
Shrewsbury Master Plan



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This Master Plan was developed by Shrewsbury's citizens with assistance from:

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Shrewsbury Master Plan

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In addition, we would like to acknowledge the efforts of Shrewsbury's paid and unpaid staff in the preparation of this Master Plan.

Executive Summary

The landscape patterns we see around us—rural vistas, commercial strips, new subdivisions—are a result of zoning and other Town policies that collectively form a “blueprint” for Shrewsbury’s future. Master planning is the process of reviewing this blueprint, determining whether it matches Shrewsbury’s desired future, and, if not, making the necessary changes to the blueprint.

The Master Plan has several goals:

- guiding and controlling growth
- encouraging appropriate economic development
- protecting natural resources and open space
- ensuring that the Town continues to provide quality public facilities and services
- addressing townwide transportation issues

The Master Plan is a policy guide, not law. It is up to Town Meeting to follow the guidance of the Master Plan and adopt sensible and effective bylaws and policies.

How was the Master Plan developed, and what does it contain?

The Master Plan was developed on the basis of input from Shrewsbury’s citizens and a 27-member Master Plan Steering Committee. A team of consultants led by Daylor Consulting Group of Braintree assisted the Steering Committee by leading public meetings, helping to develop Master Plan recommendations, and preparing reports, maps and graphics.

The Master Plan is based on an extensive and inclusive public process. Four public forums held during the summer and fall of 2000 provided an opportunity for citizens to offer their input on topics ranging from traffic to open space to economic development. Small “focus groups” meetings were held with the business and conservation/recreation communities in August 2000 to elicit input on these topics. The draft Master Plan recommendations were presented to the Steering Committee and the public in November 2000, and subcommittees of the Steering Committee reviewed each element of the draft Master Plan in detail. Throughout the process, Town residents and other interested parties were able to provide written feedback to the consultants and the Steering Committee via mail, email, an Internet feedback form, and an Internet discussion forum. The final Master Plan reflects the public input provided throughout the process.

The Master Plan is a four-step planning process that starts with data and general goals and leads toward specific planning proposals. The four Master Plan chapters are:

- Chapter 1. Inventory and Analysis
- Chapter 2. Planning Framework (Goals)
- Chapter 3. Comprehensive Plan (Recommendations)
- Chapter 4. Implementation Plan

In Massachusetts, a Master Plan is required to be a comprehensive townwide plan that contain the following elements: Land Use, Natural and Cultural Resources, Open Space and Recreation, Economic Development, Housing, Public Facilities and Services, Transportation, and Implementation.

In addition, as part of the Master Plan, six District Studies were prepared in order to focus attention on specific parts of Shrewsbury where planning issues needed to be addressed at a finer scale. The District Studies highlighted important issues in each district such as aesthetics, mix of uses, vacant land or buildings, traffic safety, and pedestrian safety. These district studies can be reviewed, upon request, at the Engineering Department offices in Town Hall.

Summary of Chapter 1: Inventory and Analysis

The first step of the planning process was to examine Shrewsbury's existing conditions, trends, needs, issues and opportunities, and to evaluate how Shrewsbury is likely to develop in the future given its current zoning and regulatory "blueprint." Shrewsbury is currently zoned to allow primarily medium-density residential development as well as various types of retail, office, manufacturing and other industrial development. According to a recent state-funded "buildout" study, Shrewsbury could accommodate up to 6,000 new dwelling units and 15 million square feet of commercial and industrial space if all its buildable land were developed. Over time, this growth will transform Shrewsbury into a fully mature suburban community with additional residential neighborhoods and large places of employment. These changes are likely to create significant impacts in terms of open space, traffic, community character, water supply and sewage disposal, and Town facilities and services.

Chapter 1 highlighted several specific issues, to be addressed in the Master Plan. For example:

- Some of Shrewsbury's natural resources, such as wetlands and groundwater, may need additional protection from pollution or degradation.
- Shrewsbury still has several thousand acres of unprotected open space—the future of which is now uncertain.
- Current housing development favors expensive single-family dwellings while underserving those who require senior housing, affordable housing, or apartment/condo-style housing.
- Current business zoning appears to favor lower-value uses.
- Several Town facilities will need to be built or upgraded in the near future.
- Traffic congestion is a problem in Shrewsbury and could become far worse in the future. Alternative means of transportation are not well developed.

Summary of the Chapter 2: Planning Framework (Goals)

The Planning Framework is a statement of goals that encapsulates Shrewsbury's desired future in general terms based on community-wide consensus. These goals were developed based on input from the Steering Committee, public meetings, focus groups, and written comments from Town residents. The goals statement provides the basis for the more specific Master Plan recommendations, and is intended to help guide future decision-making by Shrewsbury's leaders.

During the Master Plan process, many citizen comments related to a few general themes. These included:

- **Growth and Development:** The greatest concerns related to the effects of continued residential growth, including increased traffic, lost open space, and overstressed Town facilities, and higher taxes. Most citizens expressed a desire to control growth so as to maintain unique aspects of Shrewsbury's character, including the historic town center and rural lands.
- **Natural Resources & Open Space:** Most citizens agreed that the Town has several significant natural resources that should be preserved. Foremost among these is the aquifer recharge area in

northwest Shrewsbury. Participants also recommended that the Town conserve and clean up its lakes, ponds and wetlands, and acquire additional open space.

- **Recreation Areas:** While Shrewsbury has some substantial recreation lands, citizens felt that these areas are not well distributed throughout the Town. Many felt that the Town needs more facilities for summer recreation, water sports, trails and greenways.
- **Housing:** Most citizens felt that a more diverse housing supply is needed so that the Town's current residents will not be forced to move out of Shrewsbury. In particular, affordable housing for those 55 and over ("empty nesters"), housing for younger people without children, and assisted living facilities were identified as important.
- **Businesses:** Residents had several ideas for improving Shrewsbury's business districts such as allowing more mixed-use areas; encouraging "sound" business development such as campus-style office parks; and improving the aesthetics of business development.

Based on these and other comments, a goals statement was developed to guide the Master Plan. The goals statement consists of 15 broad goals, each of which has more specific sub-goals (the sub-goals are omitted here in the interest of brevity). The numbering of the goals is for identification purposes only, and is not meant to establish ranking or priority.

Goal 1: As Shrewsbury develops in the future, promote land use patterns that are compatible with the Town's natural environment and existing landscape character.

Goal 2: Permanently protect priority open space from development.

Goal 3: Increase public opportunities for access to Shrewsbury's open space and natural areas.

Goal 4: Preserve, protect, restore, and ensure the conscientious management of Shrewsbury's natural and cultural resources.

Goal 5: Strengthen and preserve Shrewsbury's town center.

Goal 6: Provide a range of housing options to meet the needs of people of diverse income, age and family size, based on Shrewsbury's present and projected future demographic profile.

Goal 7: Protect the quality of existing residential areas.

Goal 8: Promote environmentally compatible and high-assessed value businesses and industries in Shrewsbury in order to provide convenient goods and services, local employment, entrepreneurial opportunities, and real estate tax income.

Goal 9: Provide functional and attractive public facilities for government, social and other public activities.

Goal 10: Provide adequate water, sewer and communications infrastructure in order to promote Shrewsbury's land use objectives.

Goal 11: Provide adequate recreational opportunities for all sectors of Shrewsbury's population.

Goal 12: Continue to provide a high level of public education for Shrewsbury residents.

Goal 13: Provide and maintain a safe and efficient transportation system for private vehicles and other modes of transportation.

Goal 14: Maintain an efficient administrative and planning structure to provide government services and to implement this Master Plan and other long-term planning and budgeting projects.

Goal 15: Work with the federal, state, and regional governments to ensure that Shrewsbury’s priorities are realized in situations where jurisdictions overlap.

Summary of the Chapter 3: Comprehensive Plan (Recommendations)

The centerpiece of the Master Plan recommendations is a plan for the future use, development, and conservation of land within Shrewsbury. The Land Use Guide Plan (Figure 9-1, attached) illustrates the recommended future land use patterns for Shrewsbury. This Guide Plan is supported by recommendations for each of the other Master Plan elements: Natural and Cultural Resources, Open Space and Recreation, Economic Development, Housing, Public Facilities and Services, and Transportation.

The Land Use Guide Plan divides the Town into eleven different land use categories, and is intended to further the goals identified above such as reducing the potential for new residential growth, promoting appropriate economic development, and minimizing future traffic impacts. The Land Use Guide Plan is not exactly the same as the Proposed Zoning Map (which is contained in the Implementation chapter); however, the Proposed Zoning Map will be based closely on the Land Use Guide Plan.

