southwest of the community.

Median per capita income levels for Middleborough also place it between the Northeastern areas and the rest of the Southeastern Massachusetts area. Median income levels in Middleborough have lagged behind levels in Plymouth County and the entire Boston MSA; however, local income levels exceed those seen in all communities in the SRPEDD planning district. Again, the lower level of per capita income in Middleborough is indicative of an area, which contains larger households.

Middleborough contains the smallest presence of very low-income residents (households that earn less than \$25,000 per year) and the smallest presence of upper-income residents (those who earn more than \$150,000 annually) than any of the areas reviewed. This impacts on the buying power and reinforces housing choices based on the locally available product. The concept implied here is 'what you see is what you get.'

While the value of properties is distributed throughout the Town (discussed in the Housing and Land Use sections of this report), the distribution of income is not. In the census tract that includes the Downtown area, statistics show lower per capita income with property values similar to other areas, which is indicative of a greater number of renters.

A quick look: Median Per Capita Income; 1999

- Middleborough \$20,981
- Plymouth County \$24,281
- SRPEDD \$20,205
- Boston MSA \$26,171

A quick look: Bachelor's or Graduate School degrees

- About 16% of Middleborough's residents.
- More than 25% of residents in the balance of Plymouth County.
- Nearly 32% of the Boston MSA region.
- In other SRPEDD communities, 19.4%.

A quick look: Per capita income by 2004

- Middleborough 22.4%, to \$25,685
- Plymouth County 22.5% to \$29,750
- SRPEDD 21.8% to \$24,615

Other Demographic Indicators

Studies indicate that households with higher educational attainment tend to be more mobile than households with a lower level of education. In Middleborough, the household profile represents the opposite and suggests that Middleborough's population is likely to be more stable than the surrounding market area. This would affect housing markets in particular, but also other business sectors, especially in terms of buying power

Local Income Trends

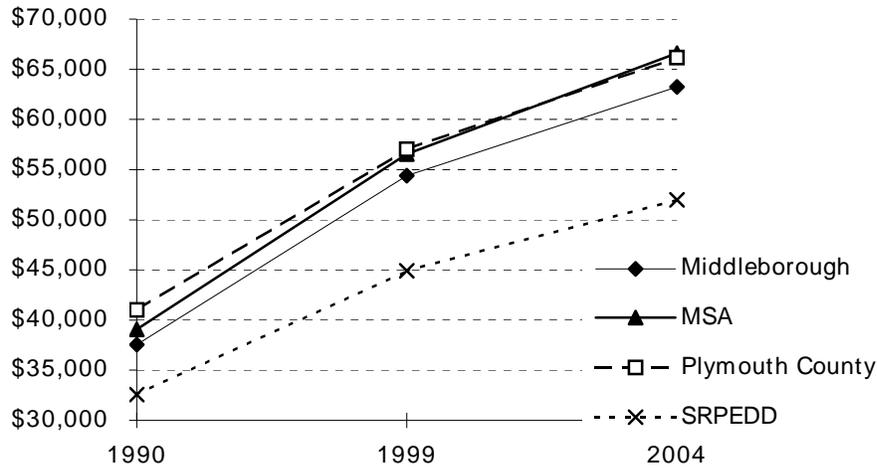
Income levels are rising in concert with the economy. By 2004, per capita income in the town is predicted to increase by 22.4% while household income growth will increase 16.3% - still within the range of the different regions surrounding Middleborough.

The following summary and graph suggest the growth of personal incomes for the households in the study areas. The implication from this information is that Plymouth County in total and Middleborough specifically, appear more likely to attract somewhat more affluent households than the balance of the SRPEDD region.

A quick look: Household income growth by 2004

- Middleborough's median household income level will grow 16.3%.
- Plymouth County 16.03%
- Boston MSA 17.7%
- SRPEDD area 15.76%.

Table D1: Median Household Income Statistics and Trends



Market Area Size	Median Household Income		
	1990	1999	2004
Middleborough	\$37,553	\$54,384	\$63,254
Plymouth County	\$41,007	\$57,035	\$66,177
MSA	\$39,087	\$56,543	\$66,612
SRPEDD	\$32,585	\$44,917	\$51,997

Source: AGS (1999)

Implications of Income Growth

Changes in income patterns in Middleborough will result from changes in the household profile of new residents. There are several pieces of the analysis of the town that impact or are impacted by these changes. The existing housing stock and type of new units developed will significantly influence future income patterns by attracting buyers to certain products. Local business growth will be impacted by the sector's ability to provide wages in line with the growth of resident's needs. Related are the land use implications that suggest how development will occur in line with these expectations.

b. Employment

Middleborough is a net labor exporter, meaning that most working residents commute to other locations for their jobs. But the community itself is an important, albeit limited, source for jobs as well. As such, local business opportunities are necessary to maintain the population, and when they are lost, the town is significantly impacted in areas such as unemployment rates.

Unemployment Rates

Unfortunately, the town lost jobs during the last recessionary period in the early 90's. Some 1,022 jobs or 16% of the total number of local jobs were lost, moving the local unemployment rate into double digits (13%). This rate has been dramatically reduced during the course of the current economic expansion, and recent figures place this rate at about 4%. The early 1990's has not been the only time in recent decades that the figures went so high, however. The long-term trend of unemployment has extended beyond the most recent recession and has always been greater in Middleborough than the statewide rate. However, the local unemployment rates are better than the rest of the average for the SRPEDD region.

Table D2: Percent Unemployment

Year	1999	1998	1997	1996	1995
Middleborough	4.0	4.2	5.5	5.5	6.8
State	3.2	3.3	4.0	4.3	5.4

Source: Mass. Division of Employment and Training

As a related statistic, 6% of the town's households receive public assistance. This is not considered particularly high relative to similar communities. The MISER (Massachusetts Institute of Statistical and Economic Research) index ranks Middleborough as one of the 46 most distressed communities, which is an indicator that there is a need to stress economic development and the provision of well-paying jobs within the Town.

Local Jobs

Local employment is defined as jobs that are performed in Middleborough. Local employment is characterized by the presence of manufacturing jobs and the relative lack of service related jobs. In 1999, 6,805 jobs, or approximately 55% of the total labor force of 12,315 working in Middleborough, were classified as blue-collar positions. The service sector, dominated by small businesses such as attorneys, accountants, hairdressers, etc., creates 30% of Middleborough's economy compared to 36% for the state. The trade sector such as construction is important in Middleborough, creating 26% of the local economic activity compared with 23% for the state as a whole. As noted, Middleborough holds the highest percentage of these blue-collar jobs. Blue collar jobs in general, and manufacturing jobs specifically, are on the decline in the greater New England region and in all of Massachusetts. Analysts estimate that salaries associated with blue collar and manufacturing jobs will not increase as rapidly as wage rates in other sectors of the economy.

The Town has supported new job development over the past 7 years with Tax Increment Financing within its Economic Opportunity area. The related developments have provided several hundred new jobs to the area, based on estimates provided as part of the TIF process. A proportion of these jobs is held by Middleborough residents, but a process has been established to encourage this.

Industrial development is expected to play a significant role in future employment and economic patterns, based on the market trends. The Town's successful campaign to attract industrial employment mitigates against the broader trends seen in the state and region. However, Middleborough's overall economy may be somewhat at risk due to this high reliance on blue-collar employment. The high concentration of blue-collar employment suggests that household income levels in Town may not keep pace with income levels in the rest of the County, if the local residents' reliance on these jobs continues at its present rate.

Agricultural development is not expected to play as significant a role in Middleborough, based on the trends apparent in the market today. In part, this is due to the relatively small size of this sector, generally. For example, From 1996-1997, Plymouth County listed a total of 1,185 agricultural jobs with the County holding about 12.7% of all the farms in Massachusetts. Locally, in 1990, 91 Middleborough households claimed themselves as farmsteads and 88 people said they were involved in agriculture, for a total of 179 jobs. In 1998, 138 people reported that they were involved as farmsteads or in agricultural jobs.

<i>FYI: 'Blue-collar' jobs; percent of total labor force</i>	
<i>Middleborough</i>	<i>55% [6,805 jobs]</i>
<i>Plymouth County</i>	<i>45% [118,751 jobs]</i>
<i>SRPEDD communities</i>	<i>42%</i>
<i>Rest of MSA region</i>	<i>53%</i>

This small scale of employment belies the importance of the cranberry industry locally and within the region. The Ocean Spray Cranberry corporate headquarters are located in Lakeville, immediately adjacent to the town line on property that spans into Middleborough. This is an industry that has experienced substantial changes, with periods of expansion and retraction. Statistics are not available on the direct or indirect impacts on the Town from this industry, but they have clearly been significant.

It is important to underline that there may be a substantive difference between the employment that the market may provide, and the actions that the Town may undertake to protect or create new jobs. Thus, for example, Town's policies and initiatives may emphasize maintenance of the farmlands, which, although a minor part of the local economy, are very important to the overall life style and character of the Town. This has been articulated within the goals and objectives for the Master Plan. Similarly, service sector businesses with office or research and development jobs are highly desirable, and the Town may wish to pursue particular expansion of this sector by taking measures to support them, effectively shifting Middleborough's competitive position. However, the

Town can only influence the market through a relatively limited range of actions, and cannot determine it.

Comparative Job Growth

Overall, job growth is very similar to comparable counties near the Boston metropolitan area.

Table D3: Indicators of Change: Population/Job Comparison: 1996-1997

<u>County</u>	<u>Population</u>	<u>Population growth</u>	<u>New jobs created</u>
Essex	692,064	8,341	6,486
Plymouth	461,569	7,418	6,262

In the SRPEDD region, Middleborough ranks ninth in the total employment (workforce) counts for 1997. Among the higher-ranking communities are the larger cities of New Bedford, Taunton, and Attleboro, which are substantially larger. Middleborough is situated within a cluster of towns which all have approximately 10,000 jobs; Mansfield was ranked just above (with about 11,000 jobs) and Somerset below (with about 9,500 jobs). However, SRPEDD has projected that local employment will move Middleborough up at least one rank over the next twenty years. Regionally, Taunton is the largest growth and job center, with 27,379 jobs in 1999, an increase of 2.3% over 1990.

c. Growth Patterns

Highway Commercial Areas

The newer commercial growth is following the major transportation corridors and providing a highly mobile population with the easy access to the goods and services they desire. Initially, a great deal of the new commercial and retail development gathered along Route 28, which was the old Cape Highway before I-495 was constructed. Supported in Middleborough by the GU and DO zoning districts, which are primarily aligned with the most active highways, newer business expansion has spread north and south along Route 28 and the other major highways. Note that eleven million square feet of development has been proposed within 5 miles of the Middleborough Rotary. Of this, approximately 5 million square feet of development capacity exists in the immediate vicinity of the rotary. Although much of this development, being industrial and warehouse space, is not appropriate for a town center, other commercial and retail business growth has also followed the new development.

Traditional Centers: the Downtown and Village Centers

Middleborough has historic and recently-developed growth centers that are the focus for local economic development discussions. These are the business and activity centers that encourage local expenditures, thereby providing commercial land taxes to the Town, and becoming important locations and definitions of the town's identity. Middleborough's village centers and the downtown are described in some detail in the section on Land Use. Of these areas, only the downtown and Rock Village provide a traditional cluster of business activity.

To be successful in competition with the highway commercial development, town and village centers must provide a different level of pedestrian-level social and cultural activities, play on their historic charm, and provide a density of uses that distinguish it from its surroundings. The downtown has several locations for redevelopment to recreate a more vital environment through both renovation and new construction. The elements are here to nurture an active and vital town center.

The Town has undertaken important initiatives in the revitalization of the Town Center. This includes the preparation of a streetscape master plan that identifies a series of incremental improvements to the pedestrian and street infrastructure. Improvements at the four corners intersection were recently completed, and the Town has worked with areas property owners and created an improved public parking lot. Additional parking lot and streetscape improvements are planned. The Town has initiated a building renovation initiative, which will convert an historic structure into commercial and apartment uses. Feasibility for the redevelopment of vacant sites is being considered, so that the Town can best assist future private sector initiatives to add new and vital uses within this critically important district of Middleborough.

d. The Markets

Markets for each of the major business development categories; office, retail and industrial, are reviewed to give a perspective on the potential for each to contribute to local economic development. These land use categories provide taxes that typically equal, if not exceed, the costs of government support and services. They also provide the jobs and income that enrich the town residents. Consequently, the focus of this section is on these land uses in particular.

It should be noted however that housing construction is a closely related piece of the local economic development in that it provides significant jobs in the construction and sale of properties and eventually provides workers for some of the jobs that may be created.

The Market Area

Middleborough's market area is characterized as the 495 South market. This includes those areas connected by Route 495 throughout Southeastern Massachusetts' area. The analysis that follows includes a discussion about the local activities, the 495 South market, and other nearby market areas associated with urban centers. Analysts estimate that total market area around Middleborough contains 5.76 million people in 1999.

FYI: Comparisons, 1999

The Boston suburban office market absorbed more than 2.4 million square feet of office space.

In the 495-South area, less than 50,000 sq. ft. of office space was absorbed.

Office Market

Middleborough's office market primarily consists of smaller two and three-story structures which house a variety of local office users. These include local government, medical, banks, attorneys, real estate and insurance firms and other, primarily service-related providers. Most office buildings in Middleborough have an assessed value of less than \$1.0 million and no local office building is currently assessed for more than \$3.0 million.

1999 is the first year that total office space utilized within Middleborough exceeded the level seen in 1990. Local office vacancy rates decreased to less than 5% in the last two years; however, local rental rates are not yet sufficient to encourage new development. Little new office space has been developed in the last five years and this analysis did not project any major new office development in the next five years based on market trends alone.

There has been similar office development in other towns along the I-495 belt, and it is reasonable to consider why there has been a lack of activity in Middleborough. In great part, this is due to the regional location of the Town. Although it is accessible by Route

24 and I-495, communities further to the north are somewhat more accessible to population and business concentrations in the region. Good competing locations exist for new development. Middleborough could be attractive for some uses which are less dependent on these locational characteristics, as population and employment centers continue to shift close to the town, and as the quality of life is maintained so that the town is recognized as a high quality residential location, as well. The Town will also need to provide incentives for business location until market forces shift, such as the use of Tax Increment Financing or other tools.

Retail Market

Middleborough's local retail market is similar to those in many smaller towns throughout Massachusetts that lie outside of the supporting metropolitan centers. There is a total of approximately 492,000 square feet of retail space in Middleborough with 82,400 square feet vacant - a vacancy rate of 16.75%. In comparison, communities closer to Boston (i.e., Norfolk County) with 19 million square feet of retail space, have a vacancy rate of only 7.4%).

With changing consumer patterns, local retail centers have found it increasingly difficult to maintain a vibrant presence in their town. The local retail market is increasingly dependent on major 'big box' development. A large number of these types of stores have been recently developed in each of the towns surrounding Middleborough. As a result, Middleborough is feeling some of the negative impacts of these developments, i.e.



traffic, but not accruing any of the benefits; i.e. taxes. Regional retail development and changing consumer patterns have also had a negative impact on the town's local retail areas.

The other aspect of retail development in the area is the 'highway commercial' projects that site along major arterial roadways to take advantage of the number of vehicles passing on the roads. As a consequence, these projects are typically designed to accommodate automobile traffic trips and not the pedestrian. Two retail projects constructed as typical highway commercial developments are Middleborough Square with 20,000 square feet and Middleborough Crossing with 140,000 square feet permitted with Susse Chalet constructed near the intersection with Route 44.

Many of the highway commercial projects are designed with driveways, ladder signs and parking lots as their 'front yard' with the store fronts set back in a linear fashion – obviously oriented to automobile traffic and not pedestrians. Landscaping is used to beautify the front of the property, but easy visibility for the passing motorist to the stores is considered key to the owner's success and so the landscape is often minimized. This is the typical highway commercial use. Additional development of this type is expected within the General Use (GU) district along Route 28 as the traffic on the road increases.

In general, retail development within Middleborough can be expected to continue along existing patterns, gradually increasing with the pace of local and nearby residential and business growth, which should add small increments of retail development over time. Because other regional locations have become identified with regional retail providers (big box stores, “power centers” and shopping malls), the analysis could not predict a trend that would provide for such uses within the Town.

Industrial Market

As noted in the demographic indicators, Middleborough’s labor profile exhibits a higher concentration of manufacturing jobs than the other areas reviewed. It is important to note that such jobs are varied, and include high skill and high technology jobs as well as more traditional manufacturing positions. So, for example, Brookfield Engineering produces high-end technology products and has a specialized employment base. Similarly, although it is associated with an agricultural industry, the Oceanspray Cranberry headquarters provides high quality jobs at the edge of the town line.

Not unexpectedly, the industrial market represents the strongest commercial presence in Middleborough. Notable is that the only property in Middleborough with an assessed value of more than \$10 million is a commercial warehouse located at 64 Leona Drive. Consequently, industrial space and development is currently important to the Town’s fiscal health.

Vacancy rates for industrial space in the region have exceeded 20% in the last two years. Locally, though, Middleborough was able to attract new industrial development by the Campanelli Industrial Park and the Middleborough at 495 Industrial Park due to its location and the presence of the industrial parks. The Town further encouraged this location through the use of tax increment financing (“TIF” agreements).

The 495 South and South regional markets absorbed more than 1.5 million square feet of industrial space between July 1998 and July 1999. This represents the most new industrial space in the area in more than a decade. Locally, Middleborough has several notable projects associated with the Route 44/28/18 Rotary, allowed by the Development Opportunities Overlay district (DO) that the Town adopted, and assisted locally by TIF agreements.

The three major projects of the district are:

- Campanelli Business Park Two: parcels with approximately 218 acres located on both sides of Routes 18/28. The initial development received approval for 2,000,000 square feet of space, of which 1,150,000 square feet had been constructed by 1999. Because the underlying zoning is residential, no retail space is allowed.

- Middleborough Industrial Park at 495: This is a 113-acre area located off of Route 27 has about 123,000 square feet of constructed uses, and has about 178,000 square feet of permitted expansion area, according to 1999 data. Again, the underlying zoning is RA, so no retail is allowed.
- Southpointe Corporate Center: This project was previously permitted as an industrial subdivision with the potential for 1.85 million square feet office/warehouse development located near the northwestern intersection of Route 495 and Route 44. However, no action has been taken yet to begin construction. The zoning has been changed by the Town to make the area part of the DO overlay district, to allow comprehensively planned development. Because of this, retail uses consistent with the GU zone are allowed. One suggestion from the Town Planning Office was to reconsider the intended use of the site for a major retail center to take advantage of its access from Route 495, which will become easier with the reconstruction of Route 44 and the local interchange. In general, the high visibility and excellent access to this site may make it more appropriate for high value uses over the long run.

In addition, Middleborough has other industrial areas of importance. In South Middleborough, the Abbey Lane and Cranberry Estates, and the Park at the location around the former Reed building provide opportunities. Also, Glynn Electronics near the Southpointe project is proposing significant expansion.

Part of the discussion generated during the Visioning process on the Master Plan was on the benefits of the Tax Increment Finance (TIF) agreements. In theory, TIF agreements trade short-term tax reductions to pay for infrastructure improvements, so that new uses will locate within Middleborough rather than elsewhere. Eventually, as taxes return to normal rates, the Town will benefit from this investment. The Town should evaluate this assistance to ensure that it is receiving a positive net benefit, and this process has been initiated.

However, the lack of activity in the Middleborough Park and at the Southpointe Center suggests the continued need for programs that encourage private sector investment. The TIF agreements may still be necessary, unless some other form of financial or zoning incentives is provided. However, there are important priorities that need to be set concerning the choice of projects to receive TIF benefits, and the ratio of cost and benefit from the Town's point of view associated with the schedule of tax payments and infrastructure outlays. In the end, the offering a TIF to a prospective developer is a risk that the Town must make based on its judgment of the relative values of cost and benefits, and the planning process can assist in this evaluation by bringing more information forward for public consideration when future decisions are made.

An assessment of the fiscal impact from commercial development was completed and is summarized in the last section of this chapter.

Other Markets

The scope of the existing conditions analysis did not extend into other market areas. However, a question was raised about the viability of recreational industries, such as theme parks, water parks, and other similar uses. Middleborough provides two attributes that support such uses: regional access by highway and available land. The market for such uses is narrowly defined because of the limited number of uses that fall within this category within the region, and so it is difficult to define the potential or trends as they affect a particular community. However, it is reasonable to assume that proposals for such uses might be brought forward in the future.

e. Planning Trends

Market Area Trends

Southeastern Massachusetts witnessed significant development and demographic changes in the last decade and will continue to experience profound changes over the course of the next 5 to 25 years. In Middleborough the local economy grew by 1.3% annually between 1990 and 1998, compared with 1% per annum growth as an overall growth trend in the State of Massachusetts. These trends will likely continue because of the limited potential in the regional market.

The area has received more than \$1.0 in proposed new transportation improvements to the local commuter rail service as well as improvements to Routes 44, 3 and 24. As a result of new and improved commuter rail lines, southeastern Massachusetts' communities are included in the population's search for housing. This in turn leads to demands for local goods and services.

Changes taking place in Plymouth County and the Southeast region will directly influence changes in Middleborough. New development pressure is likely to increase in Middleborough and throughout southeastern Massachusetts and will have a direct impact on Middleborough's future.

Development Trends

Middleborough is positioned as a Rt. 495 South region rural/suburban community. It holds aspects of its rural roots but with a strong pull towards suburbanization. As a long-range strategy, Middleborough must decide whether it will allow a continuation of the suburbanization of the town or attempt to maintain certain of its residential and rural qualities.

Middleborough must consider its zoning as a road map for potential change and modify it according to the direction it wants to head. SRPEDD found that there was extensive potential for commercial expansion within the Town's business zoning, with the

implication that there is no foreseeable demand adequate to fill all of the available zoning. This evaluation is subject to varying interpretations of accuracy, but it makes a strong and relevant point that there is substantial capacity for business expansion.

The Build-out Report developed by SRPEDD noted the following potential development in remaining land for development:

In the GU zoning district	3,864,119 square feet
In the GUX district	10,274,402 square feet
In the Business district	116,726 square feet
In the DO district	<u>2,102,659 square feet</u>
Total	16,357,906 square feet

However, the highest development rate for industrial/commercial development in this market area has been about 1.5 million square feet in one year, and that Middleborough has contributed about one quarter of that volume in the total industrial park development. Consequently, the additional 16 million square feet available under the Town's zoning would take at least 40 years to construct under optimal economic conditions.

This should not imply that the local market could not accommodate additional industrial space. Middleborough's industrial space could be very important for the near-term future. The new industrial space under construction could also support the local job market.

As another consideration, Middleborough should prepare itself for changes in the downtown and village centers, or prepare and continue broad programs for support of those centers. Following national and local retail trends, the local neighborhood centers will be subject to change created by broader economic demands. National retail trends point to increased demand for box retail stores and super stores. These uses will not locate in the compact town and village center. However, the smaller business districts are best suited to smaller operations, most of which are owner operated.

Middleborough should prepare for proposals, or possibly even encourage big box retail stores with controls, because they are part of a larger retail trend and will affect the current mix of community and neighborhood based centers. However, they should not be considered a complete reneging of the small, mixed development complex. Successful mixed use developments with both large and small retail users have been in operation around the country and could be included within a suburban area such as the development along Route 28.

f. Economic Development Policies

Economic Development Programs and Institutions

The Town of Middleborough maintains several programs, agencies and institutions to promote economic development. Among those most relevant to this Master Plan are the following:

- Economic Target Area: The Town has been established as an Economic Target Area within the State Economic Development Program. This designation is intended to make the Town more eligible for development-related programs and resources.
- Economic Opportunity Area: With the town, three EOA's have been established that create a further targeting of economic enhancement measures. They consist of designated areas in the Development Opportunities District, in South Middleborough, and in the Downtown. Certified projects within these areas are eligible for two major incentive programs. Tax Increment Financing (TIF) allocates future tax revenues towards infrastructure improvements that are needed to allow new development. Special Tax Assessments can be made which reduce initial taxes and incrementally restore them to standard levels over a 5-year period.
- Office of Community and Economic Development: This is an agency of the Town, and has a role in pursuing grants and organizing programs and initiatives in the community.
- Community Development Block Grants: This is a federally-funded and state-administered program that provides significant resources to the Town, which it can use for a variety of community development purposes. In a change from past practice, the annual budgeting and grant application cycle has recently been extended to a three-year cycle, which will require enhance planning and coordination.
- Business and Industrial Corporation: This organization was established to support the Town's policies and programs as it relates to business enhancement. It is not a staffed organization, but is served through its Board. It owns certain land along Route 28 that can be used to further Town goals.
- Industrial Development Corporation: This organization has been organized to take advantage of state legislation that grants certain authority to a local Economic Development and Industrial Corporation (EDIC). It has the potential to assist

directly in development of projects, financing, and other activities. This corporation is served by a Board of Directors, but is not staffed.

Impact of Policies

One aspect to consider when generating economic development policies is their potential effect on other property values. As an example, if promoted in some way, small homeowner improvements combined with subsequent, even small, percentage increases in the value of a large number of residential dwellings could do more for increasing the Town's tax base than a single commercial project. Consequently, since the opposite can also occur, consideration of new economic policies must consider the impact to existing homes and businesses. The public should understand that zoning changes for development mean that adjoining properties which are not within the rezoned area could also be affected.

Regulations

In general, under the Town's regulations, subdivision and site plan reviews of commercial and industrial development apparently have been able to address many of the concerns of impact to adjoining lands where they are used as part of the DO overlay zone. One important example was the closing of an existing road into a North Middleborough residential neighborhood and the construction of a large earthen berm between the neighborhood and the Campanelli Industrial Park to eliminate cut-through traffic and visual impacts that could be deleterious to that residential area. These value enhancements associated with these regulations are very important and need to be communicated as part of the public review and approval processes. Among the options to be considered by the Town is an expansion in land use regulations that broadens site plan reviews.

Tools for Economic Development

Job retention and expansion is linked to the economic health of the community, and the tax base is a fundamental resource that is enhanced by commercial development. The local programs for economic development include the Community Development Block Grant funds (CDBG) and the Development Opportunities District (DO) creation with the Tax Increment Financing (TIF) agreements provided to ensure development within this district.

The CDBG funds have been used for a variety of business stimulus projects in the Downtown area. They have been used for improvements to signs and facades on business properties, as well as streetscape and parking lot improvements under a comprehensive plan of public property improvements. In addition, affordable residential units have been created within the downtown area with the funds.

The TIF agreements have been used to encourage new industry with the bait of abated taxes while requiring a percentage of local employment in return. These agreements have encouraged the rapid development of the Campanelli Industrial Park with new businesses such as the Christmas Tree Shops warehouse. However, it is not clear in a review of Town records how many local jobs have been created through these agreements.

In addition, the Town has provided infrastructure in areas where existing businesses may want to expand or new businesses may be created. Historically, the Town has used a differential tax rate – higher for businesses than for residential properties – which can be a way to justify the expense of extending utilities. However, the higher tax rates can also be a disincentive for new commercial development. In addition, rates that the Town can charge on the services (as provided by State law) can be used to bring the fees for utilities in line with the costs of creating the utility system. Since the Town has already established the water and sewer enterprise accounts for this purpose, and has been gradually bringing the tax rates to equity, the general direction of Middleborough's economic policy appears sound.

Zoning is the principal means the Town has for directing growth and job creation for businesses is wrapped-up in the downtown business district and the GU and DO districts. The DO district has been considered fairly successful in interviews with residents, business people and government officials. Issues with the GU district are more numerous. The issues include concerns that the GU districts have been used for residential development and that the pattern of development and lot creation has created the small, highly competitive retail businesses and have not allowed a larger employer. The downtown businesses are historically limited by the way the Town has developed. However, the downtown has other social and cultural amenities that could be used to support different types of business. In addition, the Town has created or allowed a few areas of potential industrial development in South Middleborough. However these areas appear to have been subject to some neglect given the successes of industrial development further north.

g. Fiscal Analysis

The purposes of a fiscal impact analysis are to quantify the estimated increases in local expenditures associated with the new development and compare these estimates with the estimated increases in new tax revenues attributable to the development. The analysis focuses on direct impacts. It estimates the primary costs, those related to the Town's budget, and the immediate revenues, local real estate taxes. This specifically omits any estimate of increased state or federal contributions to the local budget. This omission may understate the likely revenue associated with the new development.

Methodology

The development of residential housing will attract new residents to Middleborough. The influx of residents is assumed to have a direct impact on certain municipal services and

expenses. In addition, any increase in the number of public school students associated with the new development will have an impact on local expenditures for public education. In a similar manner, the development of new commercial space will attract new shoppers, employees and other persons to Middleborough. The increase in the number of residents and non-residents in Middleborough will have an impact on municipal services and expenses as well as educational expenses. There are several methods used to estimate the impact of new development on local services and expenditures. One method used to estimate the anticipated increase in local expenditures likely to be associated with new development is called the proportional valuation method. It assumes certain relationships exist between new development and municipal costs. It is an average costing approach used to project the impact of residential and nonresidential (industrial and commercial) development on local costs and revenues. Costs associated with new residential development are assumed to be correlated with the number of new residents and number of new students living in the new units. Non-residential costs are estimated based on the ratio of new commercial development to existing commercial development.

Town Budget

New development will only affect certain types of local services. The first step in determining the impact of the new development is to review Middleborough's budget and estimate which expense categories are likely to be affected by the new development. The Fiscal-Year 2000 budget was used during this evaluation, because it was the most recent available data when this study was initiated. Subsequent annual budgets are expected to provide similar results. Middleborough's FY 2000 Town budget was approximately \$38.9 million. Educational costs comprise about half of the budget. The balance of the budget is divided into several categories, General Government, Public Safety, Public Works, Community Services, Unclassified, Debt Service, Employee Benefits, and Other. The next exhibit outlines these categories and the budgeted amount for each line item.

Table D4: Fiscal 2000 Recommended Town Budget

	Salaries & Wages/ Other Expenses
Municipal	
General Government	\$1,982,875
Public Safety	\$4,223,238
Public Works	\$1,370,193
Community Services	\$1,464,546
Unclassified	\$2,105,438
Enterprise Fund	\$0
Debt Service	\$2,724,996
Employee Benefits	\$5,330,530
Other	\$651,151
Subtotal Municipal	\$19,852,967
School District (City)	\$19,044,804
Subtotal School	\$19,044,804
TOTAL Budget	\$38,897,771

The analysis assumed that certain local costs are not correlated with changes in local development. These are considered fixed costs. Debt Service, for example, is considered a fixed cost, in terms of the impact of new development on the estimated budget. Other costs such as public safety, public works, and culture and recreation are more directly influenced by new development. These are considered variable costs. Schools are directly affected by changes in the number of students. Based on our analysis of the FY 2000 budget, we estimate that that somewhat more than 54% of all municipal expenditures are variable, with more than 99% of all school expenditures being variable. In total, approximately 71% of the Town budget is considered variable. That means that new development will have an incremental impact on more than two thirds of the Town's budget. The next exhibit illustrates the variable costs of each municipal service by general category. (A detailed breakdown of this analysis is provided in the appendix to this report.)

Table D5: Fixed and Variable Municipal Costs

Municipal and School District Expenditures by Service Category
 FY 2000 Budget, Town of Middleborough

	Salaries & Wages/ Other Expenses	Percent of Total	Expenses Per		Variable Costs	
			Capita	Pupil	Percentage Alloc'n	Salaries & Wages/ Other Expenses
Municipal						
General Government	\$1,982,875	10.0%	\$99.14		49.9%	\$988,805
Public Safety	\$4,223,238	21.3%	\$211.16		97.0%	\$4,094,512
Public Works	\$1,370,193	6.9%	\$68.51		19.6%	\$269,100
Community Services	\$1,464,546	7.4%	\$73.23		52.8%	\$773,708
Unclassified	\$2,105,438	10.6%	\$105.27		95.3%	\$2,005,438
Enterprise Fund	\$0	0.0%	\$0.00		0.0%	\$0
Debt Service	\$2,724,996	13.7%	\$136.25		0.0%	\$0
Employee Benefits	\$5,330,530	26.9%	\$266.53		49.9%	\$2,658,188
Other	\$651,151	3.3%	\$32.56		0.0%	\$0
Subtotal Municipal	\$19,852,967	100.0%	\$992.65		54.3%	\$10,789,750
School District (City)						
	\$19,044,804	100.0%		\$5,197.82	99.9%	\$19,017,173
Subtotal School	\$19,044,804	100.0%		\$5,197.82	99.9%	\$19,017,173
TOTAL Budget	\$38,897,771				76.6%	\$29,806,923

The results estimate that nearly \$33.5 million of the current \$39.9 million budget will be affected by the new development. Because the impact of residential and commercial development on variable costs is calculated by two different methods, the variable costs must be allocated between the commercial and residential development prior to an analysis of the impact of development on these costs. The next step in the proportional allocation method is the allocation of variable costs between residential and non-residential uses. Non-residential buildings comprise approximately 19.4% of all local taxable real estate. The evaluation initially allocates 19.4% of our estimate of variable costs to the impact of the new commercial development. That allocation is equal to \$2.09 million; however, the estimate assumes that funds for human services, culture and recreation, and education will not be affected by new commercial development. Changes to these line items will be fully due to changes associated with new residential development. The analysis, therefore, excluded those expenditures associated with human services, culture and recreation, and education from the commercial allocation of variable costs. As shown in the next exhibit, the analysis estimates that \$1.55 million of the local budget will be affected by new commercial development.

The evaluation of new commercial development's impact on these costs helps to illustrate the net cost and benefit of new commercial development in Middleborough and the implications of Tax Increment Financing.

Table D6: Portion of Town Budget Affected by Commercial Development

Municipal and School District Expenditures by Service Category
FY 2000 Budget, Town of Middleborough

	Salaries & Wages/ Other Expenses	Percent of Total	Expenses Per		Variable Costs			Less Comm'l Alloc'n 19.4%	Comm'l Alloc'n Refinement	Adjusted Comm'l Alloc'n
			Capita	Pupil	Percentage Alloc'n	Salaries & Wages/ Other Expenses	Percent of Allocation			
Municipal										
General Government	\$1,982,875	10.0%	\$99.14		49.9%	\$988,805	9.2%	\$ 191,595	100.00%	\$191,595
Public Safety	\$4,223,238	21.3%	\$211.16		97.0%	\$4,094,512	37.9%	\$ 793,368	100.00%	\$793,368
Public Works	\$1,370,193	6.9%	\$68.51		19.6%	\$269,100	2.5%	\$ 52,142	100.00%	\$52,142
Community Services	\$1,464,546	7.4%	\$73.23		52.8%	\$773,708	7.2%	\$ 149,916	0.00%	\$0
Unclassified	\$2,105,438	10.6%	\$105.27		95.3%	\$2,005,438	18.6%	\$ 388,581	0.00%	\$0
Enterprise Fund	\$0	0.0%	\$0.00		0.0%	\$0	0.0%	\$ -	100.00%	\$0
Debt Service	\$2,724,996	13.7%	\$136.25		0.0%	\$0	0.0%	\$ -	100.00%	\$0
Employee Benefits	\$5,330,530	26.9%	\$266.53		49.9%	\$2,658,188	24.6%	\$ 515,060	100.00%	\$515,060
Other	\$651,151	3.3%	\$32.56		0.0%	\$0	0.0%	\$ -	100.00%	\$0
Subtotal Municipal	\$19,852,967	100.0%	\$992.65		54.3%	\$10,789,750	100.0%	\$2,090,662	74.24%	\$1,552,164

The analysis allocated \$1.55 million of the estimated variable costs to commercial development. The analysis ascribed the balance of local variable costs to changes in residential development. The balance is equal to more than \$28.2 million. The next exhibit illustrates the allocation of this portion of the budget to residential uses.

Table D7: Portion of Town Budget Affected by Residential Development

	Salaries & Wages/ Other Expenses	Percentage Alloc'n	Salaries & Wages/ Other Expenses	Comm'l Alloc'n	Resdntl Alloc'n
Municipal					
General Government	\$1,982,875	49.9%	\$988,805	\$191,595	\$797,210
Public Safety	\$4,223,238	97.0%	\$4,094,512	\$793,368	\$3,301,144
Public Works	\$1,370,193	19.6%	\$269,100	\$52,142	\$216,958
Community Services	\$1,464,546	52.8%	\$773,708	\$0	\$773,708
Unclassified	\$2,105,438	95.3%	\$2,005,438	\$0	\$2,005,438
Enterprise Fund	\$0	0.0%	\$0	\$0	\$0
Debt Service	\$2,724,996	0.0%	\$0	\$0	\$0
Employee Benefits	\$5,330,530	49.9%	\$2,658,188	\$515,060	\$2,143,128
Other	\$651,151	0.0%	\$0	\$0	\$0
Subtotal Municipal	\$19,852,967	54.3%	\$10,789,750	\$1,552,164	\$9,237,586
School District (City)					
	\$19,044,804	99.9%	\$19,017,173	\$0	\$19,017,173
Subtotal School	\$19,044,804	99.9%	\$19,017,173	\$0	\$19,017,173
TOTAL Budget	\$38,897,771	76.6%	\$29,806,923	\$1,552,164	\$28,254,759

Residential Analysis of Local Expenditures

The impact of new residential development is traditionally evaluated in terms of the per capita costs of municipal expenditures and the per student costs of expenditures on education. In 2000, Middleborough's estimated population was 20,000. Town records

indicate that Middleborough's public school enrollment will be 3,664 that year. Middleborough's FY 2000 budget (exclusive of education) is equal to \$992.65 per Middleborough resident. The total budget is equal to approximately \$1,945 per person. The FY 2000 budget for education is equal to approximately \$5,200 dollars per student on local education. Our estimate of the variable portion of the budget for municipal items is equal to approximately \$462 per person, exclusive of education and \$1,412 with educational costs. The variable portion of the education budget is equal to approximately \$5,190 per pupil. Note how little of the educational budget is considered fixed and not affected by new students.

In the proportional allocation method, the analysis assumes that each new resident associated with the residential units developed in Town will increase local municipal expenditures by \$992.65. New expenditures for education will be equal to \$5,190 for each new student living in Town. It is necessary to estimate the number of people and the number of public school children likely to be living in the new units in order to estimate the impact of new development of Town finances.