Future Land Use & Zoning Recommendations

The Land Use Guide Plan identifies eleven different land use categories, as summarized below:

Summary of Land Use Guide Plan

Recommended Land Use	Acres	Developable Acres	% of Town’s Dev. Acres
Conservation/Recreation	1,592	0	0.0%
Rural Residential	1,857	949	26.6%
Suburban Residential 1	4,306	659	18.5%
Suburban Residential 2	3,050	720	20.2%
Multi-Family Residential	415	124	3.5%
Local Shopping Area	139	6	0.2%
Shopping Center	188	40	1.1%
Highway Business	276	104	2.9%
Office/Research	694	452	12.7%
Limited Industrial	362	116	3.2%
Public/Semi-Public	1,026	400	11.2%
Shrewsbury Total	13,904	3,571	100.0%

A brief summary of each of the eleven Land Use Guide Plan areas is provided below:

Conservation/Recreation: Most of the land in this area is already designated for conservation and/or recreation purposes and is protected from development. The CR area also includes a few parcels that are not currently protected from development but are recommended for future protection because of their environmental sensitivity and/or their importance for Town or neighborhood recreation. The CR lands are well dispersed throughout the community, with at least a few parcels in each quadrant of the Town.

Rural Residential: Rural Residential areas are located in sections of the Town that are still relatively sparsely developed where residents have expressed a desire to retain rural character. The RR area also includes land that, because of its environmental sensitivity (e.g., steep slopes, poor soils or aquifer recharge potential), should not be intensively developed. RR areas are located primarily in the eastern half

of Town, with smaller parcels also located around Slocum Meadow, Gold Street, and in northwest Shrewsbury. The RR areas should allow less dense residential development than is currently allowed in the “Rural” districts, and development should be conducted in an environmentally sensitive manner

Suburban Residential 2 and Suburban Residential 1: The two Suburban Residential areas include most existing residentially developed areas, most areas currently zoned “Residence,” and certain areas currently zoned “Rural.” Some of these areas, long connected to municipal water and sewers, have been developed at a comparatively high density while other areas, which lack public sewer, have been developed at a somewhat lower density. The SR2 area is recommended for medium-density suburban development (most of these areas are currently zoned for a 20,000 square foot minimum lot size), while the SR1 area is recommended for higher density suburban development (most areas are currently zoned for a 12,500 square foot minimum lot size). Both areas are already nearly built out, with only 15% of the SR1 area and 23% of the SR2 area remaining as developable land.

Multi-Family Residential: This category corresponds mainly to the existing multi-family zoning districts (MF-1, MF-2, and Apartment). Many of these districts are fully or nearly built out. Since the number of areas allocated for multi-family residential development is limited, the Town should reserve the remaining developable land in the MFR area for multi-family housing, which could include senior housing or housing for young single people and married couples.

Local Shopping: The Local Shopping areas are intended to function as small, pedestrian-oriented retail and service centers for the convenient provision of goods and services to local residents and employees. The LS area includes land currently zoned “Neighborhood Business” as well as land zoned “Limited Business”; the largest two LS areas are in the town center and the Route 9 shopping district. Rather than continuing to allow the myriad of commercial uses now allowed in the “Limited Business” district, uses in the LS areas would be more focused on small-to-medium scale businesses. Design guidelines in this area should promote pedestrian-friendly development through limited setback requirements, sidewalks, curb cuts guidelines, and aesthetic guidelines.

Shopping Center: Unlike the LS area the SC area is intended for larger-scale retail and service establishments in a multi-store shopping center environment. The SC areas will be primarily auto-oriented, although pedestrian accommodations should be also provided. The SC areas are purposefully distributed throughout the Town and located in close proximity to residential neighborhoods and major employment centers in order to minimize the need for cross-Town trips. The SC area includes several existing shopping centers, plus new areas recommended at the intersection of Main Street and North Quinsigamond Avenue and at the intersection of Route 9 and South Street. Within the SC area, zoning regulations should target multi-business shopping center developments undertaken by a common developer. These developments provide shared driveways, internal circulation roads, and shared parking, as well as coordinated architectural design, signage, and landscaping. Quinsigamond Plaza on Route 9 is an example of the type of development that might be targeted for the SC areas.

Highway Business: The HB area consists primarily of land that is now zoned either Commercial Business or Limited Industrial along Route 9 and Route 20. The Highway Business area is intended to attract shoppers from throughout the Town as well as from neighboring communities. The HB area should allow for a wide range of commercial uses. HB areas are distinguishable from Shopping Center areas in that HB areas are generally intended to be developed as independent, stand-alone developments rather than integrated multi-business shopping centers. Design standards within the HB areas should specify requirements for curb cuts and access, landscaping, and building design in order to make these areas as safe and attractive as possible.

Office/Research: The Office/Research area is intended to provide designated areas for high-value office developments and similar uses. While the Town currently contains two “Office-Research” districts, both are relatively small. Office developments can currently be built within the “Limited Industrial” district, but much of this land has already been developed or fragmented by lower-value uses such as trucking and distribution facilities. To encourage higher-value uses, the OR area will set aside 690 acres (452 developable acres) for such uses. Within the OR areas, allowed uses should be limited primarily to office buildings, research laboratories and similar facilities. Industrial and other commercial uses should not be allowed. One exception is that small-scale retail and service establishments (such as restaurants, coffee shops, and dry cleaners) should be allowed as accessory uses to serve employees within the OR areas.

Limited Industrial: The LI area consists primarily of land zoned “Limited Industrial” that is already developed with industrial uses. The LI areas are intended to allow the continuing existence and limited expansion of existing businesses such as trucking, distribution, warehousing, and manufacturing facilities. The retention of these areas will encourage Shrewsbury to retain a diversity and balance of businesses and economic activities. Many of the areas that are currently zoned “Limited Industrial” but are undeveloped are recommended to be reclassified in favor of Office/Research uses. Within the LI area, landscaped buffers and “performance standards” should be established to minimize the negative visual, noise, air pollution, and traffic impacts that might be generated by these land uses.

Public/Semi-Public: These areas are comprised of municipal facilities, schools, state properties, and other institutions. This district is intended to provide space for institutional uses as well as open space lands in public ownership. While Town, state, and federal lands are generally exempted from local zoning provisions, the establishment of a public/semi-public district is nevertheless important for two reasons. First, it can encourage certain types and designs of development that might be proposed by Town, state or federal entities. Second, if these lands are ever sold to the private sector, it can require that land uses be limited to relatively low-impact uses such as institutions and open space.

Implications and Impacts of the Land Use Guide Plan

Compared to Shrewsbury’s existing zoning, the Land Use Guide Plan will reduce the potential number of residential units that could be built from about 5,400 to 4,200. The potential office/research buildout will increase from about 2.7 million square feet to 11.8 msf. The potential amount of new limited industrial space will decrease from about 20.2 msf to 4.1 msf. In the long term, these changes should increase the amount of high-value business development in Shrewsbury, reduce the need for additional public facilities and services, and contribute to the preservation of some of Shrewsbury’s remaining open space.

Natural Resources Recommendations

Protection of Shrewsbury’s natural and cultural resources is an essential element of the overall Master Plan. Key recommendations include:

- Establishing a local wetlands protection bylaw that provides stronger protection than the state act by protecting isolated wetlands, wetland buffer zones, and vernal pools.
- Taking steps to address runoff and pollution as part of a long-term strategy to improve water quality in the Town’s lakes and ponds.
- Considering revisions to the Aquifer Protection Overlay District to strengthen protection for Shrewsbury’s aquifers.

Open Space Recommendations

One of the most common themes voiced at the master plan public forums was residents' desire to preserve much of Shrewsbury's remaining open space. Many residents perceive the Town as being already over-developed and wish to preserve undeveloped land both in their own neighborhoods and townwide. The open space section outlines a multi-pronged open space protection strategy that includes purchasing additional open space, clustering new developments to protect significant amounts of land in the Rural Residential areas, and seeking the involvement of nonprofit land trusts and other private parties.

Priorities for open space protection should focus on Shrewsbury's most unique and irreplaceable resources, as well those areas that are not already protected by state and local environmental laws. The highest-priority areas for open space protection should include areas that:

- Provide access to Lake Quinsigamond and the Town's ponds and other water bodies (e.g. public beaches, pond-side parks)
- Extend or connect existing open space patches or corridors
- Contain significant wildlife habitat or vernal pools
- Conserve the Town's natural resources, such as water resources
- Preserve the pastoral character of the Town's remaining rural sections

Overall, the Land Use Guide Plan designates about 11% of the Town as Conservation/Recreation land. This does not include open space within cluster subdivisions, which currently amounts to almost 200 acres and could grow significantly in the future as more cluster subdivisions are developed.

Economic Development Recommendations

The most important step that Shrewsbury can take to promote desired economic development is to ensure an appropriate quantity and location of commercially- and industrially-zoned sites. This need is addressed in the Land Use Guide Plan. To encourage developers to build in Shrewsbury's business zones, the Town should streamline its zoning requirements to eliminate unnecessary obstacles to appropriate economic development. This does not mean that the Town should allow environmentally destructive or high-impact developments, but rather that it should allow a certain amount of flexibility so that developers can propose projects that benefit both themselves and the Town. In addition, the Town should target future infrastructure development (water, sewer, and communications infrastructure) to areas that are zoned for Office/Research uses. In order to increase its ability to attract desired businesses to Shrewsbury, the Town should also consider hiring a part-time or full-time economic development specialist.

Housing Recommendations

Shrewsbury has traditionally had a range of housing options, as many multi-family units were developed in the Town during the 1960s and 1970s. Within the past 15 years, however, the development of detached single-family homes has increased substantially while little new multi-family housing has been built. Most of these new single-family homes cost substantially more than middle income households can afford. Rising housing costs threaten the Town's identity as an affordable community, and also make the Town vulnerable to Comprehensive Permit applications. Residents at the master plan forums expressed a desire to see developers build a more balanced housing mix in the Town, which includes housing for senior citizens and childless individuals or couples. In addition, these types of housing can provide net tax revenue to the Town because they typically contain few schoolchildren.

Rather than select specific sites for additional multi-family housing districts, the Town should continue to allow multi-family housing by re-zoning application, as is currently done. This policy will allow

developers to select the most appropriate sites for multi-family development while giving the Town significant control over the approval and design of this development. Specific criteria for the approval of multi-family housing special permits should be established so that the process is fair and results in development that is acceptable to the community. Attached “in-law” apartments as well as two-family homes can be an important type of housing for senior citizens or young persons since they can allow multiple generations of a family to live on a single property, while still affording some level of privacy for each living group. The development of affordable housing should also be encouraged through incentives and/or requirements.

Public Facilities and Services Recommendations

To accommodate recent growth, the Town has built new municipal facilities such as the Senior Center; expanded some facilities such as its Police Station, Municipal Office Building, and Library; and has embarked on a major school expansion program for High School and Middle School grade levels. Though these recent accomplishments and the townspeople’s willingness to fund them are commendable, more will need to be done in the future in order to remedy current shortcomings and meet demands from new growth. For example, new elementary schools will be required; new fire station(s) are needed to provide adequate fire protection services; the Library will need to expand to meet increased circulation demands; the Police Headquarters must expand to alleviate space shortages and operational safety issues; water treatment and sewerage capacities may need to be expanded; and new recreational venues are needed. Since all these improvements will need to be funded, extending the forecasting range of the Town’s capital budgeting process will become critical to keep costs in alignment with the growth in local tax revenues, state grants, and the Town’s bonding capacity.

Transportation Recommendations

The Master Plan addresses transportation from the point of view of integrating transportation-related issues into a community’s overall physical planning process. If Shrewsbury reaches its full build-out potential, traffic volumes within the Town would greatly increase. For this reason, the Town should adopt and implement a traffic management plan—a comprehensive strategy to reduce the number of vehicles on the road, to reduce the impact of traffic on the community, and to improve traffic operations. The TMP should incorporate several strategies including:

- **Land Use Planning:** By locating workplaces, schools, shopping areas, and residential areas in close proximity to one another, and by allowing appropriate mixed-use development, Shrewsbury can reduce the need for vehicular travel to conduct one’s daily activities.
- **Site Planning:** New developments should minimize curb cuts and provide internal circulation and adequate access points to minimize traffic impacts on adjacent roads.
- **Transportation Demand Management:** TDM involves encouraging or requiring alternatives to travel by single-occupancy vehicles. The Town, in conjunction with private developers and landlords, should promote alternatives such as public transportation (including the commuter rail), walking, and biking.
- **Traffic Calming:** Traffic calming includes a range of strategies to slow down traffic and deter the use of local roads for through traffic.

Summary of Chapter 4: Implementation Program

The Implementation Program chapter describes the individual steps that the Town will need to take in order to translate the Master Plan recommendations into official Town policy. These steps include:

- Changes to the Town’s regulatory structure, particularly its zoning bylaw.
- Capital expenditures for new projects and for land acquisition.
- Other actions that could be undertaken by Town Departments, Boards and Commissions, volunteer committees, and/or private parties.

Major changes to the Town’s regulatory structure that would be required to implement the Master Plan include the following:

- **Improvements to the Existing Zoning Bylaw:** The Bylaw’s Definitions section should be updated, and parking requirements should be reviewed to ensure that they are not excessive.
- **New Zoning Map & Zoning Districts:** The Land Use Guide Plan should be translated into a revised zoning map with specific use and intensity (dimensional) regulations for each district.
- **Project Review Provisions:** To improve the quality of new development, the Town should adopt site design review procedures with specific criteria for sidewalks, roadways, tree cutting, etc. Project impact studies and appropriate mitigation should be required for major developments (especially for transportation impacts). Architectural review in certain areas is also recommended.
- **Provisions for Rural Areas:** The cluster zoning bylaw should be improved in order to increase the quality and quantity of open space that is protected in the Rural Residential areas.
- **Housing-Related Regulations:** As discussed above, the bylaw should provide increased flexibility for duplexes, additions and in-law apartments, and sufficient opportunity to develop appropriate multi-family housing including senior housing.
- **Natural/Cultural Resource Protections:** In addition to the recommendations for wetland and aquifer protection, the Town should consider adopting a Hillside Bylaw to protect against erosion and environmental degradation on steep slopes. A Lakefront Overlay District could help increase public access to Lake Quinsigamond, improve water quality, and encourage lakefront development that takes advantage of the lake as a scenic resource.

Chapter 1

Inventory and Analysis



Shrewsbury Master Plan

April 2001

1. Land Use

Land use refers to the pattern of residential, commercial, industrial and public development, as well as agriculture, forest and other open lands in a community. Land use forms the basis for comprehensive planning and determines, to a large extent, the need for transportation infrastructure, public facilities, and environmental protection measures. This section provides an overview of Shrewsbury's existing land use, as well as an assessment of how land use is likely to change in the future under the town's current zoning.

1.1. Regional Context

Shrewsbury is a maturely developed suburban community located on approximately 22 square miles in Worcester County. Like many central Massachusetts communities, Shrewsbury was originally an agricultural community. During the 18th century, the community gradually developed a manufacturing base. Lack of sources for hydraulic power as well as delayed access to rail hastened the decline of the Town's industry and Shrewsbury evolved into a suburban residential community. According to the most recent estimate in 1998, Shrewsbury's population is approximately 27,791.¹ This figure represents an increase of approximately 15% since the 1990 U.S. Census, when the population was 24,146.

Regionally significant resources include Lake Quinsigamond, which forms Shrewsbury's western boundary. Initially, the lake acted as an impediment to westward travel; it later attracted people from throughout the region looking for recreational opportunities and an attractive lakeside area to locate summer homes. Directly north of the lake is a large and productive aquifer that stretches from the northwestern part of Shrewsbury into Boylston. This aquifer provides Shrewsbury with the majority of its drinking water. On the east side of the community is the Shrewsbury Ridge a low but distinct ridge that runs almost north-south and forms the boundary between Shrewsbury and the neighboring towns of Northborough and Westborough. This area serves both as a recreational resource and as the headwaters of the Sudbury, Assabet and Concord rivers (the SUASCO Watershed).

Shrewsbury is located directly east of Worcester and 34 miles west of Boston. A strong transportation network allows the town to be easily accessible from all points within the Northeast region. Interstate 290 runs east-west through the northern edge of town, connecting to Interstate 495 east of the town and Interstate 190 beyond the western boundary. State Route 140 runs north-south and provides access to the Massachusetts Turnpike, which runs east-west just south of Shrewsbury in Millbury. U.S. Route 20 provides east-west passage in the southern part of town, while the Worcester Turnpike (Route 9) runs east-west through the middle portion of the Town. Commuter rail service is available just over the town border in north Grafton and in neighboring Westborough along the Worcester/Framingham Line.

Shrewsbury's population has more than tripled since World War II, reflecting the trend of many suburban areas in Massachusetts. Recent population trends are shown in Table 1-1.

¹ Massachusetts Department of Revenue, Division of Local Services, Municipal Data Bank.

**Table 1-1
Historical Population Growth in Shrewsbury, 1920 – 2000**

Year	Population	Change from Previous	Percent Change
1920	3,708	--	--
1930	6,910	3,202	86.4%
1940	7,586	676	9.8%
1950	10,594	3,008	39.7%
1960	16,622	6,028	56.9%
1970	19,196	2,574	13.4%
1980	22,674	3,478	18.1%
1990	24,146	1,472	7.6%
1998*	27,791	3,645	15.1%

Sources: U.S. Census, Massachusetts Municipal Data Bank.

*Estimated.

In recent years, Shrewsbury has faced several concerns related to its growing population and increasing development. First, the strong real estate market has resulted in the development of hundreds of acres of open space. The loss of open space continues to alter the Town’s character as well as its natural resources. Second, since most of the new housing being developed is quite expensive, there is the possibility that the community will evolve into an expensive enclave offering little opportunity for individuals and families of moderate means to find homes. Third, the Town’s population growth has placed an increased demand on public services and facilities, which will require the Town to seek new revenue sources by increasing its commercial tax base and/or increase residential tax rates. Finally, there is the reality of ever-increasing demand on the Town’s already busy transportation network. Beyond these growth-related concerns, Shrewsbury faces other issues related to achieving the appropriate mix of residential and commercial uses in the town. All of these issues are discussed in detail in the sections that follow.

1.2. Existing Land Use Inventory and Analysis

Shrewsbury is fortunate to have relatively up-to-date land use information from several sources. MassGIS, the state agency responsible for producing and distributing geographic data, determined land use for Shrewsbury based on 1985 aerial photographs of the town. In 1999, as part of the buildout analysis performed by EOE, Applied Geographics and Beals and Thomas, this information was updated on the basis of field surveys and town records. Existing land use is shown in Figure 1-2 and Table 1-2. While similar data is available from the 1970 Master Plan, the information is not directly comparable because of different breakdown of the land use categories.