Table D8: Variable Residential Costs Per Capita and Per Pupil

	Salaries & Wages/ Other Expenses	Resdntl Alloc'n	Expenses Per Capita	Expenses Per Pupil
Municipal				
General Government	\$988,805	\$797,210	\$39.86	
Public Safety	\$4,094,512	\$3,301,144	\$165.06	
Public Works	\$269,100	\$216,958	\$10.85	
Community Services	\$773,708	\$773,708	\$38.69	
Unclassified	\$2,005,438	\$2,005,438	\$100.27	
Enterprise Fund	\$0	\$0	\$0.00	
Debt Service	\$0	\$0	\$0.00	
Employee Benefits	\$2,658,188	\$2,143,128	\$107.16	
Other	\$0	\$0	\$0.00	
Subtotal Municipal	\$10,789,750	\$9,237,586	\$461.88	
School District (City)				
	\$19,017,173	\$19,017,173	\$950.86	\$5,190.28
Subtotal School	\$19,017,173	\$19,017,173	\$950.86	\$5,190.28

Changes in the estimated number of persons or pupils are considered demographic changes. The American Housing Survey provides data related to the expected number of residents and new students likely to be living in housing in the Northeast. While the data is not specifically tailored to Middleborough, it can be used to estimate the number of new residents and new students associated with any new development. The next exhibit

illustrates the impact of these estimates on Middleborough assuming the development of a 100-unit rental development and a 100 unit single-family housing complex.

Table D9: Demographic Estimates for New Residential Development

	Pct.	Number of Units	Demographic Multipliers		Total Increase	
			Persons ⁽¹⁾	Pupils ⁽¹⁾	Persons	Public School Pupils
Rental						
one-bedroom	25%	25	1.228	0.038	31	0.76
two-bedroom	50%	50	1.964	0.150	98	6.00
three-bedroom	25%	25		0.082	0	1.65
Subtotal	100%	100	1.289	0.084	129	8.41
Single Family						
two-bedroom	10%	80	2.069	0.246	165	15.74
three-bedroom	45%	180	3.006	1.130	541	162.72
four-bedroom	45%	0		2.068	0	0.00
Subtotal	100%	100	7.066	1.785	707	178
TOTAL RESIDENTIAL		200	4.177	0.934	835	187

The estimated per capita and per pupil costs are multiplied by the estimates of new residents and new pupils to determine our estimate of the increases in local expenditures associated with the new residential development. As illustrated in the next exhibit, the analysis estimates that new development of 200 units will increase local expenditures by approximately 1.34 million dollars annually. The increase is equal to approximately 5% of the total budget. The increase is due to an estimated \$386,000 (approximate) in increased municipal costs and more than \$970,000 in school related expenditures.

Table D10: Estimate of Expenditures Associated with New Residential Development

	Pct.	Number of Units	Demographic Multipliers		Total Increase		Annual Expenditures		New Annual Expenditures		
			Persons ⁽¹⁾	Pupils ⁽¹⁾	Persons	Public School Pupils	Municipal Per Capita	School Per Pupil	Municipal	School	Total
Rental											
one-bedroom	25%	25	1.228	0.038	31	0.76	\$462	\$5,198	\$14,184	\$3,950	\$18,135
two-bedroom	50%	50	1.964	0.150	98	6.00	\$462	\$5,198	\$45,350	\$31,187	\$76,537
three-bedroom	25%	25		0.082	0	1.65	N/A	\$5,198	\$0	\$8,566	\$8,566
Subtotal	100%	100	1.289	0.084	129	8.41	\$462	\$5,198	\$59,534	\$43,703	\$103,237
Single Family											
two-bedroom	10%	80	2.069	0.246	165	15.74	\$462	\$5,198	\$76,432	\$81,834	\$158,266
three-bedroom	45%	180	3.006	1.130	541	162.72	\$462	\$5,198	\$249,914	\$845,789	\$1,095,703
four-bedroom	45%	0		2.068	0	0.00	N/A	N/A	\$0	\$0	\$0
Subtotal	100%	100	7.066	1.785	707	178	\$0	\$5,198	\$326,345	\$927,623	\$1,253,969
TOTAL RESIDENTIAL		200	4.177	0.934	835	187	\$462	\$5,198	\$385,879	\$971,327	\$1,357,206

Source:

(1) American Housing Survey, 1987.

Commercial Analysis of Local Expenditures

The impact of new commercial development on local expenditures is traditionally viewed in context of the costs currently associated with commercial development. New commercial-related costs are traditionally calculated based on the percentage increase in local commercial valuations. Using this method, we must assume that municipal costs for

commercial developments have a direct relationship with commercial valuation. Increases in local costs are a factor of the assessed value of new commercial development.

The methodology used takes those variable costs previously estimated as being associated with new commercial development, \$1,552,164, and multiplies these costs by the change in commercial valuation.

As an example, Middleborough’s non-residential real property currently has an assessed value of \$190,688,639. Assume that a new industrial development was proposed that would have an assessed value of \$15,000,000. The \$15.0 million would be equal to 7.9% of the existing non-residential real property in Town. Using the ratio of costs and proportional valuation method, the new development will generate approximately \$122,000 in new annual costs each year and will need to generate a similar level of new income. The next exhibit illustrates potential costs associated with three new developments.

Table D11: Commercial Municipal Costs

Type of Development	Estimate of Value	Non-Residential Property Value	Percent of New Development	Variable Costs	Coefficient	Dollar Amt.
Industrial 1	\$15,000,000	\$190,668,659	7.9%	\$1,552,164	1.00	\$122,110
Industrial 2	\$5,000,000	\$190,668,659	2.6%	\$1,552,164	1.00	\$40,703
Industrial 3	\$750,000	\$190,668,659	0.4%	\$1,552,164	1.00	\$6,105
Total	\$20,750,000	\$190,668,659	10.9%	\$1,552,164	1.00	\$168,918

Estimates of Revenue

This study limited analysis of new revenues to real estate tax revenues associated with the development. This approach is conservative and omits new revenue provided by the State for new Middleborough students or other local, non-real estate tax revenue. Thus, this approach understates new revenues and understates the positive fiscal impact associated with the development.

The estimate of new real estate taxes is a two-step process. The analysis first estimated the value of the new development. The Town’s current tax rate, \$17.02 per \$1,000 of value, is then applied to the estimate of value to yield the new estimated tax revenue.

Residential Valuation

The hypothetical residential development consists of 100 rental apartment units and 100 single-family homes. The analysis additionally assumed that 25% of the rental units will be reserved as affordable housing units. The analysis estimates that the market-rate rental apartment units will generate an assessed value of \$100,000 per unit. The analysis estimates that the affordable units will generate an assessed value of \$65,000 per unit. For

study purposes, the estimate assumes that the single-family housing units will yield an average assessed value of \$250,000 per unit. In total, the proposed residential development is estimated to yield \$34.125 million in assessed value, approximately \$170,000 per unit. The new development will generate approximately \$581,000 in new revenue to offset the \$1.36 million in new local costs. Thus, Middleborough will need to seek more than \$775,000 in non-local funds. State aid for education has been equal to approximately \$4,448 per student. The funding gap of \$775,000 is equal to \$4,155 per student.

Table D12: Estimate of Assessed Value of Residential Development

Residential	Per Unit	Number of Units	Assessed Value	Residential Tax Rate	New Taxes
Rental - Market	\$100,000	75	\$7,500,000	\$17.02	\$127,650
Rental - Other	\$65,000	25	\$1,625,000	\$17.02	\$27,658
Homes	\$250,000	100	\$25,000,000	\$17.02	\$425,500
Subtotal/Average	\$170,625	200	\$34,125,000		\$580,808

Impact Summary: New Residential Development

As noted in the previous analysis, we estimate that new residential development will generate annual municipal costs equal to approximately \$462 per person and school related costs equal to approximately \$5,200 (prior to any state contribution). Data provided by the American Housing Survey indicates that a typical three-bedroom single-family home in the Northeast region of the United States contains approximately three persons, with 1.65 pupils. For this specific analysis we will assume a four-person household with two school-age children. Based on our cost estimates, then, a typical three-bedroom single-family home will generate approximately \$12,248 in annual local costs as shown below.

Table D13: Cost Implications of New Households with Children

Category	Cost Per Person/Student	Total Cost
Four person household	\$462.00	\$1,848.00
Two school-aged children	\$5,200	\$10,400
Total costs		\$12,248

The total costs illustrated do not include the funding provided by the state, which reduces the local revenue required. However, for the purpose of this analysis, and due to the fact that these costs estimates represent incremental changes to the budget, it is important to review the full potential costs of any new housing developed.

In order for a new single-family three-bedroom house to not pose additional financial hardships on the Town, annual tax revenue should exceed \$12,300. The current local residential tax rate is equal to \$17.02 per \$1,000 of assessed value. In order to generate \$12,300 in annual taxes, new three-bedroom houses require an assessed value of slightly less than \$720,000. If one assumes that the state will continue to absorb up to \$3,500 per pupil, the total costs directly attributable to the Town is reduced to \$5,248. The resultant housing value required is then reduced to \$308,000.

Thus, the \$310,000 (approximate) housing value represents the minimum housing value needed to “break even”. A reduction in state aid would increase this “break even” value.

Impact Summary: Mobile Homes

Local mobile homes are age-restricted and are not likely to contain any school-age children. Therefore, the cost analysis is limited to the previously estimated costs per person. As discussed, the analysis estimated these costs at \$462.00 per person. Mobile homes, with one to two persons living in each unit, will generate from \$462.00 to \$924 per year, with an expected annual average cost of approximately \$700 per unit, assuming 1.5 persons per unit, on average. Thus, mobile homes need to generate approximately \$700 per year in annual tax revenue.

Mobile homes are taxed as personal property, while the land that they occupy is taxed as real estate. Currently, the average mobile home in Middleborough is taxed at a rate of approximately \$220 each, which takes into account the value of the underlying land. As a result, the fiscal impacts of new mobile home development should be reviewed as part of any proposal to expand mobile homes as a permitted land use.

Commercial Valuation and Impacts

The study has estimated the value of the potential new commercial developments as follows:

Table D14: Estimate of Assessed Value of Commercial Development

Type of Development	Estimate of Value	Tax Rate Per \$1,000	Total Taxes
Industrial 1	\$15,000,000	\$19.23	\$288,450
Industrial 2	\$5,000,000	\$19.23	\$96,150
Industrial 3	\$750,000	\$19.23	\$14,423
Subtotal	\$20,750,000		\$399,023

This commercial contribution to the tax base and annual tax revenues substantially exceed the municipal costs supporting it. For example, in the illustration shown above, the incremental annual cost to the Town for the three developments would be \$168,918, while the incremental annual tax revenue to the town would be 288,450.

This illustration is helpful to convey the importance to the Town of retaining and expanding its commercial development base. The net impact of new commercial development of this type would provide 246% of its cost to the Town in the form of additional tax revenues.

. Impact Assessment

The impacts of economic development on services and traffic generation can be significant. The challenge is to provide for a balance between the impacts and the benefits and the investments in infrastructure so that the process is sustainable. It is important to address the impacts in planned increments. So, for example, the build-out analysis provided by SRPEDD/EOEA indicated that the build-out under current zoning would create an equivalent demand on water of about 4.6 million gallons a day with more than half of that going to commercial uses. However, it is hardly necessary to create facilities today that will produce that total amount. If the Town can mitigate the impacts of new development with infrastructure that will be cost effective over time through strategic planning, then everyone will be well-served. This can be achieved, in part, through expanded impact assessment methods within the Town

i. Town Budgeting and Financing

The Town of Middleborough has entered an era of particular budgetary constraints due to several factors. As with all other municipalities within Massachusetts, increases in local tax revenues are limited by state law, as established through the restriction known as Proposition 2 ½. Municipal costs have risen to meet new needs within the Town, and to meet mandated requirements at the state and federal levels. Although the Town has been experiencing growth, much of the residential growth brings costs in excess of the net tax revenues that they generate (see the fiscal analysis, above). Some commercial receipts have lagged because of the tax increment financing that accompanied some growth. The Town has limited ability to finance current expenditures, partly because of its current levels of borrowing, and partly because of the revenue/expenditure gap. The Massachusetts Department of Revenue prepared an analysis of the Town's financial position in 2000 that concluded that the Town will experience significant budget deficit gaps that will steadily grow over the next few years, unless expenditure or revenue trends shift.

Because of this financial condition, the Town must take particular care in reviewing the direct and indirect fiscal impacts of any major land use or development activity prior to proceeding.

5. Alternatives for the Economy of Middleborough

The following list represents policies that the Town could pursue as a result of this master planning process relative to its goals and objectives.

Choice: Maintain Current Policies and Practices

This is the “no action” alternative. This approach, according to the Department of Revenue, will track the Town towards increasing budget deficits because of the mismatch between tax revenues and expenditures. The Town would continue to support commercial and residential development, but the cost/benefit impacts would not be clearly tied to a specific strategy for the Town as a whole. The expansion of commercial uses would continue to be supported as a general policy, but without additional resources.

Advantages: This approach will require short term, continuous adjustments in actions and policies without a significant shift in regulations or resources.

Disadvantages: The problems associated with this approach appear too progressive, and may lead to increasingly limited options in accepting new development proposals or undertaking actions to enhance revenues out of necessity.

Choice: Create and Implement a Coordinated Economic Development Strategy

As an alternative, the Town could create a coordinated Economic Development Strategy that takes into account the Town’s economic goals and objectives and creates a common framework for actions. Such a strategy would link Town capital planning, land use strategies, and economic promotion together by establishing an internal consensus on goals and measures for success. Such a strategy would be implemented, in part, by ongoing coordination that would occur on an organized basis. The strategy must acknowledge the limits of the Town’s ability to affect markets, but should address how it can best react to advantageous market conditions.

Advantages: The advantages of such an approach include ensuring that Town expenditures of human and financial resources are proactively directed towards the best short-term and long-term outcomes for economic development.

Disadvantages: The disadvantages of this approach are related to the output of time and resources necessary to create a strategy, and to implement its recommendations.

Choice: Create a Long-Term Economic Development and Community Finance Strategy

The Town could establish a long-term strategy specifically relating the economic development decisions within the Town to its budgetary needs. This approach would attempt to create a managed relationship between Town actions to enhance revenues and the expenditure profile for the future.

Advantages: This strategy would provide a stronger basis for economic development, land use and other policies and decisions.

Disadvantages: Such a strategy cannot predict important budget and economic variables, so the usefulness of the strategy may be significantly lessened.

Choice: Undertake Measures to Enhance Residential Real Estate Values, including Actions that Enhance the Quality of Life in Middleborough

As noted in the fiscal impact analysis, the value of residential real estate composes the greatest part of the tax base, by far. In this regard, actions and policies that improve the quality of life within the Town make it more desirable, and literally a more valued place to live. The Town can contribute to this in many ways, including supporting recreational opportunities, cultural events, open space preservation, the quality and diversity of educational programs, the character of the village and downtown clusters – everything that distinguishes Middleborough as a great place to live.

Advantages: The advantages of this approach will be gained through rising property values and a rising tax base, along with the increasing quality of life within the community.

Disadvantages: The disadvantages of this approach include the lag time between Town measures to improve the quality of life and the economic impact. It must be considered as a general value and vision, which will be rewarded over time, rather than as a short-term measure.

Choice: Strengthen the Institutional Framework for Economic Development

The Town has several organizations and departments that are concerned with economic development. This includes the Town Manager, the Office of Community and Economic Development, the Business and Industrial Corporation, the Industrial Development Corporation, and the Planning Department. The role of these groups could be expanded and additional efforts undertaken to enhance coordination and consistency with Town policy goals.

Advantages: The advantages of this approach will be to clarify the mission and role of the participants in economic development initiatives, and relate their activities to a coordinated strategy.

Disadvantages: This effort may require additional financial and human resources.

Choice: Support the Downtown and Village Business Districts

The downtown and the various village-scale business districts require public sector support if they are to remain competitive and vital places. The support could take many forms, including streetscape improvement projects, initiatives to spur development, provision of parking, roadway improvements, sponsorship of special events, or many other activities which would extend the existing, support into the future.

Advantages: Public support of the traditional commercial areas will assist these areas to remain economically vital, enhance the quality of life, and help preserve the historic and cultural image of the Town.

Disadvantages: This effort would require additional financial and human resources that might be used elsewhere.

Choice: Pursue Revenue Sharing Agreements with Other Communities

The existing property tax structure recognizes town boundaries, but it does not recognize that impacts sometimes cross town lines. In some cases, the tax benefits from new development accrue in one town, while the infrastructure or service impacts are shared by two or more communities. The Town might benefit from a more equitable distribution of costs and revenues, and could pursue establishing agreements to achieve this with neighboring towns.

Advantages: Middleborough may benefit by gaining revenues or other resources to offset impacts, depending on the circumstances.

Disadvantages: Middleborough may lose some revenues or other resources by sharing the benefits of new development with other jurisdictions.

Choice: Establish and New Cost/Benefit Review Process

The Town could implement new requirements that certain Town actions undergo a cost/benefit analysis to provide information on the long-term and short-term costs and benefits of that action, prior to proceeding. Such a process would require creation of a standard report for public review and comment, and consideration by relevant boards and commissions. Projects reviewed by such analysis might include new school construction, sales of public owned property, decisions regarding tax increment financing, extension of infrastructure, and the like.

Advantages: Middleborough citizens and the Town government would have a consistent basis for comparing the implications of key actions, and would be more informed when considering relevant priorities.

Disadvantages: This process would require both financial and human resources to operate, and would slow decision-making processes.

Choice: Provide Streamlined Permitting for Preferred Project Types

The Town could create aggressive review schedules and provide for priority processing of projects that it deems are particularly in the interests of the Town. For example, some commercial uses may be highly desirable, but the decision to locate in Middleborough may be dependent upon the ability to proceed rapidly. The Town could set guidelines that would allow such projects to receive special attentiveness.

Advantages: This process would encourage beneficial development.

Disadvantages: Rapid reviews may tend to overlook conditions that would not conform with Town policies or good planning practice, which should be followed regardless of the project's desirability on the whole.

Choice: Concentrate on Initiatives that Create Jobs for Residents

Among the most important economic considerations is the availability of good jobs for town residents. The Town can actively promote job retention and creation through a number of different initiatives. It can continue the practice of linking TIF agreements to the creation of jobs for Middleborough residents, promote additional commercial development, use regulations to enhance the ability of residents to work within their homes, and support educational and training programs.

Advantages: Middleborough may benefit by gaining revenues or other resources to offset impacts, depending on the circumstances.

Disadvantages: Middleborough may lose some revenues or other resources by sharing the benefits of new development with other jurisdictions.

Choice: Support New Commercial and Industrial Development

As the fiscal evaluation demonstrates, commercial and industrial development provides more revenues than the costs that it adds to the Town and provides jobs that may be available to residents. The Town could choose to continue to more actively promote commercial and industrial development through land use policies, use of the Economic Opportunity Area incentives, investment in infrastructure, active use of its Industrial Development Corporation, Business and Industrial Corporation, or other tools. Part of this effort may also include a targeted marketing program that is based on a professional assessment of the locational advantages of Middleborough and current market trends, and then establishes a funded marketing strategy. Part of this effort may require use of the Town's Enterprise fund to extend water utilities to areas that are underserved to support new development.

Advantages: The benefits of this policy would be an increased tax base and jobs.

Disadvantages: The disadvantages of this approach are associated with the costs of the actions that the Town chooses to take. It could include increased conflicts with other uses, such as residences, and increased traffic in some locations.

Choice: Target High Value Office or Research and Development Uses

Office and research and development uses bring very high land and property values to developing areas, with associated increases in tax base. They also bring a diversity of jobs and indirect impacts on other businesses. The Town has a relatively low proportion of such uses compared to other communities, and this might be addressed by focusing

actions to attract such uses. The same tools as used for any business relocation or expansion support would be employed in this effort.

Advantages: The benefits of this policy would be an increased tax base and jobs, and indirect benefits above those offered by other, less intensive uses.

Disadvantages: The disadvantages of this approach are associated with the additional cost, effort and risk associated with pursuing uses that may be difficult to identify and attract to Middleborough because of market resistance.

Choice: Emphasize agricultural uses as an economic sector for protection and enhancement, with particular prominence for the cranberry industry.

Middleborough is strongly identified with its agriculture, particularly with the cranberry bogs and related industry. The Town could prioritize financial support and offer additional incentives to expand these uses. Some of the mechanisms useful in achieving this support are discussed in the section on Natural Resources.

Advantages: The Town may be able to affect some support for these uses as an economic activity, and help maintain its self-image and traditional character.

Disadvantages: The market forces that are affecting farm and cranberry industry trends may be much stronger than the Town can reasonably hope to influence, and the expenditure of significant financial resources might be poorly spent relative to both its success and the net economic benefit associated with this expenditure.

Choice: Emphasize Tourism as a Development Sector.

Middleborough has some potential to serve as a visitor destination, with its museum, parks, festivals, and historic traditions. These could be emphasized through investments and Town programs to attract visitors. It could also be supportive of private sector initiatives to provide entertainment or visitor attractions. The economic benefit from this emphasis would be local jobs associated with the attractions, and the revenues from local sales to visitors.

Advantages: The gains to the town would include local jobs and increased revenues. In addition, this would enhance the quality of life within the town, which would have indirect economic benefits.

Disadvantages: The Town has limited opportunities for public attractions that would be of a scale that would bring significant direct economic benefits. It would have to compete with the many existing attractions throughout the region. Large private sector attractions would have impacts that would need to be considered on a project-by-project basis, but typically include traffic issues, adjacency issues, and concerns about the effect on overall community character.

Choice: Reorganize the GU Zone to Enhance Property Values

The Town could reorganize the GU Zone and create special zoning districts that are particularly supportive of high value retail, commercial or industrial development and reduce potential conflicts with other uses.

Advantages: This approach would provide for a more clear pattern of development that would be attractive to higher value investment, because the adjacent use patterns would be known and because of site planning, density, or other standards that would enhance values.

Disadvantages: The reorganization of uses to enhance development opportunities in some areas may be perceived as inequitable to some existing property owners that might not benefit from adjustments to the existing zoning.

E. Traffic and Circulation

1. Introduction

This section focuses on Transportation. The transportation system in Middleborough has several components: streets and highways; bicycle and pedestrian facilities and public transportation services. Each plays a role in the mobility of Middleborough residents within the Town and to destinations outside of Town. This section contains a description of existing conditions, a look at some of the issues related to the Town's transportation system and key findings of our analysis.



The population of Middleborough and the entire southeast Massachusetts region has experienced significant growth during the past four decades with the decentralization of population away from congested urban centers. Employment has followed population growth. These increases in population and employment have resulted in more people making trips within and through Middleborough. These trends are expected to continue through 2020 according to SRPEDD projections. During the next 20 years, the regional population is expected to increase by 15%, the regional employment by 21% and daily vehicle miles of travel by 30%. In other words, more and longer vehicle trips are being made as a result of changes in regional demographics.

2. Goals and Objectives for Traffic and Circulation

Among the goals and objectives that would structure future Town policies towards transportation are the following:

Goal:

Support improvements to Middleborough's transportation that enhance the quality of life and the prosperity of the community.

Specific Objectives:

- Match land development to roadway infrastructure needs by ensuring that new development is properly served by safe and pleasant roadways, using impact assessments as a means to this end.
- Ensure adequate and convenient access to major commercial and industrial areas.
- Design improvements and new development to retain scenic rural roadways.
- Phase improvements to Route 44 in a way that minimizes negative impacts to the Town by recognizing that Route 44 improvements will have a significant impact on regional transportation and on community character.

Goal:

Support the expansion of regional rail transit which can provide additional regional access to and from Middleborough from the south.

Goal:

Support alternative modes of transportation such as bikeways and pedestrian paths that connect the Town together.

Goal:

Undertake roadway improvement programs that improve safety and upgrade the quality of the Town's infrastructure through prioritized planning and implementation.

3. Key Findings

The following general observations summarize the key findings of the traffic and circulation analysis:

- Middleborough has over 190 miles of public roads, approximately 6 percent of which are privately owned public roads. More than 95 percent of Middleborough's streets are two lane roadways. Four major highways, (Routes 28 and 18 - serving Southeastern

Massachusetts communities, Route 44 – the major east-west highway through the town, Route 105 – a local north-south highway, and Interstate 495 - the outer beltway of the Boston metropolitan highway system) converge in Middleborough.

- Between 1988 and 1995, Middleborough's traffic, on average, grew at an annual rate of five percent, a high rate of growth compared to the statewide average.
- Middleborough's major street system is experiencing significant demands during the morning and late afternoon peak hours due to demands of commuter traffic. Observations indicate that traffic volumes are generally not exceeding capacity conditions, but several locations are experiencing traffic demands higher than may be acceptable to local residents. The Middleborough Circle Rotary, where Routes 44, 28/18 merge just east of the I-495 interchange is the critical access/egress point for commuter traffic into and out of the town.
- According to the SRPEDD Pavement Management Report for the Town of Middleborough, approximately 26 percent of Middleborough's roadway pavement that is eligible for federal and state aid funding was in fair to poor condition as of 1997. The Town's Department of public works has stated that funding from MassHighway has been reduced by 66 percent during the past year, and the Town will need to find alternate funding sources for future road repairs.
- Middleborough has eight traffic signals, seven of which are along Routes 28 and 44, which are state owned and maintained highways. The Town maintains one traffic signal, at the Four Corners, while the Massachusetts Highway Department maintains the other seven signals.
- Aside from the existing sidewalk system, the Town does not have any dedicated bicycle or pedestrian facilities. An aggressive sidewalk plan and dedicated pedestrian and bicycle paths are future goals for the Town.
- The MBTA provides public transit service to the town of Middleborough via the Old Colony Middleborough/Lakeville commuter rail line and more than 20 percent of this station's users are Middleborough residents. The Greater Attleboro Taunton Regional Transit Authority also provides paratransit service to the town of Middleborough.
- Cut-through traffic on local residential streets does not appear to be a major concern of the Town; however there are several local roadways that are used to bypass traffic congestion in the downtown area and through Route 44 rotary. For the most part, the Town is well-served by the regional highway system allowing for convenient access to and from the town via state numbered arterial routes.
- Development plans for the Campanelli Industrial Park and Southpointe Corporate Center will require substantial off-site mitigation, including the upgrading of Route 28 north of the Middleborough Rotary. Future development along the Route 28 corridor should have access limited to right-in/right-out only.

- The reconstruction of Route 44 will greatly improve traffic operations through the Town of Middleborough. However, particular attention should be placed on the socio-economic impact of at-grade versus grade-separated intersections along the corridor.
- The Town needs to rework the language in the Transportation Bond Bill in order to work with MassHighway to improve the intersection of Route 28 with Route 105. Additional traffic associated with the recent parking lot expansion at the Lakeville/Middleborough commuter rail station has generated additional traffic through this location.
- The Town needs to formulate a strategy for installing sidewalks along heavily traveled pedestrian routes where sidewalks are currently not provided and all sidewalks be designed to meet state and federal accessibility requirements.
- As roadways and traffic signals are reconstructed throughout the Town, the design plans should accommodate bicyclists and pedestrians to encourage alternate modes of transportation.

4. Summary of Existing Conditions and Issues for the Future

From a circulation perspective, Middleborough has separate facilities for most transportation modes, including roads, public transportation services (commuter rail and paratransit service), and pedestrian facilities (sidewalks). Middleborough's roadway and rail circulation system reflect the traditional historical development of New England towns and villages. Typical of most New England communities, its roads meander through the community. Grid patterns are a rarity; there are virtually no straight roads. Key roads tend to connect Middleborough neighborhoods to one another and have been shaped by the original topography and wetland constraints of the community.

a. Major Streets and Highways

The town of Middleborough is well-served by a number of state and local highways that provide direct access through the town and to Interstate 495. The principal roadways that provide access to the town are described below. Descriptions of the roadways include a description of geometric conditions and adjacent land uses.

Interstate 495

Interstate 495 is a circumferential limited access highway around the Boston metropolitan area. Depending on location, the highway provides two or three lanes of travel in each direction. Access to Interstate 495 is provided via four partial cloverleaf interchanges in Middleborough. These on-/off-ramps, at exits 3-6, provide direct access to Route 28, Route 106, Route 18, and Route 44 respectively. Exit 2, Route 58, approximately a quarter mile from the Middleborough town line.

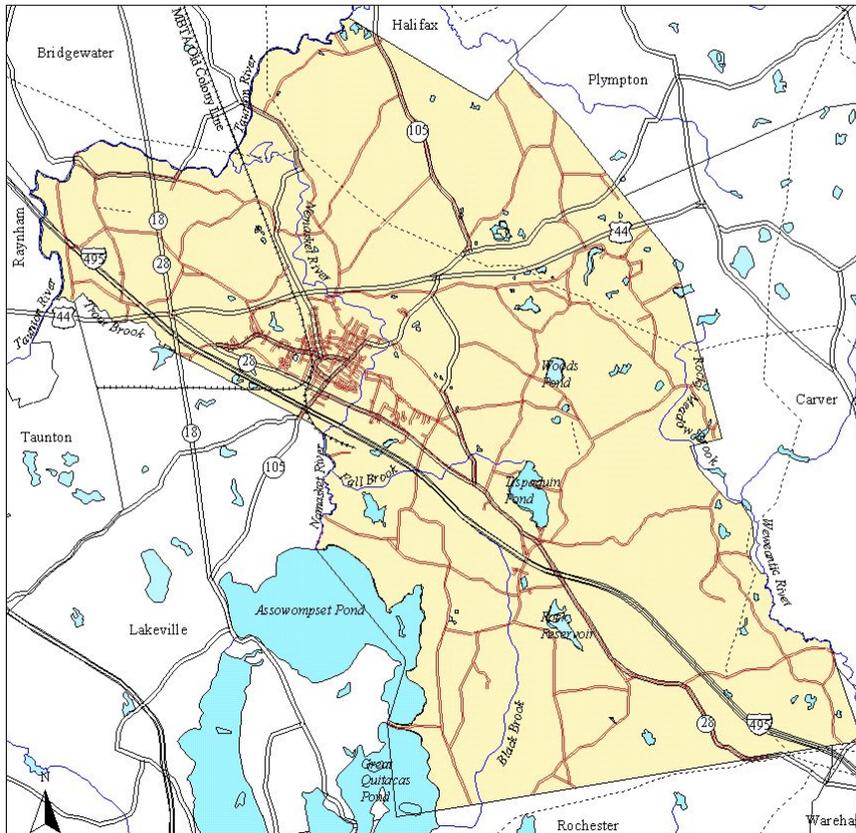
Route 105

Route 105 is a state highway that provides north-south access to Lakeville to the south and Bridgewater, Plympton and Halifax to the north. Route 105 provides one lane of travel in each direction with additional turning lanes allocated at major intersections and four travel lanes at the I-495 interchange into Lakeville. Route 105 provides access to the Middleborough/ Lakeville commuter rail station, located just south of the on-/off-ramps to I-495. The posted speed limit on Route 105 varies between 45 miles per hour and 25 miles per hour as the road approaches downtown Middleborough. Land use along Route 105 is a mix of office, retail, agriculture and residential uses. To the north, land use is rural/agriculture and the road serves as a major connector to Halifax, Plympton and Bridgewater.

Town of Middleborough Transportation Network

Middleborough Transportation Network

-  Major Roads
-  Local Roads
-  Rail Lines
-  Transmission Lines



10000 0 10000 Feet

Source: Executive Office of Environmental Affairs, MassGIS. Major roads, trains, MBTA and transmission lines.

Route 28

Route 28 is a regional arterial road that travels in a north-south direction between Brockton and Wareham. Further south, Route 28 travels adjacent to I-495, providing access to Cape Cod. Route 28 intersects Route 44 and Route 18 at the Middleborough Circle rotary. North of the rotary, Route 28 joins Route 18 as a state highway. Route 28 is the former main access route to Cape Cod and is still used as a secondary route when there is traffic congestion on I-495. Route 28 provides one lane of travel in each direction, with additional turning lanes at some of the major intersections. Land use along Route 28 is a mix of office, commercial, and residential uses.

b. Jurisdictions

According to the Bureau of Transportation Planning and Development (BTP&D) of the Executive Office of Transportation and Construction, as of January 2000, Middleborough had a total of 193.93 miles of public roads under the following jurisdictions:

- 142.74 miles - Town-owned;
- 38.87 - Massachusetts Highway Department-owned including:
 - Interstate 495,
 - Route 18/28, and
 - Route 44.
- 12.32 miles - privately-owned unaccepted by the Town. Because the Town does not assume maintenance of unaccepted roadways, its roadway maintenance costs are reduced. On the negative side, the quality of maintenance for privately-owned can be inconsistent and it is easier to manage and maintain storm drains and other public utilities (e. g., water, sewer, telephone, lights, cable, etc.) on Town-owned roads.

Because of its large land area of approximately 70 square miles, Middleborough has more local roadways than all but a few towns in southeastern Massachusetts. By comparison, the Town of Plymouth has 174.5 miles of town-owned roadways in an area of 97.57 square miles, and the Town of Yarmouth on Cape Cod has 151.86 miles of town-owned roadways in an area of 24.1 square miles.

There are many unpaved roads within the Town that are maintained and used as public ways. The Town does not have the funds to upgrade these roads to meet its design standards. These roads should be upgraded potentially through the use of betterments where the abutters are assessed the cost of the necessary improvements. However, many of the residents of these unpaved roadways have opposed the assessment of betterments in the past.

The vast majority of Middleborough roads are two-lane, two-way facilities with shoulders of varying widths. At the present time, less than five percent of the roads in Middleborough have 4 or more lanes. Four lane roads in Middleborough tend to be the

state highways and include Interstate 495 and portions of Route 28. One of the problems the Town often encounters is the lack of right-of-way layouts for many town roads. When the planning board approves a Form A plan, the plans for the roadway right-of-way generally say 'variable width'. The Town's layout width often varies from plan to plan. A minimum of 40 feet, but preferably 50 feet, of right-of-way should be specified if no prior layout exists. This will allow for future sidewalks and/or roadway widening. All Form A plans should also show existing pavement, monuments, stone walls and fence lines. Addressing this road layout problem should be a high priority for the Town.

c. Functional Classifications

Functional classification usually relates to how much access a road provides to adjacent land uses as opposed to its lane configuration and volume. The higher the functional classification, the more through traffic is served, the higher the design speed, and the more rigorous the geometric design requirements. Similarly, a lower functional classification usually implies that the roadway serves to provide direct access to adjacent land uses rather than to through traffic.

Typically, if a street serves 75 percent or more through traffic – i.e., motorists with no destination or origin along the route – it would be functionally classified as an *Arterial*. Similarly, if 25-75 percent of a street's volume is through traffic, it would be classified as a *Collector*. If less than 25 percent of its volume were through traffic, it would be classified as a *Local*. Various types of Arterials, Collectors, and Locals (e.g., minor, major, urban, rural, residential, commercial, etc.) exist throughout the Town.

Arterials tend to be wider and either partially or fully access-controlled. The design of Collectors represents the most significant design challenges because they serve both through and local access traffic components. Local roadways should typically be designed to encourage low speeds and more pedestrian-friendly environments. In terms of mileage, in most communities 5-10 percent of total street miles would be Arterials; 10-20 percent would be Collectors, and 65-85 percent would be Locals. In terms of volumes, however, the opposite would normally be true. Arterials would be expected to account for the vast majority of traffic volumes in a community; in Middleborough, Routes 18 and 28 are arterials. Collectors have a similar proportion of volume to mileage, and Locals represent 5-10 percent of total traffic in a community.

Freeways and cul-de-sacs best illustrate the typical range of functional classification. A freeway has full access control, exclusive of service areas; therefore it has 100 percent through traffic. On the other hand, 100 percent of a cul-de-sac's traffic has local destinations. Functional classifications are often further defined by the length of trips being served, anticipated traffic demands, and land uses being served. Typically, the longer the trips being served and the higher the traffic demands, the higher the functional classification. Some communities consider special classifications for Collectors and Locals that are designed to serve industrial, commercial, or institutional demands.

d. State Functional Classification System

The Commonwealth of Massachusetts Bureau of Transportation Planning & Development (BTP&D) has a functional classification system for the Town of Middleborough. The BTP&D functional classification system is generally based on definitions contained in the most recent edition of the American Association of State Highway and Transportation Officials (AASHTO) *A Policy on Geometric Design of Highways and Streets* and includes the functional types:

- Rural and Urban Interstates (56.76 lane miles);
- Rural and Urban Arterials (55.24 lane miles);
- Rural and Urban Collectors (78.87 lane miles); and
- Rural and Urban Local Roads (201.15 lane miles).

e. Capacities

Typically, the capacity of a roadway is defined as the maximum number of vehicles which can reasonably be expected to traverse a uniform section of a lane or highway during a given time period under prevailing roadway, traffic, and control conditions (Source: Highway Capacity Manual – Transportation Research Board, 2000 Edition).

As noted above, the capacity of a roadway is not its maximum acceptable volume as reflected in the term “level of service” which is commonly used to characterize how well a facility is operating. The designation of maximum acceptable volumes and the computation of levels of service is a far more complicated and controversial subject that is not addressed by the issue of capacity.

Put simply, capacity is the physical ability of a facility to accommodate vehicles, usually calculated for a one-hour interval. Roadway capacity is typically calculated based on travel lane and shoulder widths, grades, and the projected mix of vehicles expected on a facility (i.e., trucks, buses, automobiles, and bicycles). More often than not, within a rural or suburban context such as Middleborough, the true carrying capacity of a roadway is controlled by its intersections, rather than its individual unconstrained capacity. The amount of conflicting volumes, turning movements expected and the type of traffic control (i.e., signals, stop signs, etc.) control capacity at intersections. For example, while a single freeway lane may be able to process from 1,900-2,000 passenger cars per hour at capacity, a single lane of a two lane roadway in a suburban context, such as Middleborough, is typically able to carry no more than 1,400 passenger cars per hour due to driveways at adjacent land uses and delays brought about by intersection traffic signals.

Therefore, the capacity of most two-way, two-lane roads in the Town is estimated at 2,400-2,800 passenger cars per hour, assuming a 50-50 split in traffic demands. The capacity of four lane facilities, again assuming a 50-50 split in traffic demands and a typical 55-45 directional lane distribution would typically be 4,400-4,600 passenger cars per hour. For purposes of detailed analysis of individual roadways, capacities must be computed at individual intersection locations. Figure 1 illustrates the volume/capacity ratio (v/c) for key roadways in the Town. All of the congested roadways (v/c greater than 0.85) are located in the western part of the Town.

f. Conditions

With the Town of Middleborough's assistance, the Southeast Regional Planning & Economic Development District (SRPEDD) prepares and regularly updates a *Regional Pavement Management Program – Survey Results of the Federal Aid Highway System for Middleborough*. The latest version of this report, which highlights pavement conditions on all of the Town's roadways, is dated November 1997. From the Report, the 67.92 miles of Federal Aid roadways located in Middleborough were rated as follows:

- Excellent condition: 16.48 miles (24.3%)
- Good condition: 33.68 miles (49.4%)
- Fair condition: 16.51 miles (24.3%)
- Poor condition: 1.25 miles (2.0%)

Note that this does not include the 126 miles of non Federal-Aid roadways that need to be maintained using Town funds. The Town rates local roadways on a point system annually to prepare a five-year pavement maintenance program.

SRPEDD also prepares a regional assessment of the most dangerous roads and intersections in Southeastern Massachusetts. The 100 most dangerous intersections in Southeastern Massachusetts are ranked from 1 to 100 with 1 being the worst. The study indicates that only two of the 100 intersections identified were in the town of Middleborough. These are the intersections of Route 28 with Wood Road (7th) and Route 28 with Route 105 (27th). The study states that improvements are planned for the intersection of Route 28 with Wood Street, but are on hold at the intersection of Route 28 at Route 105.