**Table 1-2
Land Use in Shrewsbury, 1985 and 1999**

Land Use ¹	1985		1999	
	Acres	%	Acres	%
Agriculture	832	6.0	568	4.1
Forest	6,288	45.2	4,669	33.6
Wetlands ²	192	1.4	184	1.3
Recreation	158	1.1	142	1.0
High-Density Residential ³	1,472	10.6	1,567	11.3
Low-Density Residential ³	2,359	17.0	4,262	30.7
Commercial	354	2.5	553	4.0
Industrial	196	1.4	199	1.4
Open and Urban Open	777	5.6	627	4.5
Transportation	418	3.0	415	3.0
Water	563	4.0	563	4.0
Other	296	2.1	156	1.1
Total	13,904	100.0	13,904	100.0

¹ MassGIS classifies land use in Massachusetts using a 21-category classification system. This system has been simplified to 12 categories in the above table, and is based on aggregation of the following Land Use Codes (LUCs): Agriculture = LUCs 1, 2, 21; Forest = LUC 3; Wetlands = LUC 4; Recreation = LUCs 7, 8, 9; High-Density Residential = LUCs 10, 11; Low-Density Residential = LUCs 12, 13; Commercial = LUC 15; Industrial = LUC 16; Open and Urban Open Land = LUC 6, 17; Transportation = LUC 18; Other = LUC 5, 19, 20.

² This category includes unforested wetlands only. Forested wetlands are included under the “forest” land use.

³ High-density residential includes multi-family housing as well as houses on ¼-acre or smaller lots. Low-density residential is defined as houses on lots larger than ¼-acre.

Sources: MassGIS (1985) and EOEa buildout study (1999).

1.2.1 Land Use Patterns

Each of the major land uses in Shrewsbury is described and analyzed below:

Developed Land Uses

- Residential:** Shrewsbury has experienced significant residential growth in the last 15 years, with building permits being issued at a rate of nearly 230 per year between 1985 and 1995. Residential land use now accounts for 42% of the town’s total land area and most of the town’s developed land area. Historically, residential development has been concentrated in a few higher-density neighborhoods such as the town center, Edgemere, and Fairlawn. In recent years, many new subdivisions have been developed throughout the Town, typically in a lower-density pattern. About 27% of the town’s residential lands consist of dense residential with housing on lots of one-quarter acre or smaller.
- Commercial:** Commercial land uses occupy approximately 4.0% of Shrewsbury’s land area. This land consists primarily of retail development along Route 9, such as Olde Shrewsbury Village, the White City Shopping Plaza, and other retail complexes. Commercial land also includes office buildings along Route 9, South Street and elsewhere. In addition, the Town also contains smaller scattered commercial development on Route 20, the Town Center, and a few other locations.
- Industrial:** Industrial land occupies approximately 1.4% of Shrewsbury’s land area. These industrial uses consist primarily of trucking terminals, such as UPS, Red Star Express Lines, and Roadway Express. A large U.S. Postal Service distribution facility lies off Interstate 290 in the

northwest of town. Other industrial uses include manufacturing enterprises located along Route 9 and Route 20.

- **Transportation:** This land use includes divided highways, freight terminals, and similar facilities. Local streets are not included in the 415 acres of transportation land use identified in Table 1-2.

Undeveloped Land Uses

- **Agriculture:** This category includes cropland, pasture, orchards, and nurseries. Of the 568 acres identified as agriculture, about 281 acres are currently classified under the Chapter 61A tax abatement program, which means that they are actively being farmed. Shrewsbury's farmland is located primarily in the southeast and in the south central areas of the town.
- **Forest:** Forest represents almost 34% of the town. The largest continuous forestlands can be found in the northwest corner, adjacent to Interstate 290, and in the southeast corner, in the steep hills that abut the town's border with Grafton.
- **Wetlands:** The 184 acres of wetlands identified in Table 1-2 includes unforested wetlands bordering streams and ponds and occupying isolated pockets of land throughout the town.
- **Recreation:** This category includes playgrounds, golf courses, and other similar facilities, but excludes parks, which are included in the following category. A detailed description of the town's recreation facilities can be found in the Open Space and Recreation inventory in this report.
- **Open and Urban Open:** This category includes utility corridors, cemeteries, and other unforested, undeveloped lands. Both public and private lands are included in this category.
- **Other:** This miscellaneous category includes land used for mining activities (including gravel pits) and waste disposal.

1.2.2 Land Use Trends Since 1985

As development spreads outward from the Boston Metropolitan area, due to both a scarcity in available developable lands and escalating costs for existing sites, the Central Massachusetts region, especially along the I-495 corridor, is picking up much of this growth. A closer examination of this growth reveals several trends that are important to note when planning for future growth. Specifically:

- **Recent residential development has been lower density.** Low- and medium-density residential areas were the fastest growing land use from 1985 to 1999. This pattern means that Shrewsbury residents are consuming more land per capita now than in the past. For example, from 1985 to 1999, Shrewsbury's population grew by about 21% while the amount of land devoted to residential development grew by 52%.
- **Development has spread townwide.** Historically, residential development in Shrewsbury was concentrated in several neighborhoods in the central section of the Town. Recently, development has spread townwide, with significant new residential development in the southeast, southwest, and northeast sections of the Town. Lack of public water and sewer and mediocre road access do not appear to hinder this development, as indicated by the new subdivisions off of Arch Street and Walnut Street.

- **Since 1985, the Town has seen substantial commercial development but little new industrial development.** Since 1985, the amount of industrial land in Shrewsbury has remained about the same, while the amount of commercial land has grown by about 56%. Major new commercial developments have included the office buildings on South and Chestnut Streets.
- **Agricultural, forest, and other open lands are being lost at a significant rate.** Since 1985, the Town has lost about 1,600 acres of forest, 260 acres of agricultural land, and 150 acres of open land and urban open land. In other words, 24% of the land that was vacant in 1985 (14.5% of the Town’s total land area) has been developed since 1985.
- **Other uses are relatively stable.** Recreation, transportation, and wetlands have remained relatively constant over the last 15 years.

1.3. Existing Land Use Laws

As discussed in the Executive Summary, zoning and other land use laws constitute a town’s “blueprint” for its future. Shrewsbury’s leaders and citizens should expect that the town’s existing land use will continue to look more and more like its zoning map over time until the Town is finally “built out”—that is, there is no more developable land left. As part of this process, existing developed areas may also be redeveloped over time in a way that is more in conformance with the Town’s zoning. Shrewsbury’s existing land use laws are described below. The buildout analysis presented in Section 1.4 discusses the implications of development according to these laws.

Shrewsbury has fourteen base zoning districts and one overlay district. The base districts define the allowed uses and dimensional requirements throughout the town, while the overlay district provides for additional restrictions in certain areas. These districts are described below, and are shown in Figure 1-3.

**Table 1-3
Shrewsbury Zoning Districts**

District	Intended Uses	Area (Acres)¹	% of Town
Rural A District	Rural uses, lower-density residential	1,772	12.7
Rural B District	Rural uses, lower-density residential	2,980	21.7
Residence A District	Rural, residential, noncommercial	2,395	17.2
Residence B-1 District	Rural, residential, noncommercial	2,762	19.9
Residence B-2 District	Rural, residential, noncommercial	1,573	11.3
MF-1 District	Multifamily residential	166	1.2
MF-2 District	Multifamily residential	85	0.4
Apartment District	High density, multifamily residential	82	0.6
Limited Business District	Consumer goods/services	91	0.7
Commercial Business District	Goods/services for transients/tourists; nonconsumer goods and services	708	5.1
Limited Industrial District	Research labs, offices, light industry	1,145	8.2
Neighborhood Business District	Controlled consumer goods/services	2	0.0
Office-Research District	Research labs, offices	75	0.5
Limited Office-Research District	Specialized biomedical, production facilities, pharmaceutical, R & D	69	0.5
Total Area		13,905	100.0%

¹ See Table 1-5 for a summary of developable land in each district.

1.3.1 Base Zoning Districts

Rural A and Rural B Districts

These districts, the most restrictive in the town, cover more than 40% of Shrewsbury's remaining undeveloped land. Allowed uses in both districts include single-family residential; agriculture, conservation and recreation uses; and certain institutional uses. The Rural B District also allows by special permit a wider range of institutional uses as well as medical buildings, business and professional offices, research laboratories, and certain other uses.

Residence A, Residence B-1, and Residence B-2 Districts

These districts encompass approximately 6,730 acres (48% of the Town), of which 1,315 acres are developable (30% of the Town's developable land). Allowed uses in all three districts include single-family houses; agricultural, conservation, and recreation uses; and certain institutional uses such as public and parochial schools, playgrounds, churches, and parish houses. Two-family houses are also allowed in the Residence B-2 district only. No business, research, or industrial uses are allowed in any of the three districts.

Uses allowed by special permit from the Zoning Board of Appeals include in-law apartments; for-profit schools; museums; cemeteries; hospitals and sanitariums; nursing homes; assisted living residences; funeral homes; and a few other uses. Continuing care retirement communities are a special permit use in the Residence B-1 District only.