MassHighway was contacted to determine the status of the improvements at the intersection of Route 28 with Wood Street. MassHighway stated that this location does not register as one of their 1,000 most dangerous intersections. Furthermore, no intersections in Middleborough register on the 1,000 most dangerous list. MassHighway's project review committee has indicated that the project review committee (PRC) has approved work at this intersection but no work has been done to date.

The one hundred most dangerous roads in Southeastern Massachusetts are ranked in the same manner. For the 100 most dangerous roads, only three were located in Middleborough. These include Route 44 (44th), East Grove Street – Route 28 (57th), and South Main Street – Route 105 (67th). The report indicates that at the time of the assessment, a study was underway for Route 44. The Route 44 corridor in Middleborough is under study by MassHighway. A Draft Environmental Impact Report summarizing recent accident history with proposed improvements to enhance safety is due for public review in the spring of 2001.

The Middleborough Town planner identified the following roads as having dangerous layouts and curves: Rocky Meadow Street, Purchase Street, Summer Street, Plymouth Street, and Marion Road. The Town planner believes these roads should be remedied before abutting land is developed.

State aid funding from MassHighway (known as Chapter 90 funds) has been reduced by 66 percent during the past two years, and the Town is losing ground on road repairs. The Town will need to seek alternative funding sources for future road repairs. The promotion of commercial/light industrial development projects is one possible way to provide increased revenue to the Town, some of which could be used for needed roadway improvements.

MHD Bridge Closures

The Town of Middleborough has four bridges that have been closed and are in need of reconstruction. These bridges are located on Auburn Street, Vaughan Street, Plymouth Street, and Nemasket Street. Detours due to the closures are problematic for residents, causing changes in traffic circulation patterns and increased emergency response times. Funding for these projects is uncertain due to the reduction in state aid for local roadways and bridges. The Auburn Street bridge has been designed and permitted and is awaiting state funding. The Vaughan Street bridge is expected to be advertised for construction in 2001. The Plymouth Street bridge is in the preliminary design phase under the MassHighway Footprint Bridge program and the Nemasket Street bridge is scheduled to be reconstructed in 2001. Once these bridges are re-opened to traffic, the Town should monitor traffic volumes on local roadways to determine if there are significant changes in traffic circulation patterns.

Traffic Control Devices

A map has been prepared to summarize the locations of existing traffic signals. Most intersections with major streets are two-way stop sign controlled with the minor streets yielding to the major streets. There are a total of eight fully functioning traffic signals located in the Town of Middleborough. The majority of traffic signals are located along State Routes 44 and 28/18. With the exception of the traffic signal at the intersection of Route 105 and Centre Street (Four Corners), which is maintained by the Town of Middleborough, MassHighway maintains all traffic signals. Three other locations have flashing beacons. *Table E1* provides the most recent list of the signal locations.

Table E1: Traffic Control Signals, Town Jurisdiction

Location	Type
Route 105 @ Centre Street (Four Corners)	Full operation
State Jurisdiction	
Location	Type
Route 44 @ Old Center Street	Full operation
Route 44 @ Everett Street	Full operation
Route 44 @ Plymouth Street	Full operation
Route 44 @ Route 105	Full operation
Route 28 @ Taunton Street	Full operation
Route 28/18 @ Plymouth Street	Full operation
Route 28 @ Route 105	Full operation
Route 105 north of Route 44	Flashing
Wood Street @ Route 28	Flashing
At Rotary 5 Blinking @ Circle	Flashing

Source: BSC – Field Visit/Middleborough Gas and Electric Department

New traffic signals have been studied and proposed at several locations on roadways that experience peak period congestion. These include Route 105 at the I-495 northbound and southbound ramps and at Middleborough Crossing off Route 28 where MassHighway has opposed signalization plans. In addition, new signals have been proposed near Plymouth Savings on Route 18/28 and at the South Point Corporate Center off Route 44 near Lakeville town line.

Average Weekday Traffic Volumes

The traffic volumes of many of the major roads traversing Middleborough have been counted in recent years. *Table E2* summarizes historical count data on a selection of major streets. While the degree of traffic growth varies from location to location, overall traffic appears to have grown at a rate of approximately five percent per year between 1989 and 1997.

Table E2: Middleborough Roadway Average Daily Traffic Volumes

Route/Street	Location	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Center St.	East of 28/18		5,437									1,800
Clark St.	East of Rt. 105								3,400			
Courtland St.	Btwn Elm/Stat.		2,949			3,800			5,200			2,900
Everett St.	North of Rt. 44	1,917			1,700		1,900			2,300	1,900	
Harding St.	West of I-495			16,000				18,000			19,300	
Route 18	@ Bridgew. TL					10,000						
Route 18	North of I-495		9,499			10,000					12,200	
Route 18/28	@ Bridgew. TL		9,503								4,800	
Route 28	@ Roch. T. L.	3,013			3,100			3,600				
Route 28	North of I-495	5,400		6,000				5,500				
Route 28	N. of Taunton St.	14,756			15,000			14,000			13,600	
Route 28	North of Wood					12,800			12,200			
Route 28	@ Nemasquet Riv.			11,000								
Route 28	South of I-495	5,400										
Route 28	South of Smith			4,800								
Route 28	South of Wood								9,100			
Route 28	South of Wood					7,500						
Route 44	West of I-495	12,130										
Route 105	@ Halifax T. L.						1,400					
Route 105	@ Lakeville T.			9,500			8,700			20,000		
Route 105	S. of Jnts. 28	17,750										
Route 105	S. of . I-495								13,400			
Route 105	West of Wood		4,165			4,200			4,200			4,900
Route I-495	@ Rochester T.	28,398		28,000	30,000		32,000	29,000		27,800	33,200	
Route I-495	Btwn. 28&105		30,426	34,000		31,000	36,000		32,800	33,100		38,900
Route I-495	Btwn. 44&18		31,487			34,000			35,100			42,800
Route I-495	North of Rt. 105	29,892			36,000			43,000			33,800	
Vernon Street	Bt.					640						
Walnut Street	W. of Miller St.						450					
Wareham St.	N. of Rt. 28			2,100				2,300				
West Street	Bt. Lane/West			1,300		1,400						
Wood Street	E. of Rt. 28					5,900			6,100			
Wood Street	S. of Rt. 105		1,942			2,200			3,100			
Wood Street	W. of Rt. 28					2,300			2,500			2,400

Source: Massachusetts Highway Department

Public Transportation Services

The MBTA provides commuter rail service between South Station and the town of Middleborough on the Old Colony Commuter rail line. The Middleborough/Lakeville commuter rail station is located off Route 105, one intersection south of the Route 495/Route 105 interchange. The parking facilities at this location accommodate 894 vehicles. Field observations indicate that the parking at this location is near capacity, primarily because it is the last station on the Old Colony/Middleborough commuter rail line. Future extensions of commuter rail service to Fall River and New Bedford may reduce demand for parking at this location.

SRPEDD conducted a survey for the Lakeville commuter rail station on March 22, 2000. Approximately 21 percent of the users of the Lakeville station are Middleborough residents who use the rail service on a daily basis primarily for commuting to work. There were many comments in the survey that revolved around the inadequate parking situation at the station. There were suggestions for more frequent train service and bus connections to the station.

The recent parking lot expansion has resulted in a positive impact due to automobile trips being diverted to transit; however, attention should be focused on the impacts at the intersections on Route 105 at the I-495 ramps and Route 28. These intersections, located just north of the commuter rail station will be most directly impacted by increased transit usage.

Over the long term, the Old Colony Middleborough line might be extended to Buzzards Bay and Cape Cod. This depends on federal and state funding for public transportation projects. The extension of rail service would have a positive impact on reducing demand for parking at the Lakeville station.

The Greater Attleboro Taunton Regional Transit Authority (GATRТА) provides paratransit service to the town of Middleborough. Paratransit service is available for persons with disabilities, and persons 60+ years in age. Service is available weekdays from 6:00 A. M. to 6:30 P. M., and on Saturdays from 9:00 A. M. to 5:00 P. M. Paratransit fares for persons with disabilities is \$1. 00. Operating subsidies for GATRТА need to be maintained to continue or expand public transportation services.

As use of the commuter rail increases and the population and employment density on the west section of Middleborough increases, a dialogue should begin between Town officials to explore the implementation of bus service connecting Middleborough Center, the major employment centers in Middleborough and the MBTA commuter rail station in Lakeville.

Freight Transportation

There is an active freight rail line parallel to Everett Street that provides freight services to businesses in Middleborough and other communities to the north. A goal of the Town is to continue this freight service to promote economic development and reduce reliance on truck trips for freight movement on local streets.

Pedestrian Circulation

Most of the pedestrian walkways in Middleborough are bituminous concrete sidewalks. Sidewalks in the downtown area for the most part are in good condition, with wheel chair ramps provided at intersections. In fact, a Downtown Streetscape Master Plan was completed in 1998 that outlined recommended improvements for gateways, pedestrian safety, sidewalks, lighting, street furniture, signage and parking. Outside the immediate downtown area, sidewalks are narrow, in poor condition and not always in compliance with the requirements of the Americans with Disabilities Act (ADA). The implementation of a more aggressive sidewalk improvement plan is one of the goals of the Town, particularly in the vicinity of the schools where students walk to and from local schools.

The Town has identified the following specific locations where sidewalks should be constructed:

- Route 105 to MBTA Station - When signals and turning lanes are designed for the Route 495 ramps, Route 28 and the north site drive of the adjacent business park, it should be required that adequate sidewalks be provided along Route 105, particularly on the east side of the road providing a direct link from downtown Middleborough to encourage pedestrian use of the MBTA station.
- Route 28 (East Grove Street) from Route 105 to Wood Street - The south side of Route 28 has no sidewalks although that is where the High School, YMCA and commercial stores and restaurants are located. As a result students and others commonly walk in the road rather than crossing to the sidewalk and re-crossing back. HNTB was contracted to perform an evaluation of the need for a sidewalk, difficulty in building one and the steps needed to be taken. Since they never completed the project and money remains to complete the work.
- Anderson Avenue from Old Center Street to dead-end near Stop and Shop - There are several multi-family housing units off Anderson Avenue as well as some of the Town's smallest lots and densest residential areas. Many people without automobiles often walk to Stop and Shop and other stores in that area and must walk along the road to get there.

Additional sidewalk paving needs exist at the following locations:

- Route 28 (West Grove Street) from West Street to Anderson Avenue
- East Main Street from Montello Street to Wood Street
- Wood Street from Plympton Street to the Middle School
- Plymouth Street from East Main Street to the Carver Town Line
- Spring Street from North Street to Oliver Mill Park
- Route 105 (Thompson Street) from Plympton Street to Halifax Line

Currently, there are no dedicated pedestrian walkways in the town. The Town had applied for federal grant money to construct a bicycle/walking trail along Route 105. The application was rejected due in part to its close proximity of the Miles Standish State Forest, which contains a 23-mile bicycle route. The Town planner has had contact with HERD, an organization of equestrians. According to the Town planner, it is important for HERD to work with the Town to map existing trails so that when a subdivision, cluster development, etc., is proposed, the Planning Board knows the significance of a particular trail and is in the position to negotiate for trail preservation and public access.

A basic assumption for any successful pedestrian plan is to accommodate all pedestrians including people with walking, sight, auditory and other disabilities. This is the goal of the Americans with Disabilities Act and the Massachusetts Architectural Access Board. Serving these populations will make walking in Middleborough better and safer for everyone.

Bicycle Circulation

The Town of Middleborough does not have any dedicated bicycle paths or trails. Conversations with representatives from the Department of Public Works indicate that the Town has explored construction of a bicycle/pedestrian trail, but without success in obtaining funding for the project. The Town Highway Superintendent believes a plan for bicycle paths, if and when funding is approved, should be a goal for the Town.

Massachusetts General Law Chapter 87 of the Acts of 1996 calls for the accommodation of pedestrians and bicyclists in all MassHighway funded projects. As roadways throughout the town are reconstructed and new traffic signals are put into operation, the needs of bicyclists must be considered in the design phase. Wider shoulders, bicycle lanes and bicycle detectors at the approaches to traffic signals will encourage the use of the bicycle as an alternative mode of travel in Middleborough. This bicycle accommodation policy will be an integral element of the redesign of Route 44.

On-Street Parking

On-street parking is permitted throughout most of downtown Middleborough. On-street parking is allowed on the north and south sides of Center Street, as well as the east and

west side of North and South Main Street. The Town restricts overnight on-street parking between November and April. The lack of on-street parking in the more densely developed neighborhoods, and the fact that residents in multi-family houses have more cars than in the past, has resulted in individuals parking on the curbs or entirely off the road and onto sidewalks. The Downtown Streetscape Master Plan recommended improvements to off-street parking, which might alleviate some of the on-street parking problems. In the lower density areas of Middleborough, which include the small village centers, parking is not considered to be a problem because there is very little on-street parking.

Residential Neighborhood Traffic Controls

The regional highway network in Middleborough provides excellent access to Interstate 495 as well as major employment centers within the Town. The Middleborough police department was contacted to determine whether there is local concern regarding cut-through traffic on local roadways during peak commuting hours. The police department indicated that there is not a major problem currently experienced within the town. Several local roadways, however, have been identified as potential problems for cut through traffic.

- Wood Street, which is used as a shortcut between Route 44 and Route 28 and Bridge Street to access the Lakeville MBTA commuter rail station to avoid traffic congestion along Main Street in the downtown area
- Everett Street/Plymouth Street, which is used as a bypass to the congested Route 44 rotary between Route 44 and Routes 18/28 (Bedford Street)

Other Traffic Control

The Middleborough police department was contacted to determine which, if any, intersections in the Town required police detail to control traffic operations during peak commuting hours. The police department identified two intersections where police control is used: the intersection of Route 28 with Fairview Street and the intersection of Route 28 with Merchant's Way. Both locations require police traffic control due to school related traffic in the immediate area.

Scenic Roads

To preserve the rural character of the Town, a number of local roadways have been identified as scenic roads by Town meeting actions. The goal is to preserve and enhance the unique characteristics of these roadways to protect the Town's heritage. The following have been designated scenic roads:

- Chestnut Street from Tispaquin Street east along Chestnut Street to Purchase Street

- Purchase Street from Chestnut Street to Faye Avenue
- Long Point Road from Marion Road to the Lakeville Town Line
- Marion Road from Cherry Street to the Rochester Town Line
- Old Center Street from Route 28 to Vernon Street
- Plymouth Street from Summer Street to Taunton River (Bridgewater Town Line)
- Plymouth Street from Route 44 to Summer Street
- Tispaquin Street from Route 28 to Thomas Street
- Pleasant Street from Plymouth Street to Frontage Road
- Summer Street from Plymouth Street to Murdock Street

Transportation Improvement Projects

Future expansion of highway and roadway capacity and expanded public transportation service should be planned in accordance with regional and local growth management goals. Capacity of the transportation network should be used to improve the community's quality of life and serve concentrated employment center and housing development. Capacity should not be increased in areas designated for low-density development. With these goals in mind, the following is a description of proposed transportation improvement projects in the Town.

Reconstruction of Route 44

The Massachusetts Highway Department (MHD) has been planning the reconstruction of Route 44 from Route 58 in Carver to Route 24 in Raynham. The section in Middleborough to be improved exists as a 2-lane highway, with access limited through lighted intersections at four crossing streets and the Route 28/18 rotary. One overpass at Carmel Street provides no access onto Route 44. Improvements to this section would allow completion of the full upgrade of Route 44 to Route 24. The eastern portion of Route 44 is currently under construction from Route 3 in Plymouth to Route 58. The Final EIS/R for the latter section was completed in June 1986. The EIR for the piece through Middleborough is proposed to be completed in 2001.

The state's design concept is a four-lane, median-divided, limited-access highway to provide increased east-west regional traffic flow. The eastern-most section of the roadway is proposed to be separated by grade; either above or below grade so that either Route 44 or the intersecting streets would allow free passage. Consequently, there would be no intersecting traffic at local streets except where on and off ramps enter. This would be the case at Route 105/Plympton Street where an interchange is proposed.

The Town is now examining options regarding the design of portions of this alignment. Specifically, it is considering what type of design and access should be provided in the intermediate section of Route 44 proceeding westerly from the Route 105 intersection through to the rotary where there are currently three intersections with traffic lights at Old Center, Everett, and Plymouth Streets. The alternatives being considered for this stretch provide different access and grade options for the intersections. The state has considered

two different alternatives; one that maintains the lighted intersections and one that eliminates all three intersections in favor of one highway interchange at Everett Street. The MHD informed the Town that it currently favors maintaining all three intersections as lighted crossings based on the reasoning that it would reduce construction costs and wetland impacts, both of which would be greater with the limited-access option of the interchange at Everett Street.

The Town is considering the socio-economic impacts of several alternatives, so that it can establish a clear preference that can be advocated with the state. The alternatives include the following:

- At-Grade – This alternative would consist of a general widening of Route 44 within the area, with additional widening of signalized intersections in several key locations (Everett, Plymouth, Old Center Street).
- Grade Separated Alternative A – (“with connector”) Grade separated highway with an interchange at Everett Street and an at-grade connector between the interchange and Plymouth Street along the northern edge of the Route 44 right-of-way, with overpasses at Old Center and Plymouth Street.
- Grade Separated Alternative B – (“no connector”) Grade separated highway with an interchange at Everett Street and no connector between the interchange and Plymouth Street along the northern edge of the Route 44 right-of-way, with overpasses at Old Center and Plymouth Street.
- Grade Separated Alternative C – (“no interchange”) Grade separated highway without interchanges at Old Center, Everett or Plymouth Street.

The Town expects to conclude the evaluation of these alternatives and establish a position during 2001. The current schedule for the Route 44 Improvements Project – Middleborough is as follows:

- Issuance of Draft EIR – June 2001
- Issuance of Final EIR – Fall 2002
- Completion of 25% Design Submission – Spring 2003
- Completion of Final Design – 2006

This means that construction would not begin until sometime in 2007, assuming funding is available at that time. Interviews with MassHighway personnel indicate that the expected start time for the project will not be until 2010 or beyond as the third phase of the total project. Currently, the State is preparing to construct the eastern section of the project from Route 3 in Plymouth to the Town of Carver. The next section will be Route 44 in Taunton, which is an at-grade section. Last will be the section through Middleborough.

Route 18/28

A transportation master plan was prepared for Bedford Street (Route 18/28) in November of 1999. The report focused on the transportation needs of Bedford Street between the Middleborough Rotary and Old Center Street. The report offers the following recommendations:

- Bedford Street should be widened to two travel lanes within each direction, median separation, inside and outside shoulders, and sidewalks between the rotary and Leona Drive/Campanelli Drive.
- Between Leona/Campanelli Drive and Old Center Street a two-lane configuration should be maintained with increased shoulder widths and sidewalks.
- Left and right turn pockets should be provided on Bedford Street at the intersections with Leona Drive/Campanelli Drive and Commerce Boulevard. (Based on 2005 projected traffic volumes, these intersections will meet peak hour warrants for signalization).
- The intersection of Bedford Street with Old Center Street should be monitored as additional development occurs to determine the point when signalization is warranted.

Additional development on the few in-lots on Bedford Street should be limited to right turns only.

Leona Drive/Commerce Boulevard Signalization

As a result of increased traffic volumes generated by development in the vicinity of the Middleborough Rotary to include projects on Leona/Campanelli Drive and Commerce Boulevard, the Town of Middleborough has written a letter to MassHighway requesting that a new signal be installed at in the intersection of Bedford Street (Route 18/28) with Leona/Campanelli Drive and Commerce Boulevard. The Town is awaiting funding approval for the project.

Southpointe Corporate Center Signalization

As part of the mitigation for the expansion of the Southpointe Corporate Center, signalization of the intersection of the site drive with Route 44 has been proposed. According to the Town planner, there is concern among planning board members that the Mill Street intersection, an adjacent existing Town road, should be signalized. While this information may be upgraded as part of the Route 44 improvements project, there may be a need for interim improvements.

Route 105/Route 28

The Middleborough Planning Board requested that Lakeville Corporate Park, in 1994, analyze and provide potential mitigation to the intersection of Route 28 with Route 105. The redesign was to be done by the Lakeville Corporate Park developer (100% PS & E), and the state would fund the construction.

The developer's consultant prepared a mitigation plan that the Town deemed unacceptable due to widening of South Main Street (*Rizzo Associates, January 28, 1994*). The Middleborough Board of Selectmen and Planning Board hired their own consultant to evaluate the design and come up with an alternative design (*HNTB, January 13, 1995*).

To prevent the widening of South Main Street without Middleborough's approval, the Selectman and Town Manager asked the State Legislative Delegation to insert language into the 1994 Transportation Bond Bill prohibiting the Massachusetts Highway Department from doing any work on this project. Since the adoption of this legislation, MassHighway has been unwilling to work on or comment on a redesign.

In June of 1995, the planning board entered into a contract with MassHighway to lay out a suitable option and MassHighway required more analysis. In December of 1999, the Planning Board, Town Planner, Town Manger, and Board of Selectmen met with MassHighway and were told that the option is viable with respect to current traffic volumes. MassHighway agreed to take the project over if the Town took it through 25% design phase. The Town planner has expressed the need to remove or modify transportation bond bill language so MassHighway will work on this intersection.

Route 495/Route 105 Interchange

The MBTA/Lakeville Corporate Park has not designed or installed signals as required by the Section 61 Finding for the project under the Massachusetts Environmental Policy Act. As an interim measure, police details were to be hired to control the peak AM and PM traffic. However, conversations with the Middleborough police department indicate that a police detail is not used at this location.

Middleborough Crossing Shopping Center/Burkland School Complex/Route 28
A Section 61 Finding under the Massachusetts Environmental Policy Act for the Shopping Center required that a traffic signal be installed when traffic volumes become high enough for the signal to be warranted. However, the warrant status is unclear according to MassHighway because the length of time from the Section 61 Finding to now is so great that the developer should no longer be held responsible.

Wood Street/Route 28 Signalization

MassHighway has received approval from their project review committee (PRC) to look at possible improvements at this location. However, this intersection is not considered

one of the 1,000 most dangerous intersections statewide according to MassHighway and is unlikely to be funded because of an abundance of higher priority projects. While the project is considered active by MassHighway, no work is currently being done.

Route 105 Improvements

The Town is attempting to initiate the reconstruction of Route 105 through the Town. This reconstruction, which is dependent on the availability of project funding, would occur in three phases: from the Lakeville town line to Four Corners; from Four Corners to Route 44; and from Route 44 to the Halifax town line. With the current status of state aid funding, this project will take longer to complete.

Future Development

A number of future development projects have been proposed or are underway in Middleborough and surrounding towns that will impact traffic in the Town. These developments, when complete, will substantially increase traffic along certain segments of the local roadway network.

Over ten million square feet of gross floor area of commercial and industrial development has been proposed in recent years which includes Campanelli Industrial Park, Middleborough Park, Ocean Spray, Raynham Woods, Lakeport Park, Great Ponds Industrial Park, Great Ponds Industrial Park, Southpointe Industrial Park, Riverside Park and Middleborough Crossing among the most significant. These development projects are projected to add thousands of new vehicle trips to the regional and local roadway network during the peak hours. These increases will have to be evaluated as to their specific impacts on each segment of roadway through the environmental review and site plan approval processes.

5. Traffic and Circulation Alternatives

The residents of Middleborough rely on their private vehicles to travel on the local roadway system and regional highway network to meet their primary transportation needs. Other than new commercial and residential subdivision roadways, there has been little change in the roadway system in the past 20 years. Since the construction of I-495 and the Old Colony Middleborough railroad line, regional transportation access has improved resulting increased pressure for land development that brings an increase in travel demand. While most of Middleborough's transportation system is adequate to accommodate current demands, there are locations in town that experience significant delays during peak periods, which will be exacerbated by future land development.

Future development will generate more vehicle trips on local roadways. In the downtown area and in densely developed residential neighborhoods additional points of conflict between pedestrians and vehicles may be created. While commercial development on the

western part of town will create more problems during the morning and evening peak commuter hours, new residential development in other part of town will result in more off-peak and weekend traffic to schools, shopping areas and the Town's recreation facilities. An increase in residential population will also place more demands for parts of the transportation network used for bicycling, jogging, hiking or horseback riding. Based on these findings, the following recommended actions have been identified to help meet the future needs of the Town's transportation system for the next generation.

Choice: Improve Traffic Safety Along Arterials

Both the Town of Middleborough and MassHighway have identified locations that experience high accident rates and warrant improvements through roadway widening and traffic signalization. First and foremost are the proposed improvements to the Route 44 corridor between the Carver Town Line and I-495, which is in the conceptual design and environmental review phase. Proposed improvements include a combination of grade separation and at-grade intersection improvements. The Route 28 corridor also needs the implementation of recommended transportation improvements because of recent and proposed commercial development projects. Route 105 between Route 28 and North Street needs to be reconstructed, and the Town has initiated the project, which needs support from MassHighway for funding.

Advantages: Improvements at the intersection of Route 28 and 44 will remove the bottleneck at the Middleborough Rotary Circle thereby reducing cut through traffic on local streets around the rotary.

Disadvantages: The proposed improvements must be approved and funded by MassHighway, which may have limited funds for making all the necessary improvements.

Route 44 Improvement Options

As noted, the Route 44 Improvement project as proposed by MassHighway is a 'Grade Separated' proposal from the east up to and including Route 105, after which it is an 'At-Grade' solution through the center of Middleborough including lighted intersections at Plymouth, Everett and Center Streets. The key alternatives to this proposal are as follows:

Choice: Grade Separated for the entire length of the proposed section from Route 105 to the interchange at Route 28/495.

Advantages: This alternative significantly increases the safety of the highway and reduces some of the potential noise impacts by eliminating the stopping, crossing, and turning movements that would occur at the proposed intersections similar to the existing conditions. This also allows safer and more frequent crossings on the local streets that cross under or over the highway.

Disadvantages: The Grade Separated alternative is significantly more expensive than the At Grade alternative, and requires a larger footprint for the fill used to raise the sections of road. Most significantly, it eliminates the options for turning and access onto or from the highway onto the roads it crosses, Plymouth, Everett and Center streets.

Choice: Grade Separated for the entire length of the proposed section from Route 105 to the interchange at Route 28/495, with an interchange at Everett Street.

Advantages: This option provides all of the safety and noise reductions in separating local and highway traffic, and the added option of the interchange at Everett provides additional access to the local streets which are connected to the town center and downtown commercial areas.

Disadvantages: This option does not provide access to the important recreational and historical resources and facilities at Plymouth Street; the Oliver Mill Park and related historical district and the KOA Campground.

Choice: Grade Separated for the entire length of the proposed section from Route 105 to the interchange at Route 28/495, with an interchange at Everett Street, and a returning access road that connects the interchange with Plymouth Street.

Advantages: This provides all of the safety and noise reductions of the separated highway with the added benefit of full connection to the most important local roads.

Disadvantages: This is the most costly of the options and will result in the greatest wetland impacts along with the road construction.

Choice: Provide Adequate Funding for Local Roadway Reconstruction

Since the state reduced local aid for roadway reconstruction projects, the Town has fallen behind in its ability to reconstruct and rehabilitate local roadways. Other sources of funding are needed in order for the Town to keep up with its five-year capital program for local street and sidewalk reconstruction. There are several options for making these improvements:

For general funds to be used for all types of road improvements, the promotion of commercial/light industrial development projects is one possible way to provide increased revenue to the Town, some of which could be used for the needed roadway improvements.

Betterments, development impact fees and local appropriations should be explored as funding options for the necessary maintenance projects.

For specific roads where development is proposed the Town has another option. Under State land use laws, and as supported by a State Supreme Court case (*Northland vs. Falmouth*), the Town may require the adjacent public roads to be improved before a connecting subdivision may be approved. Consequently, the Planning Board's determination of adequate road construction carries significant weight in the land use process.

Advantages: Betterments place the cost of construction on those property owners who will benefit most from the roadway improvements. For private roads, particularly with cul-de-sacs, the financial burden is clearly with the adjacent properties. Legal support for requirements for subdivision approvals from the Planning Board allows new development to be used to pay for public road improvements.

Disadvantages: When roads are used by a broader section of the community, such as on those roads classified as Collector roads and Local through roads, the broader population who utilize the sections should share the burden. Relying on development projects for making improvements does not allow a regularly scheduled list of projects to be completed.

Choice: Upgrade Roadways to Adequate Design Standards

There are a number of local streets that have narrow travel lanes and minimal or no shoulders that do not meet the recognized design standards for their functional use (minor arterial, collector or local roadways) or traffic volumes. In many cases there are no records of the existing right-of-way. As new development projects come before the Town for approval, an effort should be made to define the right-of-way and upgrade local streets in the vicinity of the project to meet design standards whenever possible. In addition, as local roadways are reconstructed they should be designed to meet their appropriate standards. Special consideration needs to be given to aesthetics, particularly of scenic roads, to maintain the Town's character.

Advantages: Legal support for requirements for subdivision approvals from the Planning Board allows new development to be used to pay for public road improvements.

Disadvantages: Relying on development projects for making improvements does not allow a regularly scheduled list of projects to be completed.

Choice: Filed Plans for Existing Rights of Way

One of the problems the Town often encounters is the lack of right-of-way layouts for many Town roads. When the planning board receives a 'Form A' subdivision plan, the plans for the roadway right-of-way generally say 'variable width' because the Town layout width often varies from plan to plan. A minimum of 40 feet, but preferably 50 feet, of right-of-way should be specified if no prior layout exists. This will allow for future

sidewalks and roadway widening. All 'Form A' plans should also show existing pavement, monuments, stonewalls and fence lines. Addressing this road layout problem should be a high priority for the Town.

Advantages: The continued development of the Town can be used as a way to provide additional base plans for the Town records.

Disadvantages: The Town records will only be expanded where new development occurs. The 'Form A' subdivisions do not allow the Planning Board to specify conditions of approval. Consequently, all standards for plan submittal must be included in the Town.

Subdivision Rules and Regulations.

Choice: Direct Commercial and Industrial Development to Areas with Adequate Access

With excellent access to I-495 at the interchanges in Middleborough there will be a growing demand for commercial and industrial development. Large-scale development projects should be located with access to the arterial roadways that have adequate capacity and are in the vicinity of these interchanges to avoid the need for investment in new roadways. This will also reduce the amount of traffic on local streets. The concentration of development will also make it easier to justify shuttle bus service to and from the commuter railroad station in Lakeville.

Advantages: Concentration of development, particularly with connections to public transit, greatly reduces the potential impacts on local services, while still providing the related tax revenues.

Disadvantages: Commercial development is dependent on the broader real estate and business markets.

Choice: Develop Curb Cut Controls on Arterials Roadways

The primary arterial roadways in Town (Route 44, Route 18, Route 28 and Route 105) have the primary function of moving through traffic and a secondary function of providing access to abutting land use to ensure that through traffic is not delayed, forcing motorists to seek alternate routes on local streets. The Town must ensure that appropriate speeds are maintained and that the number of conflicting movements is minimized. This can be accomplished by reducing the number of local intersecting streets and by controlling the number and location of curb cuts for private development projects along these key routes. SRPEDD has a model bylaw for curb cuts to better manage access to private development that should be modified and adopted to meet the Town's needs.

Advantages: A structural solution that does not create a burden on the Town for construction.

Disadvantages: The reduction in curb cuts allows an increase in vehicle speeds on the main road, which must then be controlled with local patrols.

Choice: Improve Pedestrian Environment in Downtown Area and Village Centers

The Town has made an effort to improve the pedestrian environment in the downtown area as part of an economic development strategy. As a follow up to the Downtown Streetscape Master Plan, project elements such as sidewalk improvements, street furnishings and off-street parking facilities are being funded to encourage more pedestrian traffic and a safer and more attractive pedestrian environment. Similarly, sidewalks in the village centers will be improved to encourage more walking. All improvements to sidewalks will be made to accommodate those individuals with disabilities in accordance with federal and state regulations.

Advantages: The improvement of the streetscape will support downtown businesses, which in turn adds a more stable source of tax revenues to the Town funds.

Disadvantages: The level of effort necessary to complete the downtown program reduces the level of funds that can be applied to other town wide projects during the period of construction.

Choice: Develop Multi-Purpose Path Systems

At the present time, there are no dedicated pedestrian or bicycle routes in Middleborough. Bicyclists and joggers share roadways with motor vehicles which can create safety problems. There are hiking and equestrian trails in some of the lower density parts of town but they are not linked together to form a unified system. The Town should map these paths and encourage their use and expansion of a multi-purpose path system that can be used by residents for recreation purposes such as hiking, biking or horseback riders. This path system should link the density populated and developed areas with the major public facilities and open space and recreation areas throughout the Town.

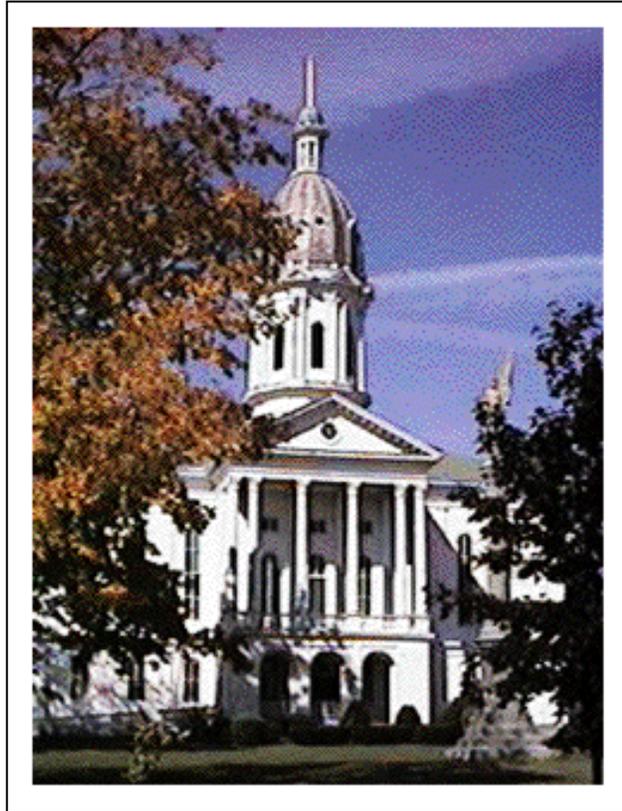
Advantages: Creation of paths provides options for accessing different areas of the community. It also provides an option for physical fitness and healthful exercise. Consequently, it can provide multiple benefits to the community and its quality of life.

Disadvantages: The creation of paths may require land acquisition or easements to complete the connections, which can be a financial burden. The other option is to complete connections along existing roads; however, this does not provide the same experience for the user and lowers the safety when there are potential conflicts with vehicles.

F. Public Services, Facilities, and Capital Investment

1. Introduction

This section focuses on the complex of physical plant that the Town of Middleborough is responsible for as a municipal entity. Almost all of the services the local government provides are accessed through the public facilities. People receive their permits at Town Hall, participate in programs in the meeting rooms, send their children to the schools, play in the designated recreation areas, or call on their emergency and maintenance services at the respective departmental facilities. The location and distribution of these facilities then becomes important to neighborhood accessibility, especially in a very large community such as Middleborough. These facilities are; however, the most significant capital costs to the Town.



2. Proposed Goals and Objectives for Services and Facilities

The following are some of the Goals and Objectives related to public services and facilities developed by the Steering Committee through visioning workshops and questionnaires.

Goal

Provide and maintain public facilities and infrastructure that adequately serve the needs of a growing population.

Specific Objectives:

Schools and Library:

- Support and maintain a high standard of excellence and opportunity in public education through the school system and the library.

Water:

- Define and implement improvements for delivery of water;
- Replace undersized lines and consider larger lines for South Middleborough and Pleasant Street.
- Clean post-1940's pipes to increase capacity.
- Add standpipes if necessary to maintain flows in East, South and North Middleborough.
- Install new water main from Route 18 to Cross Street on Old Center.
- Complete water main loops on Old Center Street between Route 18 and Pleasant Street, and on Cherry Street between Route 28 and Wareham Street.

Wastewater:

- Define and implement improvements for collection and treatment of wastewater;
- Increase the size of the Nemasket Interceptor for future growth.
- Determine and correct infiltration and inflow (I/I) problems in system.

Highways and Roads:

- Define and implement improvements for Town roads;
- Match the transportation infrastructure capacity with the needs of the Town's residents and businesses. Phase improvements to Route 44 in a way that minimizes impacts to the Town recognizing that Route 44 improvements will have a significant impact on regional transportation. Push for state (Mass. Highway Dept.) repairs and replacement of bridges.
- Maintain the public ways including the street trees, curbs, sidewalks and pavement.
Develop state-approved program for repaving and sidewalk repair.

Police and Fire Services:

- Expand emergency services as the Town grows;
- Determine locations and needs for substations for emergency response.

Solid Waste:

- Develop integrated waste management programs that reduce the cost of disposal;
- Encourage and develop innovative technologies for solid waste and wastewater management and recycling.
- Work cooperatively with abutting towns for regional solutions on recycling efforts.
- Make recycling more user friendly.
- Manage the Brook Street landfill as the unique and limited resource it represents.

3. Key Findings

The following general observations summarize the key findings of the review of public facilities and services within the Town:

The analysis of capital and program needs of the Town emphasizes several fundamental findings that should shape planning for Middleborough's capital program:

- The Town schools have been subject to some significant recent improvements. The next most significant changes are in the expansion of the kindergarten classes to full day classes, and the expansion of the internet technology that is connecting the schools to the Town population.
- Long range plans for the library have been developed by the Trustees to include expansion of services for an expanding population. This includes basic support such as parking at the Library to new facilities in the Library and in combination with other departments and in other locations in town.
- The separation of offices between Town Hall and the Town Hall annex requires the departments to work on maintaining connections between offices. In addition, the Annex has limited meeting space and is restricting the Health Department from needed expansion.
- Public utilities, including water and wastewater, require continual expansion, maintenance and upgrading. The costs of these improvements are some of the most significant costs for Town infrastructure.
- The most significant issue with the Town highways is that they are aging and require maintenance. However, state funds to the Town have been reduced by two-thirds from their previous levels.
- The Police Department is housed in the historic Peirce building. However, the building has reached its capacity for the Department's needs.
- The Fire Department is also in an antiquated structure which does not meet the standards necessary for the department's current equipment.
- A Public Service Facility has been considered as an answer to meet the needs of the Police, Fire, and Public Works departments for facilities to meet current needs and building code standards.
- The Town's solid waste management is meeting the Town's needs to provide the services and to control disposal costs.
- The Town Gas and Electric Department has maintained a long range plan for focusing on the core business and providing costs effective service to its customer base in Middleborough and

Lakeville.