Multi-Family 1 (MF-1) and Multi-Family 2 (MF-2) Districts

These districts, located primarily along Route 9, comprise less than 2 percent of the town's total land area. The allowed uses are similar to those in the Residence A, B-1 and B-2 districts. Multi-family townhouse-type apartments are allowed by special permit in both the MF-1 and MF-2 districts. In addition, multi-family garden-type apartments are allowed by special permit in the MF-1 district only.

Apartment District

This district, which includes 82 acres located along Route 9, is intended to provide land for high-density residential uses. The allowed uses are similar to those in the Residence A, B-1 and B-2 districts. Multi-family townhouse-type apartments, multi-family garden-type apartments, and multi-family apartment buildings no taller than eight stories are allowed by special permit.

Limited Business (LB) and Commercial Business (CB) Districts

These districts comprise approximately 0.7 percent and 5.1 percent, respectively, of the town's land area. Allowed uses include single-family residential dwellings, boarding houses, and in-law apartments; agricultural, conservation, and recreation uses; a wide range of institutional uses; and business uses including retail stores and service establishments, gift shops, offices, banks, limited access banking machines, and eat-in restaurants.

The CB district allows a wider range of business and other uses, including hospitals and sanitariums, membership clubs, gasoline stations, bowling alleys; auditoriums, athletic facilities, health clubs, theaters, research laboratories and building materials salesrooms. Special permit uses in the CB district include take-out restaurants, garages and repair shops, automobile salesrooms, hotels and motels, adult establishments, contractors' yards and storage yards, trucking terminals, and warehouses.

Limited Industrial (LI) District

Approximately 8.2 percent of the Town's area is presently zoned LI. Allowed uses in this district include research laboratories, office buildings, and light industries. Research and industrial uses allowed in the district include manufacturing; photographic, medical, scientific, and research laboratories; basic and applied research and development; contractors' yards and storage yards; trucking terminals and warehouses; distribution centers and plants; building materials salesrooms; and printing or publishing establishments. Residential uses are not allowed in the LI district.

Neighborhood Business (NB) District

This two-acre district, located on Maple Avenue at the site of the vacant Julio's Star Market, allows for the provision of neighborhood-oriented goods and services. Allowed uses include single-family and two-family dwellings, boarding houses, and certain institutional uses. Special permit uses include, retail stores or service establishments, gift shops, banks, and stand-alone banking.

Office Research (O-R) and Limited Office Research (LO-R) Districts

These districts cover approximately 1 percent of the Town's land area and are intended for the provision of space for research laboratories and office buildings. Allowed research and industrial uses include photographic, medical, scientific, and research laboratories; and research and development in the pharmaceutical, biotechnology, and biomedical fields. Business and professional offices are also allowed. No residential uses are permitted in either district.

1.3.2 Overlay Districts

The Aquifer Protection Overlay District (APOD) was added to the Zoning Bylaw to "promote and protect the public health, safety, and welfare by protecting aquifers and recharge areas serving an existing or potential public water supply from contamination." Any area within the APOD is subject to the more restrictive designation of either the overlay district or the underlying district. Zone 1 of the APOD includes land within a 400-foot radius of an existing or potential municipal well site (see Figure 2-1). Zone 2 is the area of land that directly recharges existing or potential municipal wells under normal pumping conditions. Zone 3 includes that land which contributes surface water and/or groundwater to Zone 2 and/or Zone 1. The districts are delineated on the "Shrewsbury Aquifer Protection Overlay District" map, dated February 21, 1988.

Allowed uses Zone 1 are limited primarily to conservation and agricultural uses. Allowed uses in the Zone 2 and Zone 3 include any new or expanded residential or non-residential use permitted in the underlying zoning district, provided that no more than thirty percent (30%) of the lot area is rendered impervious.

Several uses are specifically prohibited in the APOD. In Zone 1 these include anything that would involve storage or disposal of solid and hazardous wastes, manufacturing of hazardous materials, wastewater treatment plants, and commercial earth removal. Regulations for Zone 1 also restrict the application of road salt, deicing chemicals, pesticides, herbicides, and fertilizer. In addition, commercial and industrial development is prohibited. Zone 2 is less restrictive in that it allows commercial and industrial uses, including the manufacturing of hazardous materials, as well as commercial earth removal and non-residential applications of pesticides, herbicides, or fertilizer. Zone 3 is even less restrictive, prohibiting only junkyards, wastewater treatment plants, underground storage of home heating fuel, and disposal or processing of hazardous waste.

**Table 1-4
Use and Dimensional Requirements in Shrewsbury Zoning Districts**

DISTRICT	Min. Lot Area (Sq. Ft.)	Min. Lot Frontage	Min. Open Space (% of Lot Area)	Max. Lot Coverage (%)	Max. Height (Ft)	Max. Number of Stories
Rural "A"						
One Family	20,000	125	--	20	35	2-1/2
All Other Uses	40,000	150	--	10	35	2-1/2
Rural "B"						
One Family	20,000	125	--	20	35	2-1/2
All Other Uses	40,000	150	--	10	35	2-1/2
Residence "A"						
All Uses	20,000	125	--	30	35	2-1/2
Residence "B-1"						
One-Family	12,500	100	--	30	35	2-1/2
All Other Uses	40,000	150	--	10	35	2-1/2
Residence "B-2"						
One-Family	12,500	100	--	30	35	2-1/2
Two-Family	16,000	125	--	30	35	2-1/2
All Other Uses	40,000	150	--	10	35	2-1/2
Multi-Family Residential						
One-Family	12,500	100	--	30	35	3
Two-Family	16,000	125	--	30	35	3
MF-1	16,000	50	70	--	35	3
MF-2	16,000	50	70	--	35	2
All Other Uses	20,000	125	50	10	35	3
Apartment						
One-Family	12,500	100	--	30	35	3
Two-Family	16,000	125	--	30	35	3
Multi-Family	16,000	125	50	8	96	8
All Other Uses	20,000	125	50	10	35	3
Limited Business						
All Uses	12,500	100	15	40	35	2-1/2
Commercial-Business						
All Uses (1)	25,000	125	20	50	35	2-1/2
All Uses (2)	40,000	150	30	30	35	2-1/2
Limited Industrial						
All Uses	80,000	50	30	30	35	2-1/2
Neighborhood Business						
All Uses	25,000	150	15	15	35	2-1/2
Office-Research						
All Uses	80,000	50	30	30	96	8
Limited Office-Research						
All Uses	80,000	200	40	20	40	3

1) Applicable to lots created prior to adoption of this amendment containing three (3) acres of land or less.

2) Applicable to existing lots greater than three (3) acres and all lots created after adoption of this amendment.

Source: Shrewsbury Zoning Bylaws.

1.3.3 Other Provisions

- **Site Plan Review and Approval:** Bylaw provisions added in November 1999 require various forms of site plan review and approval for certain types of projects. For any use which requires mandatory off-street parking (except one and two family residences) and for all structures, parking or loading facilities in the MF-1, MF-2, Residence A, Residence B-1, Residence B-2, Apartment, LB, C-B, and LI districts, the applicant must submit a site plan to the Building inspector and seek Planning Board review.

More extensive site plan review, including a public hearing, is required for any multi-family development, any drive-up window, or any non-residential use which provides 20 or more new parking spaces, or 20,000 or more new square feet gross floor area. Standards for Site Plan Approval include conformance with the zoning bylaw, convenient and safe vehicular and pedestrian movement, adequate parking and loading areas, landscaping that provides visual and noise buffers, provision for controlling surface water runoff, measures to minimize contamination of groundwater, and avoidance of other nuisances. Criteria for Site Plan Approval include a safe internal circulation system; reduced visibility of the development from public view; adequate access for fire safety and service equipment; functional service for utilities, drainage, and fire-protection; outdoor lighting sensitive to adjoining properties; protection of sensitive environmental and/or cultural resources; the development of alternatives least damaging to the environment; and the satisfaction of all other requirements of the zoning bylaw.

- **Floodplains:** Within floodplains (defined as Zone A and Zone A1-30 on the Flood Insurance Rate Maps), the Town regulates development in order to protect the health and safety of its residents and to protect existing and potential water supplies.
- **Cluster Development:** Cluster development allows a developer to build housing in one or more “clusters” at a higher density than would typically be allowed in exchange for setting aside a portion of the site as common open space. Cluster development is permitted in the Rural A, Rural B, and Residence A districts. Within cluster developments, the minimum residential lot size is 12,500 square feet, compared to 20,000 square feet required for conventional subdivisions in these districts. At least 35% of the development tract must be designated as common open space, of which no more than 50% may be wetland or floodplain.
- **Density Bonus Incentive for Affordable Housing:** This provision offers an incentive to private developers to construct affordable housing units. Within the Rural A, Rural B, and Residence A districts, Planning Board may authorize a density increase of up to 15% if the developer makes the additional units affordable to persons earning between 80% and 120% of the median income for the Worcester Metropolitan Statistical Area. The development must provide for preservation of open space in order to reduce the potential impacts on the surrounding neighborhood.

1.4. Buildout Analysis

A buildout analysis is an attempt to answer the question:

What will Shrewsbury look like if all the buildable land is developed in accordance with the current zoning?

Answering this question is important for several reasons: First, the buildout analysis determines how much of Shrewsbury’s land area is developed, how much is legally or environmentally constrained, and how much is available for new development. Second, the buildout provides a clear picture of where

Shrewsbury is headed, and can help its citizens evaluate whether the Town is headed in the right direction. If the buildout scenario is undesirable, the Town will know that it should modify its zoning to more closely resemble its desired future character. Finally, the buildout estimates the possible impact of new development in terms its demand on municipal services, environmental resources, and transportation infrastructure. This information can help in the fiscal and physical planning of new facilities to accommodate future development.

It should be noted that the buildout analysis provides a picture of the ultimate (final) developed state of a town; it does not attempt to determine the rate of future development, or how quickly buildout will be reached. Because development in Shrewsbury is so closely tied to regional and national market conditions, it is difficult to predict how rapidly the Town will grow. Historical rates of development as documented in the land use trends described above and in building permit records, may provide a reasonable proxy for future development rates, at least for the near term.

1.4.1 EOEA Methodology and Results

The buildout was sponsored by the Massachusetts Executive Office of Environmental Affairs (EOEA). EOEA contracted this work to be completed by Applied Geographics, Inc. and Beals and Thomas, Inc. The buildout analysis consisted of four steps:

1. Determine the amount of developable land in Shrewsbury. This number is calculated by subtracting from the town’s total land area all lands that are already developed or are unavailable for development for a variety of reasons.

Total Shrewsbury land area	13,905 acres
less developed & constrained land*	<u>-10,013 acres</u>
= Total developable land	3,892 acres

* Constrained land includes protected open space, utility corridors, and certain lands where environmental regulations prohibit development.

2. Determine the amount of developable land in each zoning district.

**Table 1-5
Developable Land by Zoning District**

Developable land in Rural A district	657.7 acres
Developable land in Rural B district	1,192.7 acres
Developable land in Residence A district	635.7 acres
Developable land in Residence B1 district	472.5 acres
Developable land in Residence B2 district	210.3 acres
Developable land in MF district	40.3 acres
Developable land in Apartment district	27.2 acres
Developable land in Limited Business	0.8 acres
Developable land in Commercial business	290.2 acres
Developable land in Limited Industrial	300.0 acres
Developable land in Neighborhood Business	3.0 acres
Developable land in Office Research	47.0 acres
Developable land in Limited Office Res.	+ 14.4 acres
= Total developable land	<u>3,892 acres</u>

3. Determine the intensity of development allowed in each zoning district under current zoning. Multiply these intensity formulas by the total amount of buildable land in each district to arrive at the overall residential, commercial and industrial district.
4. Estimate the potential impact of the buildout on public services, environmental resources, and transportation infrastructure by using pre-determined formulas.

The results of this analysis are provided in Tables 1-6 and 1-8.

**Table 1-6
Residential Buildout Calculations**

District	Acreage¹	Buildout Formula	Total Buildout (d.u.)
Rural A	658	1.67 dwelling units (d.u.) per acre	1,098
Rural B	1193	1.67 d.u. per acre	1,992.
Residence A	636	1.67 d.u. per acre	1,062
Residence B1	472	2.55 d.u. per acre	1,205
Residence B2 ²	210*.95	2.55 single-family d.u. per acre	509
	210*.05	2.01 multi-family d.u. per acre	29
Multi-Family ²	40*.25	2.55 single-family d.u. per acre	27
	40*.25	2.14 two family d.u. per acre	23
	40*.50	4.36 multi-family d.u. per acre	83
Apartment ²	27*.05	2.55 single-family d.u. per acre	4
	27*.05	2.01 two family d.u. per acre	3
	27*.90	2.23 multi-family d.u. per acre	54
Total Dwelling Units:			6,088 d.u.

¹ Includes land with certain “partial development constraints” such as floodplains, wetlands and steep slopes.

² Several different uses are allowed in several of the districts. The buildout analysis assumes that the use breakdown would continue to be apportioned among these uses in the existing ratios.

Source: EOEA buildout analysis.

**Table 1-7
Commercial and Industrial Development**

Zoning District	Developable Acres¹	Effective FAR²	Gross Square Feet at Buildout
Neighborhood Business	3.0	0.00	0
Limited Business	0.8	0.30	10,821
Commercial Business	290.2	0.30	3,539,420
Limited Office Research	14.4	0.40	270,342
Office Research	47.0	0.60	1,225,637
Limited Industrial	300.0	0.80	10,101,395
Total	655.4	--	15,147,615

¹ Includes land with certain “partial development constraints” such as floodplains, wetlands and steep slopes.

² FAR (Floor-Area Ratio) is defined as the total gross square feet of building space on a lot divided by the lot area.

**Table 1-8
Potential Impacts of Buildout Development**

Potential Impact Area	Total Impact
Additional Developable Land Area (acres)	3,892
Total Additional Residential Units	6,088
Total Additional Residents	18,874
Additional Commercial/Industrial Buildout (s.f. of floor area)	15,147,615
Additional School Age Children	3,044
Total Additional Water Demand (GPD)	2,551,642
<i>Residential Water Consumption</i>	<i>1,415,571</i>
<i>Commercial and Industrial Water Consumption</i>	<i>1,136,071</i>
Additional Solid Waste	22,425
<i>Additional Non-Recyclable Solid Waste (tons)</i>	<i>17,693</i>
<i>Additional Recyclable Solid Waste (tons)</i>	<i>4,732</i>
Additional Roadway at Build Out (miles)	83

Sources: EOEa Buildout Analysis. Numbers are based on areas including wetlands.

1.4.2 Discussion of Buildout Results

The buildout analysis was prepared using a standard buildout methodology developed by the MA Executive Office of Environmental Affairs. However, determining the development capacity of a town is a somewhat inexact science, given the large number of variables involved. For example, the presence of steep slopes is not usually an *absolute* constraint to development, but it may be a *partial* constraint to development in the sense that it might prevent developers from building at the maximum density allowed by zoning.

The buildout analysis provides a conservative estimate of Shrewsbury’s total buildout capacity (that is, it tends to overstate the buildout capacity) because it does not subtract *partial* constraints, such as steep slopes, poor soils, floodplains, and wetlands from Shrewsbury’s total buildable land area.² On the other hand, the buildout analysis does not consider the fact that some of Shrewsbury’s already-developed land may be redeveloped in a more intensive way, particularly in the commercial and industrial districts.

1.4.3 Buildout Implications

The buildout scenario for Shrewsbury presents several challenges and implications for future planning in the town. Specifically:

- Buildout of the Town would result in a 70% increase in its population, from approximately 27,000 to 46,000, with commensurate increases in the demand for water and sewage disposal, schools and other public services, and solid waste disposal. Of the 6,088 housing units, approximately 5,400 will be single-family homes, if current development trends in the Residence B-2, MF-1, MF-2 and Apartment districts continue.
- Presently, the Town has about 3,900 acres of buildable land, or about 28% of the Town’s area. This is a sufficiently large amount of land that the Town will not be able to protect its open space and maintain its character by relying solely upon purchasing undeveloped land for conservation purposes. (For example, the recent \$5 million open space bond resulted in the purchase of about 270 acres of undeveloped lands.) If Shrewsbury wishes to protect its open space and pockets of

² For the purposes of the buildout analysis, wetlands, floodplains and other regulated areas are considered partial constraints because, although it is difficult to develop them, some of these areas may be counted toward the minimum lot size required for development.

rural character, it will need to couple land purchases with effective regulatory and design tools to maintain the character of unprotected lands, some of which will, inevitably, be developed.

- In the last four years, an average of about 250 new dwelling units per year have been built in Shrewsbury. If this growth rate continues, Shrewsbury could reach buildout by 2025.

1.5. Previous Studies

1.5.1 1972 Master Plan

The town's last Master Plan, completed in 1972 by the consulting firm of Metcalf & Eddy, Inc., viewed Shrewsbury primarily as a suburb to Worcester. The Town's "Area of Influence" was identified as the Central Massachusetts Region, and the Town's activities were dominated by the social and economic climate of Worcester. According to the study, it was estimated in August 1967 that the region's supply of open space was decreasing by 1,000 acres per year. As suburbanization was projected to be an important factor characterizing growth in the Worcester area, it was projected to have the most profound effect on Shrewsbury, with Shrewsbury's share of the region's population increasing dramatically. The report recommended against "inefficient" strip development, and instead favored development of the land behind frontage lands. The report identified the inadequacies of the major intersections in the town center—Main Street/Route 140 and Main Street/Maple Ave.—to accommodate existing and expected traffic demands. Finally, the report suggested the formation of Shrewsbury Historical Commission for the purpose of preserving historic structures, sites, and artifacts within the town.