- The Council on Aging is seeing the need to expand its services for an aging population. These services include both structural and program changes.
- The Town's MIS/GIS systems are seen as a key to the greater efficiency and better functioning of all Town departments.
- A Town Department Needs Survey was recently completed to determine the overall and prioritized needs of the Town departments. The results highlighted the public facilities and technology needs of the departments.

4. Review of Existing Conditions and Future Issues

The following information was obtained from the individual departments through interviews and from published reports they have prepared to determine their programs for meeting the Town's needs. The database includes the municipal buildings; schools, library, Town hall, public safety, and infrastructure; water, wastewater, and waste disposal.

a. Schools

The Town contracted for a study of the school system in 1995 from Educational Planning Services. The study looked at the existing and previous school facilities and made recommendations for improvements in both the school buildings and their organization. A comparison of the conditions reported at that time and as presently found are as follows:

- Lincoln D. Lynch – Formerly called the Union Street School, it was a pre-kindergarten and kindergarten school with an enrollment of 313 pupils. It was built in 1938 and is still located behind Town Hall. As of 1995, the facility was almost at maximum capacity. The seven kindergarten classes are now split between morning and afternoon sessions with 336 in the kindergarten (about 280 children), pre-school and special needs classes. As a result, if kindergarten classes were to be expanded to a full day class, the space would need to be doubled to accommodate the existing children. A pilot program with two of the fourteen kindergarten classes is underway for testing the full-day classes. The former Memorial Junior High School would provide the space needed for all kindergarten classes.
- School Street – This neighborhood school, built in 1907, had 147 students in grades 1 to 3 in 1994. The recommendation at that time was to overhaul the building. This overhaul has been completed and the six classes in the school now include about 138 children. Although considered a neighborhood school, not all the children in the school are from the immediate neighborhood, and not all children in the

neighborhood are going to the school. Instead, some neighborhood children are being bussed to the Mayflower/Burkland Schools at the option of their parents.

- Mayflower/Burkland – This complex of school buildings was designed for grades 1 to 6 but had an overflow count of 1680 students as of 1994. With the construction of the Nichols School (see below) the grades were limited to 1 to 5, with a subsequent reduction in the number of students. The Mayflower Elementary now holds 488 students in grades 1 and 2, while the Henry B. Burkland now has almost 900 students in grades 3, 4, and 5 - about 300 students fewer than in 1994.
- Memorial Junior High School – This was one of the older buildings which handled grades 7 and 8 with 555 students in 1994. The new John T. Nichols Junior Middle School has now replaced the Memorial. The Memorial Junior High is now being considered for other uses in combination with shifts in school priorities and other Town needs. This school is under consideration as the site for all fourteen kindergarten classes if they are expanded to full day classes. Other recommendations include its use as a community center. (The School Department is also being asked by some to consider multiple use of all its other resources as well.)
- John T. Nichols, Jr. School – In its first year of operation, 1999, this new school held 933 students. Additional land is available at the Nichols School property for another elementary school, which could provide most of the classroom space needed by the Town for the near-term future. However, no feasibility study has been launched to look at this option.
- Senior High School – This school was built in 1971 off of Route 28 for grades 9 to 12. It held 800 students in 1994. Calculations in 1995 were that the school would be sufficient to meet the needs of the projected student body up to the year 2005. Presently there are 913 students in the High School. Next year the number of students is expected to rise to 1050 to 1100, which is approximately the maximum. Thereafter, cohort projections show a drop in students over the following years. However, significant improvements are necessary at the High School for infrastructure upgrades, which will impact the school's/Town's capital project funds.

By 1994, six older schools had been closed: West Side, South Middleborough, Rock, Plymouth, DeMoranville, and Green. The last three being one-room school houses, they were believed to be completely out-dated for modern educational needs. Although active until the 1980's, these schools were deactivated in 1992. These schools were not proposed to be re-activated in that study. However, a suggestion was made in the last Master Plan, and more recent comments have been added, about the option of growing towards more neighborhood-oriented, elementary-level facilities such as the School Street School. The issue is framed by the fact that more centralized facilities provide efficiency in the initial capital costs and in delivery of services and maintenance, while the neighborhood schools create a stronger social connection within the neighborhood and reduce the need for transportation and busing. The experience at the School Street

School suggests that parents will make choices for the location of the children's schooling based on issues beyond just the proximity of the school. The unused buildings have some historic interest and should also be considered in other contexts.

Ideas and Issues for the Schools

The School Department sees a continued growth in the school age populations as new cohorts (age groups) fill the available spaces and continue to move through the grades. Last year, 59 new students entered the system. The estimate from the School Department's 1994 study was that there would be "explosive growth". As a consequence, the Town must look to future expansion and possibly the further distribution of schools within the community. Other issues include the sustainability of the existing facilities and the issue that there will be evermore demands on the schools system properties for other municipal needs.

One of the options currently being pursued is the consolidation of all of the kindergarten programs into a single school. The Memorial Jr. High School building is being considered for this initiative, and is being proposed for state fund sharing for renovation. If this project is approved by Town Meeting and if it achieves adequate town funding, then the alternative initiative to renovate the school as a community center would not occur.

A goal for the School Department is greater information transfer, allowed by hard wire and internet technology. This will allow the Department to provide to Town residents new options for such courses as computer-aided design and new capabilities for adult education. This concept is currently being developed with the assistance of the Town's management information systems. Under the Education Reform Acts of 1993, a three million dollar limit is also a concept fitting with the Library Department's plans, as discussed below.

b. Library

The library provides informational, cultural, and educational services for the community. The library provides a variety of library services even outside the library facilities, especially during the summer months. This past year, they brought books to the parks for children, and growth is continuing. During the first six months of 2000, total circulation was up 24 percent over the prior year.

The library recently completed a \$3.2 million renovation over a 6-year process. However, The Library Trustees feel the parking situation needs improvement. There is a designated public parking lot behind the police station across the street and several parking spaces along two streets that border the library property. A property (a former restaurant) opposite the library provides unsecured parking for users of the library now. The street and restaurant lots are full during peak days. The Trustees feel the present public lot is

too far away, and is not convenient for library users. The Trustees have proposed purchasing the restaurant lot to obtain the needed parking.

The Board of Library Trustees has also been developing a long-range plan (4-year period), which it completed last year. The library is looking at itself as a center for community activities and political discussion. New room is needed, but the existing library has already converted and expanded to capacity within the downtown property.

Computer literacy is a key part of the Trustee's goals. The library is currently supplied with nine internet stations and fourteen workstations.

The library statistics point to a new direction in information needs. In 1999 non-print borrowing was up 11 percent in total and 59 percent for children, but books were down 15 percent. The trend is clearly towards electronic forms of communication. To meet this need, the Library Department's budget of \$400,000 including all acquisitions has doubled in the last five years.

The Library is in the process of developing additional community activities in conjunction with the Parks Department after the success of the summer reading program. The library is also hoping to further develop electronic communications within the town as a whole to better supply information and resources.

Ideas and Issues for the Library

In the 2001-2004 Long Range Plan, the Library lists six areas of focus:

- Promoting the Library as an Intellectual Commons
- Promoting Cultural Awareness
- Providing access to information on Current Topics and Titles
- Promoting Lifelong Learning
- Offering Local History and Genealogical Resources
- Providing General Information on a broad array of topics.

The Library Board of Trustees believes that increases in the budget for operations and maintenance are needed, particularly for preventive maintenance to prevent large capital improvement costs in the future. The benefits of increased funding also would provide the ability to:

- Upgrade information technologies to current practices.
- Provide for additional summer programs.
- Improve maintenance and upkeep of the buildings.
- Providing parking at the Library.
- Allow for increased hours (Sunday afternoons, Monday mornings, weekdays to 9:00 PM and Saturday to 5:00 PM).
- Improve programs for children and adults.

- Cooperate with the Council on Aging to extend service to the home-bound.

Long-range plans for the Board of Trustees include:

- Open a library extension in the southern part of Middleborough.
- Participate in a community center with the Parks Department to better serve young adults.
- Work with the other Town departments to help the community understand and keep up with the latest technology, particularly internet communications.
- Develop the library as one of the resources for town history and culture.

c. Town Hall and Town Hall Annex

Town Hall was recently renovated with an historic accuracy. However, several residents have noted that the mature trees on the property were cut down without a general public hearing and have not been replaced.

No particular needs are seen at this time for further general office space. One exception is the Health Department, which has found its space to be inadequate. However, the government operations may be impacted in several ways because the Town offices are split between the Town Hall and Town Hall Annex space above the Shawmut Bank at Four Corners. This reportedly causes some problems for employees and the public. Both must move between the two buildings when contacting the Selectmen or Assessors and other Town departments, or when needing a meeting room. There are no public meeting rooms at the Annex. In addition, the employee parking for the offices in the Annex has now moved from the Town Hall lot to the public lots closer to the Annex. There is also a higher level of maintenance and management of the two buildings.

On the other hand, the Town Hall could not retain its historic accuracy if the Annex offices were installed there. In addition, the position of the Annex supports a level of activity from both employees and the public visitors for the businesses at Four Corners.

d. Water and Sewer Utilities

There is a municipal water supply and distribution system serving about 60 percent of the town, or about 12,000 people. The extension of the distribution system to serve the non-customers, including new developments and industrial customers, is restricted by the available water supply. There is a need to complete studies to confirm the ability to obtain new sources of groundwater in an attempt to meet the projected future demand for water service. There also is an on-going program of upgrading of the distribution system, when ancillary projects such as street reconstruction, gas main installation and available funding permits.

The wastewater collection system serves an estimated 30 percent of the population. Only projects in the Sewer System area are being served by the Town's wastewater collection system. This is due to the fact that the capacity in the Nemasket River to accept

biochemical oxygen demand, solids and copper, even with the high level of treatment currently being provided, is limited. Therefore, the remaining capacity in the Town's wastewater treatment system is reserved for commercial and industrial development in the service area and all current and proposed developments outside the Sewer System area must be designed and constructed with on-site treatment systems.

e. Water System

The original water system constructed to serve Middleborough was begun in 1885. The East Grove Street well was the first source of supply. Currently, there are 11 wells capable of supplying an estimated total of almost 3 MGD of water to the Town to meet the average day demand, which is approximately 1.82 MGD. The state-listed maximum day demand of 2.79 MGD is an amount equal to the greatest 24 hour demand for the year. The last comprehensive study of the Town's water system was completed in 1988. An updated study may be appropriate to describe the Town's latest long-range water plans. The availability of water and the extension of the water supply infrastructure is of particular importance in planning for the future, and several aspects of this issue should be emphasized:

- The Town does not have a recent Water Resources Survey to firmly establish the amount and quality of water that it may have as a long-term resource. Such a study is required as the foundation for future water supply policies, and the Town has initiated steps towards gaining this information. Until it is completed, however, the net effect of short-term actions to expand water supply cannot be fully evaluated.
- The Town has experienced significant water shortages in some development areas, particularly associated with the industrial and office park development in the DO district. Improvements in this area have required storage tanks, and there have been pressure drops in the surrounding areas. Supporting new development with water supply should take into account long-term strategies for infrastructure improvement that will have the best long-term benefit, so that the Town achieves cost effective actions.

The Town has an ongoing water exploration program. The Water Department has proposed development of two new wells, in addition to two additional storage facilities, a filtration system at Tispaquin, extensions to the distribution system to create hydraulic loops, and a new automated meter reading system. As of the beginning of last year, the total system improvement was estimated to cost \$35 million in capital funds.

In 1998, the Town lost a major water user, Ocean Spray, when the local facilities were closed. This made more water available for the remainder of the Town but at the same time created a loss of revenue to the Town. In 1999, water rates were increased to counter this loss of revenue and to build a surplus in order to fund improvements to the system.

Storage

The purpose of storage facilities within a water system is to be able to meet high demands for water such as summer demand and fires, as well as to assist in providing uniform water pressure throughout the system. There are currently two storage tanks within the Town's distribution system with a capacity of 6 million gallons of water. The tanks are being used to maintain pressures and meet peak demand flows.

The current storage tanks provide good control for the central portion of Town. However, additional storage is needed in the northeastern and southern sections of Middleborough. The addition of tanks at these locations would also improve the carrying capacity (fire flows and normal peak service) in all of the extremities of the distribution system.

Distribution

Several engineering studies conducted over the years have recommended replacement of the older 2-, 4-, and 6- inch water mains. Previous studies have shown low capacity flows in North Middleborough with extensions necessary to accommodate new construction in the Development Opportunity District. The available pressure in the eastern and southern portions of the town system needs to be improved. The Water Department has prioritized the improvements to first replace and upgrade water mains from the years 1885 to 1900, then to replace and upgrade water mains constructed in the years 1908 to 1953, and then to extend the distribution system to create hydraulic loops for better service.

Water Sources

The following table lists the current sources of water and their capacities. The Town is required to file a listing of these water supplies on forms as defined by the State Department of Environmental Protection.

*Table F1: Water Sources**

Pumping Facility	GPM	
East Grove Street	700	
Rock – 1	225	
Rock – 2	225	
East Main Street – 1	280	
Tispaquin – 1	230	
Tispaquin – 2	200	
Spruce Street	450	
Miller Street	550	
Cross Street	260	
East Main Street – 2	210	
<u>Plympton Street</u>	<u>100</u>	
Total Pumping Capacity	3,430	2.96 MGD

**Notes: Daily pumping capacity based on 16 hours a day pumping, except for the East Grove Station which is 8 hours pumping. GPM= gallons per minute; MGD = Million Gallons per Day.*

Iron and manganese are typical problems for the Southeast region of Massachusetts, and are found in the Town water supplies as well. Treatment is often necessary but they are not truly hazardous and there are easily engineered solutions to reduce the amounts of these problem elements.

Future Water Sites

Future well sites being considered include a site owned by the Town on Marion Road, known as the Wilbur site, which could produce water at about 250,000-300,000 gallons per day. A second site is being considered for acquisition off Vaughn Street, and is known as the egg farm or Wampanucket site. This latter site could potentially produce up to 500,000 gallons per day. Other sites for banking against future demand are also being considered by the Water Department. One such site is off of Cross Street.

The potential for obtaining water around the Assawompsett Pond complex will probably only be realized if one or more of the municipalities receiving water from the pond complex were to find another source and was willing to release their water rights. This option does not appear highly probable at this time.

Regulatory Protection for Water

Water resource protection regulations are required by the state before issuance of a permit to use a new water supply. The Department of Environmental Protection, Southeast Regional Office, reports that Middleborough's water resource protection zoning bylaws are acceptable. However, the Town's floor drain restriction regulations do not yet meet the state standard. In addition, all new wells must have a "Zone II" watershed designation, which then must be mapped and adopted by the Town.

f. Wastewater System

A wastewater collection system for Middleborough was first constructed in 1891 and has been expanded over the intervening years. In 1945, the Nemasket Interceptor was constructed to pick up flows from three sewer outfalls that were discharging directly into the Nemasket River. The idea of an interceptor is for ultimate discharge at a single location. At some point in the 1950's, a trickling filter treatment plant was constructed at approximately the same location as the existing treatment plant, which is located off Everett Street a short distance north of Route 44.

Collection

The current wastewater collection system consists of approximately 29 miles of sewers with 1,650 connections serving approximately 6,500 people or approximately one-third

of the current population. In 1967, the collection system was extended to the Ocean Spray processing plant. A further extension of the collection system was accomplished to the Susan Lane area in 1971. No further expansion of the collection system was made until 1989. At that time, the system was extended out West Grove Street to the rotary and north to serve the industrial parks. At the same time, it was extended to the south to serve the headquarters of Ocean Spray in Lakeville.

Regulation

In October 1988, the Board of Selectmen, acting as Sewer Commissioners, established a Sewer Connection and Extension Policy. That Policy declared that there would be no extensions outside of the existing sewer service area unless the Board declared a health emergency. If the projected flow is greater than 2000 GPD, the developer must comply with the following:

- The developer must apply to the Selectmen for a permit.
- The developer must present a plan for removing 2 gallons of infiltration or inflow (I/I), from the existing sewer system for every gallon projected to be discharged to the sewer system from his proposed connection. The projected flow from the proposed connection must be based on Title V rates.
- The proposed plan for the I/I removal must be approved, in writing by the Town's engineer. Any expense incurred by the Engineer in reviewing the plan should be paid by the developer.
- The physical removal of the I/I will be conducted by the developer in cooperation with the Sewer Department. The Town's Engineer will be kept informed of the progress with written reports.
- Upon completion of the removal work, the developer will certify in writing to the Selectmen that the removal was completed in accordance with the approved plan. The Town Manager will then issue the authorization for the connection to be made.

Treatment

The existing wastewater treatment facility provides an advanced (tertiary) form of treatment before the wastewater is discharged into the Nemasket River. While the treatment plant has a design capacity of 2,160,000 GPD, an average of only 1,300,000 GPD is treated at this facility. The plant, which went on line in August 1977, is ultimately limited not by its capacity, but by what the river can accept for Biochemical Oxygen Demand, (BOD) and total suspended solids, (TSS). The wastewater facility permit restricts the amount of BOD and TSS that can be discharged without deteriorating the stream. Therefore, any extension of the collection system is very limited and currently is

restricted to serve only the Development Opportunity District and the West Grove Street area. This is imposing effective land use restrictions in some areas and needs to be resolved through a revised sewer strategy that sets long term policies for the Town. The discharge permit for this treatment facility requires that the BOD and the TSS concentration of the effluent be no greater than 7 parts per million. The staff at the plant has been able to meet or exceed this requirement one hundred percent of the time.

Ideas and Issues for the Sewer System

There are several other issues that the Town and the Sewer Department has been engaged in solving.

There is a moratorium on sewer services outside the Development Opportunities District because the capacity for discharge into the Nemasket River is currently limited.

The Department has been working on reducing copper found within the effluent discharge before it reaches the river. In addition, the construction of new phosphorus removal facilities is a Department priority as a way to achieve a higher quality effluent from the treatment plant.

There is also an option for the Town to reduce unwanted flows into the sewer lines. This is by controlling Inflow and Infiltration (I/I). Inflow can come from incorrectly connected and overflowing storm drain lines, and infiltration can come from leaky sewer lines that allow water to enter the system. The Town has received a grant from the State to perform an I/I study and identify areas that can be improved and controlled. Typically, the improvements will more than offset their initial costs. The Town's Public Works managers have also suggested the creation of a Town-wide master drainage map and inspection of all storm water catch basins to identify and control these problems. This effort is important because as I/I is reduced, the option for additional flows from the commercial and industrial development in the sewer district is possible.

g. Police Services

The Police Department has several services it provides to the community. All of these activities are based from the old Peirce store beside the Town Center Fire Station. The Police Chief has noted that there was a larger police department staff twenty years ago than today, but that new programs, such as the need for a Juvenile Officer position are putting strains on the available space. The historic building must also be restored. However, because of the historic nature of the building, renovations may be extremely difficult. Consequently, the Police Chief would like to move from the Peirce building to a new location, made possible in conjunction with the development of other municipal buildings. This raises an issue as to what use could be made of the vacated buildings. (See discussion of combined municipal services building below.)

Ideas and Issues for the Police Department

As noted, the Police Department is looking for ways to better serve the Town, not only with positions such as a Juvenile Officer, but with programs to support the youth in after school programs and the elderly of Middleborough to increase their security and quality of life.

h. Fire Services

The Fire Department handles fire and medical emergencies. Ambulance service for medical emergencies is contracted with 'AMR', American Emergency Response. The Fire Department runs two stations covering the north and south regions of Middleborough. Emergency medical responses are more common than fire emergencies and usually require a shorter response time – that time from call in to appearance at the site.

- Town Center station with a six-person staff running on 24-hour shifts and handling seven pieces of equipment. Generally, emergency runs from the station are a maximum of 10 to 12 minutes. The problem with the station is that it was designed for a 10,000 per axle vehicle load on the station floor. However, with new equipment and the number of pieces, the real load is twice that amount at present. Further information on a new combined public services building is discussed below.
- South Middleborough is a single-person station, essentially acting as a substation, with four pieces of equipment, and is operated 24 hours a day, seven days a week. Response time from the station runs a maximum of 20 minutes, which is about the maximum recommended by the National Fire Prevention Association (NFPA). This station is within a complex of buildings that potentially define the modern-version of the historic South Middleborough village center, even though the district is bisected by Route 28.

Ideas and Issues for the Fire Department

For the wide area of the Town, the Fire Department has only been successful because of the low population density. However, growth and change will demand more services. The Fire Department estimates that it needs two substations for the Town's twenty-year plan because of population and building growth. One such area is north of Route 44. An option for a substation in East Middleborough is at Plympton and Thompson Streets, principally believed needed because of the current growth of elderly housing and because of the growth of other, actual and potential, housing units in the northeast corner and eastern side of town. Another option for expansion would be adjacent to the Campanelli Industrial Park at Ash and Bedford Streets. Both options would be one-person stations.

Other programs that would allow the Fire Department to help support the Town are:

- Fire prevention and public education programs to increase awareness and safety,
- Monitoring of the regulations and review of new development to ensure conformance,

i. Highway Department

The Highway Department is responsible for a variety of programs to maintain the safe and free passage of people through Middleborough. There are 300 miles of road under the Department's supervision, including 17 to 18 miles of dirt roads. However, the Department is not yet computerized.

One of the most significant impacts to the Department has resulted from the reduction in state funding under the Chapter 90 program. The previous funding of about \$1.2 million was down to \$412,000 in FY2000. With seven to eight bridges or culverts closed for repairs and significant improvements needed for drainage projects, the Department is faced with the need to obtain other funds for making the required improvements. One success has been the \$275,000 grant that was obtained for the storm water improvement project at Wareham Street. However, additional grants and local funds will be needed if the other improvements are to be completed on a timely basis.

Ideas and Issues for the Highway Department

The Highway Department has found a number of related issues with development that impact the Department's responsibilities. The need for strong regulatory standards for new subdivision roads, even involving the Highway Department in the design of new roads may be critical to ensuring that the roads can be accepted by the Town and managed in accordance with the other roadways. The concepts of clustering development and phased road construction were also recommended by the head of the Department.

Other recommendations include:

- Improving older roads to bring them up to current Town standards
- Acquiring drainage easements to accommodate new drainage projects
- Street tree programs to maintain and improve trees within the rights of way
- Constructing bicycle and hiking paths with grant funds
- Continuation of the sidewalk and street improvements in the Downtown

Situated in an old building on the banks of the Nemasket River, the Highway Department has a critical need for improved facilities. New environmental and workplace regulations, on top of the Town's present and projected needs, demand a modern facility. With the additional facility needs of the Police Department and Fire Department previously noted, the option of a combined public services facility has been considered.

j. Combined Public Services Facility

As discussed above, the Police, Fire, and Highway Departments are all considering their program and facility needs and determining that their current buildings are not providing the proper support to their missions. A combined public services building may be an answer to these needs. However, a number of issues must be resolved to allow the coexistence of these departments:

- Siting – The location of a combined facility must meet the needs of all three departments. A centralized location within or near the downtown area may be the most efficient but may also depend on service area coverage and substations.
- Design – The design of a combined facility may reduce the total design requirement for three new buildings. However, it may also require some special engineering to ensure the security and emergency access needed for the public safety.
- Funding – The combining of the facilities may create a cost sharing that improves the funding possibilities. However, the multi-use facility may also require special treatments to allow the users to co-exist.

k. Solid Waste

The Town has direct haul, curbside pick-up for wastes and recycling for its residents – a high value service for such a large community. The wastes are hauled to SEMASS in Rochester. However, this does not cover all wastes.

The Town's landfill at Brook Street is currently state of the art. It includes a closed and covered landfill area of approximately 19 acres. However, the unusual portion is a lined landfill in three phases covering 6-acres in the first phase, which had a three year window and was closed, and a 7-acre phase which has a ten year cycle which puts the cycle out to the year 2007. After this the third phase can be activated. Because of the limitations placed by State regulations on solid waste disposal and environmental protection, the majority of municipal landfills have been closed and few towns have attempted to develop lined landfills for further waste disposal. Consequently, the Town has an unusual option for disposal, which should be recognized for its potential to generate income from disposal.

l. Gas and Electric Department

The Middleborough Gas and Electric Department serves the communities of Lakeville and Middleborough and is the largest municipal power company covering 101 square miles of territory. There are approximately 15,000 customers for electricity and 4,500 for

gas service. The Department has seen a 7 percent increase in demand over the last year, which is reportedly dramatic.

Ideas and Issues for the Middleborough Gas and Electric Department

The Department has had a Strategic Plan in place since the summer of 1997. The strategic plan is updated annually as a long-range decision model and as an overall plan for the facility. The July 2000 Strategic Plan includes a Strategic Planning Model, which allows the Department to make decisions on long range options such as selling or expanding the business and services. The recommended strategy is:

- Continuing to optimize the existing core business
- A decision not to sell the operation
- Evaluation of the option to shrink some of the operation such as outsourcing wholesale gas and power activities
- Expanding the business with other products and services
- Forming alliances with others for long term cost reductions

The Department controls a parcel of Town land of 11 acres in South Middleborough. Although there are no current plans, this land has the potential to support long-term changes as Middleborough, and Lakeville, grow.

m. Council on Aging

The Council on Aging (COA) building is a relatively new structure with 8.5 acres of land and parking for 75 vehicles. The COA provides a range of services and programs in accordance with the needs to meet and “improve the quality of life of Middleborough’s citizens” and coordinates programs from the State’s Executive Office of Elder Affairs.

Ideas and Issues for the Council on Aging

The COA has identified a concern over the availability of walk-in and emergency medical services. For seniors, housing opportunities are also limited within Town, and the COA would like to see affordable and subsidized housing become more available.

Although the building requires some improvements for maintenance (heating system), the most significant program proposals are to expand the Outreach services to seniors, and to physically expand the Day Care space. The population demographics do not support inordinately higher investments in senior services. However, the COA is also proposing to look at ways to increase revenues generated by the COA, thereby supporting these program and space expansions.

Another option is to connect the needs of other Town departments in the creation of multi-use complexes at strategic locations within Middleborough.

n. MIS/GIS Department

The management information services (MIS) and geographic information services (GIS) provide a fast, efficient and centralized location for the Town's database of financial, environmental, graphics and records information. However, the systems require continual upgrading and management to ensure they provide accurate and completely integrated information. This is why the MIS and GIS operations and operators are very important to a smoothly running system.

This will become more important as the Town seeks to expand its connectivity and services to the public and internally. The efforts of the Schools and Library to provide internet services must also be provided within the other Town departments. As noted in the Town Department Needs survey below, almost all of the departments have asked for internet service to improve their ability to provide services to the Town.

o. Other Department Recommendations

There are other Town departments that create and manage the programs that support the quality of life within Middleborough. During the course of this planning project, these departments have recommended a number of programs and ideas for implementation.

The Town Health Department has recommended a number of programs and actions to improve their delivery of services. These include:

- Development of a housing inspection and improvements program
- Training of food service personnel
- Assessment of the elderly needs in the community
- Updating the health regulations to recognize the particular needs of the Town and the desire for a rural life style.

The Commission on Disabilities has proposed a number of actions and improvements to provide equal access for the disabled. These include:

- Better access for children at the schools and playgrounds.
- More accessible handicapped parking spaces in the Downtown areas
- Interpreters for Town Meeting
- New standards for curb cuts to allow easy, non-vehicular access throughout the town
- Inclusion of accessibility standards in the Town subdivision regulations
- Better public transportation for all residents.

The Board of Selectmen listed a number of actions and goals related to public facilities:

- Develop water supply, but stay out of the business of providing water to other communities
- Develop a GIS system
- Develop a maintenance program for public buildings
- Maintain high quality of public services
- Ensure a high quality school system that will attract high-tech industry jobs
- Assess potential for utility line bylaw that generates revenues from users of public utility right-of-ways
- Expansion of the Town landfill
- Increase handicapped accessibility

p. Town Department Needs Survey

A Town Department Needs Survey was completed in 2000 to project program and project needs for the fiscal years 2000 to 2005. This survey did not include the School Department needs and projections, which are developed separately.

The most significant capital projects included \$9 million for the three departments: Fire, Police and Public Works, \$2 million for the Brook Street landfill expansion, and \$3 million for considering reuse of Memorial Junior High School as a Community Center and for new School Administration offices.

Additional projects and programs recommended by the combined department heads and representatives include:

- Additional personnel and space for Health Dept.
- Additional Building Inspector
- Junior Planner
- Internet for all departments
- Cash registers and receipts program for Collector and Accountant
- GASB system for Accountant
- GIS for all departments needing database
- Acquisition of land for conservation and municipal purposes
- Expanded hours and services at the COA
- Automated water meters
- Clean and televise the Nemasket Interceptor sewer
- Obtain adequate parking for the library
- Rehabilitation of public housing
- Restoration of the façade of the bank building

q. Capital Improvement Plan

Most of the Town's infrastructure issues are addressed in the Capital Improvement Plan (CIP); a plan that lays out the projects needed by the Town, approximately when they are needed, and the costs associated with each project. This allows the Town to determine the need for municipal funds and how they may be raised for the purpose. A Town committee has been in place to complete the CIP and report to Town Meeting. Assisting the analysis is the report and model provided by the State Department of Revenue to the Town on the local budget. A related analysis is included in the Economic Development section of this study as the Fiscal Impact assessment.

The goals in developing the CIP are to maintain and upgrade the community infrastructure within fiscally prudent bounds and phase them over time so as not to create overly large demands on the taxpayers in any single year.

5. Alternatives for Public Services and Facilities

The demands on the Town for new facilities and programs far exceed what could be accomplished in one or even several years. As a consequence, the Town must make choices that support the broadest range or most important functions within the community. Alternatives for capital improvements are presented as program options for overall master planning with a different focus on how the programs are developed.

Choice: Emphasis on Amenities and Quality of Life

With this focus, the ultimate priority is maximizing and enhancing the quality of life of residents. Possible actions for improving Town infrastructure could include:

- Establish policies for extending any and all services only to sites reviewed and analyzed as appropriate for development and that are designed in keeping with the character and land use designation for the area.
- Do not extend roads for commercial or industrial uses through residential neighborhoods and limit commercial cut-through traffic on existing roads in residential areas.
- Extend roads with sidewalks to connect all existing and proposed residential subdivisions.
- Make substantial and coordinated improvements to the street with street trees and sidewalks.
- Make streets pedestrian and bicycle friendly; e.g. traffic calming, sidewalks, and bike paths.
- Make the whole town walkable, rideable and bikeable through connected open space areas, easements and trails.
- Maximize school facilities, parks and active recreation areas at the neighborhood level.

- Provide expansion for senior facilities as the population ages.
- Increase the ease of access to government functions and interaction through internet technology.

Advantages: Use of developed or disturbed land for new infrastructure, and increasing ease of access to facilities, limits sprawl and increases sustainability. Separating potentially conflicting land uses increases land values for all land uses. Economic development is maximized at pre-determined locations where a full range of supporting infrastructure is made available. Improvements to Town facilities may spark improvements to private lands with subsequent increase in property values and taxes.

Disadvantages: Lack of access restricts development and can depress the value of that land so restricted. Dispersed and multiple facilities increase immediate capital costs.

Choice: Emphasis on Infrastructure Improvements

This alternative calls for a focus on infrastructure and facility improvements aimed at better serving the Town's current residents and businesses, and providing adequate capacity to meet the demands of likely future residential and commercial development. This includes:

- Ensuring the adequacy of the roadway system;
- Improving the level of service of the water and sewer systems;
- Ensuring the high quality of the local school system; and
- Promoting pedestrian, bicycle and handicapped accessibility throughout the Town.

The possible actions for capital programs could include items focused on making the Town's infrastructure the highest quality:

- Prioritize and schedule all infrastructure improvements; e.g., water sewer, drainage, roads, communications, to meet projected as well as current demands.
- Establish growth boundaries or areas within which infrastructure improvements will be made as a means to coordinate infrastructure improvements with development.
- Improve the safety of all intersections and local roadways with geometric improvements, signage, lights, etc.
- Increase public transit options.
- Continue improvements in the downtown.
- Upgrade, expand and maintain recreation areas and parks.
- Prioritize and build sidewalks, trails and bikeways throughout the Town.
- Provide program for DPW, Police and Fire department facility improvements. Provide increased medical emergency service capabilities as population ages.

- Expand school facilities, parks and active recreation areas.
- Provide combined school, library and recreation department programs for all ages, including the infrastructure necessary to provide locations and support for the programs.
- Provide a high level of protective strategies for public water supply to ensure its long-term quality.
- Increase the ease of access to government functions and interaction through internet technology.

Advantages: Infrastructure improvements will allow or result in development under the current zoning. Economic development can only be maximized for the specified locations where a full range of supporting infrastructure improvements are made available. Infrastructure improvements can increase value of the land and subsequent property tax revenues. Closely connected improvements to public transportation allow higher quality housing options for low income and elderly residents. Controlling the location and scheduling of capital projects allows the Town to control the pace of community development. Improving the utility infrastructure can result in new private investment and increased tax revenues, and better accounting of water and sewer use.

Disadvantages: Costs for infrastructure program are high. Build-out allowed under current zoning may demand infrastructure of significant capital cost. Infrastructure projects and related development can increase impacts on natural resources. Additional projects will require identifying new revenue sources.

Economic Development

Taking this approach, the Town would seek to capitalize on its strategic location as a regional location for commercial development and encourage that development with infrastructure. Important issues will be:

- Strengthening the tax base;
- Attracting new businesses and supporting existing businesses;
- Ensuring adequate public services and facilities to support new and current businesses;
- Providing incentives for the redevelopment of underutilized commercial and industrial parcels; and
- Enhancing the climate for business.

Possible capital and infrastructure improvements could include:

- Focus infrastructure programs on improvements to roads and utilities in potential commercial development areas – the industrial parks and downtown.
- Construct infrastructure in accordance with market demands for commercial and industrial space.

- Make significant improvements to major roadways and commuter rail services.
- Provide dedicated infrastructure; e.g., roads, utilities, wastewater treatment capacity for identified or targeted industries and businesses.
- Initiate specific improvements for development of tourism such as parks and special services.
- Identify options for public facility improvements for businesses meeting Town standards and planned land use goals.
- Determine amenities that support and attract businesses; e.g., high speed internet access, and develop programs for construction of such improvements.
- Build infrastructure; e.g., new and separate roads, drainage systems and other utilities, that allows a separation of commercial areas from residential areas, thereby reducing potential conflicts between the land uses.
- Support, and if possible expand, cultural facilities (museums, theaters) that support local businesses and tourism.
- Form partnerships with existing local businesses to promote continued investment in infrastructure and businesses.

Advantages: Focusing infrastructure improvements on specific land uses creates a better potential for their development. Economic development increases potential for tax revenues that could be used towards improving other opportunities.

Disadvantages: The tax revenues that will accrue will only occur after the development projects are constructed and the Town has paid out funds for the infrastructure. A focus on commercial development next to residential areas can depress residential land values, unless proper buffers are provided. Economic development increases worker and housing demand that may not be satisfied without other infrastructure improvements. Additional projects will require identifying new budget sources.

III. CONCLUSION

The Town of Middleborough has an unusual opportunity to shape its own future as it enters the 21st century. This future must be built on a past that the citizens find meaningful, because it evokes a rural image of open land, farms, villages and a town center.

This is a town that has remarkable natural assets and large tracts of undeveloped land. Middleborough enjoys a strategic regional location and is served by excellent and expanding highway and rail access. It retains an affordable, small town character that attracts a population seeking a high quality of life, and allows people of diverse income to live well. There is much that should be protected about this existing balance of qualities, as it is rare.

This is also an era when new ideas are emerging in urban planning, transportation and environmental protection. By creatively applying the most useful of these ideas, the Town can meet the goals and objectives that are articulated in this report.

MIDDLEBOROUGH



Vision 2020

**Looking From The
Present, Through
The Past, Into The
Future.**

IV. APPENDIX: SOURCES OF INFORMATION

The following is a partial list of reports, studies and documents that have been reviewed in the preparation of this study.

A Study of School Facilities Needs, Educational Planning and Services, 1995
Accident Reports, 2000 by Middleborough Police Department
Bedford Street (Route 18/28) Transportation Master Plan, 1999 by HNTB
DEM Trails and Greenway Project, 1999
Developable Lot Study, 1987 by IEP
Development Opportunities District Comprehensive Traffic impact Study, 1987 by HNTB
Downtown Parking Study, 1987 by SRPEDD
Downtown Streetscape Master Plan, 1998 by The Cecil Group
Everett Square Traffic Operations Study, 1986 by Edwards & Kelcey
Functional Design Report for Traffic Flow and Safety Improvements Route 105/28 Intersection, 1994 by Rizzo Associates
General Use Analysis, 1984 by SRPEDD
Highway Improvement Justification Report, Route 18/28, 1996 by VHB
Lakeville MBTA User Survey, March 2000
Market Analysis and Business Recruitment Campaign, Downtown Middleborough, 1994 by Hyett Palma
Market Analysis and Recruitment Campaign, Downtown Middleborough, 1994 by HyettPalma
Massachusetts Department of Revenue, Revenue and Expenditures Forecast, FY 2001-FY 2006, Town of Middleborough
Middleborough and Commuter Rail 1989 by VanOrman & Associates
Middleborough Capital Planning Committee Final Report, 2001
Middleborough Commercial Area Revitalization District Plan, June 1981 by Downtown Revitalization Committee and SRPEDD
Middleborough Conservation and Recreation Plan, 1981 by SRPEDD
Middleborough General Use District Study 1989 by SRPEDD
Middleborough Master Plan, 1969-1971 by Metcalf & Eddy
Middleborough Public Library Long Range Plan, 2001-2004
Middleborough Traffic Count File, received May, 2000
Northwest Master Plan Update, 1986 by SRPEDD
Northwest Middleborough Traffic Study 1986 by SRPEDD
Open Space and Recreation Plan, 1987 by IEP
Open Space and Outdoor Recreation Conservation Plan, 1998 by Open Space Planning Subcommittee
Priorities for Open Space, 1974 by Harvard GSD
Regional Pavement Management Program, Survey Results, 1997 by SRPEDD
Route 44 Projections, May 1991 by SRPEDD
Route 44 Reconstruction Project 2000 by Mass Highway Department
Southeastern Massachusetts Transportation Management Association Action Plan, 1991 by SRPEDD
State and US census data to 1998
Taunton River Basin Inventory and Analysis of Current and Projected Water Use, 1989 by

DEM, Division of Water Resources
Taunton River Corridor Natural Resource Inventory and Conservation Plan, Parts I and II,
1998 by The Wildlands Trust of Southeastern Massachusetts
Town Reports 1990-1999; provided by Town Clerk
Town Zoning Bylaws
Traffic Impact and Access Study, Southpointe Park, 1998 by Vanesse and Associates
Traffic Impact and Access Study, White Oak Island Retirement Community, 1990 (revised)
by McDonough Scully
Upper Taunton River Greenway, 1998 by Taunton River Stewardship Program and The
Wildlands Trust of Southeastern Massachusetts