1.5.2 1986 Residential Development Study

This study by the Central Massachusetts Regional Planning Commission (CMRPC) examined the existing trends occurring in Town and attempted to identify housing needs the Town would face in the future. This study pointed to the Town's need for affordable housing and suggested that two-family homes be allowed in more residential districts by special permit and fewer restrictions be leveled against home conversions. The report also suggested creating a Community Development Corporation to administer state and federal low-income housing programs and enacting an inclusionary zoning bylaw to offer incentives to developers for the construction of low-income units. In addition, the Town was advised to allow and encourage large-scale elderly development to accommodate the growing number of senior citizens.

In terms of neighborhood design, the report stated that some of the Town's roadway standards encouraged over-engineering and resulted in the creation of unnecessarily wide right-of-ways, which were identified as detrimental to neighborhood intimacy. It was also recommended that major housing projects be designed to be self-contained, offering a variety of housing types as well as a selection of mixed retail and service establishments (e.g. snack bars, hair salons, etc.). To protect and acquire open space, the report recommended enacting cluster zoning, creating an Open Space and Recreation Plan, and utilizing fee simple acquisition and Chapter 61 programs. It additionally recommended establishing a wetland protection bylaw and creating a non-profit land trust to preserve open space. Finally, more detailed site plan requirements were recommended, as were requirements for developers to contribute land or fees for the creation of parks and preservation of open space.

1.5.3 1986 Final Report on Commercial and Industrial Development

This CMRPC report intended to identify possible changes in Shrewsbury's regulation of industrial and commercial uses as then specified in the Town's zoning bylaw and map. The study concentrated on then-undeveloped lands. Recommendations made regarding uses included making more use of the neighborhood business district, thus reducing the time and distance residents must travel to make

purchases; instituting performance standards in the limited industrial district to limit negative impacts; and deleting office buildings and research laboratories from the Rural B district, thus requiring a zoning change to be approved by Town Meeting before such uses could be allowed in residential areas. The report additionally recommended the creation of a new shopping center district, to protect against the “profound effects” such a center can have on a commercial business district. The report additionally made a number of dimensional recommendations calling for increased provisions of open space, larger business lot sizes, and increased frontage requirements.

1.5.4 1997 Open Space and Recreation Plan

The Town’s last Open Space and Recreation Plan, completed in 1997, identified the Town’s continuing residential growth boom as a very real and significant threat to the preservation of open space. An Open Space Committee developed the Open Space and Recreation Plan with assistance from the Town, CMRPC, and residents who attended the public forums. Through this process, consensus was reached on the five most important goals identified to help the town protect its valuable open space resources. These included:

1. Acquire, through appropriate means, key open space parcels.
2. Plan and develop greenways in the town.
3. Preserve and enhance the Town’s recreational facilities.
4. Protect the town’s potable drinking water sources.
5. Protect surface water resources.

2. Natural and Cultural Resources

2.1. Introduction

This section of the Master Plan examines Shrewsbury’s existing natural and cultural resources, as well as the current status of their protection. Resources were identified using information from previous studies, MassGIS, the Massachusetts Natural Heritage and Endangered Species Program, and the Massachusetts Historical Commission.

2.2. Soils and Topography

2.2.1 Soils

In rural communities that rely upon the land for agricultural uses and septic systems, soil types and characteristics are a critical consideration in land use. This is less of an issue in Shrewsbury, where large portions of the Town are served by municipal water and sewer systems and where there are few agricultural operations. Areas characterized by poor soils, such as those with high water tables or many rocks, and steep slopes do pose some development constraints. However, on a townwide basis these constraints generally do not hinder development significantly.

The U.S. Department of Agriculture, Soil Conservation Services classified land in the Central Massachusetts Regional Planning District into 12 different categories. Only 5 of these soil types appear in Shrewsbury. The approximate percent of land area is shown in the table below.

**Table 2-1
Inventory of Soils**

General Soil Association/Group	Approximate Percent of Land Area
Winooski-Limerick-Saco	3%
Hinckley-Merrimac-Windsor	17%
Paxton-Woodbridge-Canto	61%
Chatfield-Hollis	8%
Urban Land-Hinckley	6%
Water	5%

Each soil association, or group of soils that appear together frequently in a repeated pattern, has characteristics that affect its suitability for development. The presence of steep slopes, bedrock, and large stones affect both the cost of excavation and the suitability of soil for development. Soils with low permeability are generally unsuitable for onsite sewage disposal. In addition, since a soil’s load-bearing capacity can influence the size of buildings constructed, soils can still affect development on a location-specific basis, even when public water and sewer service is available.

Of the five major soil groups found in Shrewsbury, the Hinckley-Merrimac-Windsor soils are generally regarded as the best suited for development. Chatfield-Hollis soils are more severely limited than the other groups. Shrewsbury’s most widespread soil group, Paxton-Woodbridge-Canton, has moderate development limitations associated with a high water table and the potential for frost action. Abundant rocks and stones in the Paxton-Woodbridge-Canton group can also hinder the development of certain recreational facilities, such as playgrounds.

2.2.2 Topography and Landscape Character

Shrewsbury is located at the western edge of a lowlands plateau, which forms the eastern half of Worcester County. The town's landscape varies with elevations ranging from 350' in the Edgemere section by Lake Quinsigamond to 755' at Rawson Hill in the north central area of town. This range of highlands extends southward through the middle portion of the Town from Rawson Hill, descending on the east to the Assabet River in Northborough and Westborough. Although no large areas with steep terrain exist in Shrewsbury, a number of small areas with steep slopes are scattered throughout the town. Steep slopes, particularly areas over 25%, can present limitations for development on individual parcels. However, on a town-wide basis, these areas do not pose a major constraint. The 1997 Open Space Plan recognized four areas characterized by steep slopes:

1. In the northwest, east of Sewall Hill;
2. Toward the southwest near the Grafton town line;
3. In the northeast along Union Hill; and
4. In the northeast along Rawson Hill.

Shrewsbury Ridge, which runs the length of the Town on its eastern border, offers many opportunities for scenic views. While, no publicly owned open spaces exist on the ridge, drive-by views from some of the Town's roads are possible. In addition, skiers can access the ridge at the privately-owned Ward Hill Ski Area.

At 755' above sea level, Rawson Hill, in the northeast part of town near Interstate 290, is the Town's highest point. Although a residential subdivision flanks it to the north, the hill itself is partially owned by the Town's Conservation Commission. The state owns an area to the south as part of its SUASCO (Sudbury, Assabet and Concord Rivers) watershed protection lands. Additional wetlands, some owned by the Conservation Commission, lie just east of this area.

Another important landscape feature is the 300+ acre Slocum Meadow, a wetland/floodplain area that covers a significant portion of the northwestern part of town, straddling Interstate 290. While some of the land is publicly owned, private landowners hold most of the property. There is no direct public access to the Slocum Meadow, although limited views are available from Gulf Street.

Boston Hill and Green Hill are located in southeastern Shrewsbury, the largest remaining undeveloped area in the Town. Although public access is limited, the hills can be viewed from neighboring towns. This area is bounded by Route 20 to the north, Cherry Street to the west and the town line to the east and south. Aside from residential development along Green Street and Arch Street, much of this area is sparsely developed and large tracts of intact forest and agricultural land remain. The state owns several large parcels as part of their Grafton State Hospital holdings. Most of this land remains undeveloped.

2.3. Surface Water Resources

2.3.1 Lakes, Ponds and Watersheds

Approximately 563 acres, or about 4% of Shrewsbury's total surface area, consists of open water in lakes and ponds. Lake Quinsigamond is a long, narrow lake which runs along most of the Town's western border with Worcester. The lakeshore is almost completely developed, and public access is available at only a few points in Shrewsbury. Other surface water bodies include Jordan Pond, Mill Pond, Newton Pond, portions of Flint Pond, and a portion of the Northborough Reservoir. As development has increased in the Town, so has the effect of pollution on the Town's water bodies. For Shrewsbury, a number of

hazards have contributed to diminished water quality in recent years, including old, on-site waste disposal systems, runoff from roads, and overflowing storm sewers. Efforts are ongoing to reduce pollution sources and correct water quality problems. For example, many of the old septic systems used by lakefront properties in the Edgemere neighborhood are in the process of being replaced by connections to the municipal sewer system.

In recent years, several of the beaches along Lake Quinsigamond had to be closed because officials suspected that raw sewage and stormwater was leaking in from the Belmont Street drain and nearby sewer pipes in Worcester. Jordan Pond has been plagued by water quality problems in recent years and is therefore no longer used for swimming. The town has not been able to pinpoint the source of the pollution. Lake Quinsigamond and Flint Pond have been beset with nuisance aquatic weeds, which is probably due in a significant part to failing septic systems in the Edgemere neighborhood. The Lake Quinsigamond Commission recently came before Town's Conservation Commission with a plan to lower the water levels in Lake Quinsigamond and Flint Pond during cold weather, thereby allowing frost to kill the aquatic weeds. The drawdowns will begin in 2000, and, if successful, will continue periodically.

Shrewsbury contains land within the watersheds of two major river systems: the Blackstone River watershed and the SUASCO watershed, which includes the Sudbury, Assabet and Concord Rivers. The Blackstone River watershed covers approximately the western two-thirds of the town, while the SUASCO covers the remaining areas in the east. Due to Shrewsbury's relatively high elevation, no major rivers pass through the Town. The most significant stream in the Blackstone River watershed is Big Bummet Brook which flows due south into Grafton. The most notable streams in the SUASCO watershed are Hop Brook and Straw Hollow Brook. A number of smaller streams flow across the town as well.

Water Quality Threats

As a result of state and federal environmental laws, it is believed that known "point sources" of pollution (i.e., pollution from a single discharge point) were identified and remediated years ago. Currently, the primary threat to water quality in Shrewsbury is "nonpoint source pollution," or polluted runoff. Nonpoint source pollution derives from many small, individual sources, including roads, farms, lawns and gardens, septic systems, parking lots, and other developed land uses. Nonpoint source pollution can adversely affect lakes, streams, and aquifers. Specific nonpoint source pollutants that are of concern in Shrewsbury include the following:

- **Sediment:** Sedimentation occurs when particles of silt, soil and sand are washed from exposed soils at construction sites, gravel operations, farms, landscaped areas, roads, and other altered areas. Sedimentation tends to increase the turbidity of lakes and streams, thus reducing its habitat and recreational value. In addition, sedimentation clogs wetlands and riparian zones, and reduces their flood storage capacity.
- **Phosphorous and Nitrogen:** Phosphorus and nitrogen are major constituents of wastewater effluent (human wastes, detergents, etc.) as well as chemical fertilizers. Because phosphorous and nitrogen are both critical plant nutrients, increasing the amount of these chemicals in the environment can cause algae blooms, reduced levels of dissolved oxygen, and changes in aquatic and terrestrial species composition. Nitrate (a form of nitrogen commonly found in groundwater that can contaminate drinking water supplies) is also a suspected carcinogen.
- **Metals:** Various metals are commonly found in urban runoff. Many metals are toxic to plants, wildlife and humans, and may also increase water treatment costs for public water supplies.

- **Pesticides and Herbicides:** Agricultural and horticultural chemicals derive not just from farms, but from lawns, gardens, and golf courses, which may use as much or more of these compounds per acre than farms. Most pesticides and herbicides are toxic to plants and animals (including humans) other than those that they are specifically intended to kill. Many pesticides and herbicides are very persistent in the environment and tend to “bioaccumulate” in the food chain (i.e., concentrations of the toxins are magnified in carnivores, such as birds of prey).
- **Pathogens – Bacteria and Viruses:** Biological contaminants derive from farms, urban runoff, septic systems, and improper waste disposal. These organisms can cause a host of public health problems, necessitate additional treatment for water supplies, and impair recreational resources such as swimming beaches. In addition, biological contaminants in runoff are a primary cause of closed fisheries and shellfisheries.
- **Salts:** Salts are used to de-ice roads and parking lots, but can have serious ecological consequences if used improperly or excessively. Often, the presence of salt will kill certain plant species, while favoring other, salt-tolerant invasive species, such as the Phragmites reed. Salts can also reduce the quality of drinking water sources.

2.3.2 Wetlands

According to the Open Space and Recreation Plan, Shrewsbury contains more than 500 acres of wetlands.¹ Wetlands perform important functions in the natural environment in that they provide areas for flood storage and storm damage abatement; fish, wildlife and plant habitat; and water quality and water resource enhancement. They also have intrinsic value in that they provide areas of scenic beauty and areas for recreational activities. While each of these aspects are important to Shrewsbury, it is especially important for the town to protect its wetlands because they recharge the groundwater aquifer on which virtually every residential and nonresidential property in Shrewsbury depends for its water supply.

Slocum Meadow, located in the vicinity of I-290 midway between the Route 140 interchange and the City of Worcester, is the largest wetland. It is comprised of wetland soils, an open stream (West Brook) and associated floodplains covering more than 300 acres. Aside from a few trails, the Meadow is almost entirely undeveloped. Several other large wetland areas are scattered throughout town including some in the northeast owned by the state as part of their SUASCO watershed holdings. Other wetland areas include lands just south of Dean Park and other areas in close proximity to the New England Power Company transmission lines northeast of Flint Pond. There are numerous smaller wetland areas throughout the Town.

2.3.3 Groundwater Resources

An aquifer is a geologic formation capable of yielding significant quantities of drinkable water. In general, aquifers are found in sand and gravel deposits where pores in the soil allow water to collect. Groundwater enters the aquifer through sand and gravel soils, wetlands, and surface water bodies, and slowly percolates through the ground in a down-gradient direction.

Shrewsbury has several aquifers within its borders, including a very large and productive aquifer, which runs from Boylston south into Shrewsbury through the area of Newton Pond, toward Lake Quinsigamond. (See Figure 2-1.) The Town’s most productive wells are located within this aquifer and include the Home Farm and Sewall Street wells. Shrewsbury has an inter-municipal agreement with the City of Worcester to allocate ground water resources from the Lake Quinsigamond aquifer. The agreement limits

¹ This number is probably more accurate than the wetlands figure presented in Table 1-2 (Land Use), which excludes forested wetlands and small pockets of unforested wetlands as well.

Shrewsbury's use to 58% of the safe yield or approximately 7.5 million gallons per day (MGD). This number is based on the levels at the Lake Quinsigamond aquifer. A smaller aquifer is located off South Street in the vicinity of Floral Street.

2.3.4 Water Supply

The Town's water system is extensive, serving nearly every home and business. Ground water wells supply all of Shrewsbury's water. The town has four wells. These include the very productive Home Farm and Sewall Street wells (located within the large aquifer) and the less productive Lambert and South Street wells. Safe yield for the current system is about 7.0 MGD while average use is about 3.6 MGD. Given the amount of residential development in the town and the continuing pace of development, the town has begun to experience a strain on its water supply due in large part to summertime lawn-watering. For the first time in recent history, the town instituted a voluntary water conservation/ban program during part of the summers of 1999 and 2000.

For the most part, Shrewsbury has utilized most of the usable capacity of its existing wells. The Town has hired a consultant to research potential water sources. One possible source has been identified on the newly town-acquired Scandinavian Athletic Club lands off Lake Street. According to the 1997 Open Space and Recreation Plan, sand and gravel mining has removed much of the soil cover in the area surrounding the Lake Quinsigamond aquifer, resulting in a diminished natural recharge capacity.

The Town has already experienced the effects of groundwater contamination when the highly toxic chemical TCE was detected in the water supply in the early 1990s. Subsequently the town has adopted stringent aquifer protection regulations. However, certain land uses in and around the Town's aquifers continue to pose a threat to the Town's drinking water. As a result of these pollutants, in 1990 the town constructed a water treatment facility at a cost of \$5.5 million. The facility's current capacity is approximately 6.0 to 6.5 mgd.

2.3.5 Existing Protection for Water Resources

Several federal, state and local environmental regulations protect freshwater resources against filling, inappropriate development, and other forms of alteration. The following are some of the most important environmental regulations that apply within Shrewsbury.

Wetlands Protection

Wetlands have both human and ecological importance for pollution control, flood control, storm damage protection, wildlife habitat, fisheries and groundwater supply. Wetlands in Massachusetts are regulated under the Massachusetts Wetlands Protection Act (310 CMR 10.00).

The Massachusetts Wetlands Protection Act applies to activity within 100 feet of bordering wetlands (wetlands bordering ponds, streams, the ocean, and other water features) and within certain isolated wetlands. The Shrewsbury Conservation Commission administers this law, and considers applications for activities in wetlands and buffer zones. Generally wetland alteration is allowed only in small areas when there are no feasible alternatives, and is subject to the condition that an equivalent amount of wetland must be replicated elsewhere. In wetland buffer zones, work is often allowed subject to an Order of Conditions from the Conservation Commission. Although the Conservation Commission has some discretion in deciding how much development to allow in wetlands and buffer zones, the MA Department of Environmental Protection has the authority to override any Conservation Commission decision. The Wetlands Protection Act does *not* provide protection for many small isolated wetlands, or for vernal pools.

Many Massachusetts communities have adopted local wetlands protection bylaws to supplement the state act. The purpose of these regulations is to provide additional protection for isolated wetlands not included in the state act, to allow greater control over proposed projects in the buffer zone, and to give greater review authority to the local Conservation Commission. In Shrewsbury, while there has been some discussion of passing a wetlands protection bylaw, it has not yet gone beyond the discussion stage. Shrewsbury does, however, have a minimum upland requirement, which requires that at least 15,000 square feet of each residential lot within the Rural, A, Rural B and Residence A Districts be contiguous upland.

Shrewsbury Aquifer Protection District

Recognizing the importance of the Town's aquifers for both natural systems and human water supply, Shrewsbury added the Aquifer Protection Bylaw to the Zoning Bylaw in 1988. While the Shrewsbury Conservation Commission was a party to this bylaw's successful adoption, the bylaw was developed largely in response to the community's heightened awareness of the importance of watershed protection. See section 1.3.2 for further discussion of the provisions of this bylaw.

2.4. Habitats and Ecosystems

2.4.1 Vegetation

Vegetation not only provides aesthetically pleasing views and landscape diversity, but is also a critical natural resource that forms the basis for habitats and ecosystems that support natural and human communities. In addition, vegetation helps to stabilize soils and prevent erosion, contributes to groundwater infiltration, serves as a visual and noise buffer between land uses, and improves local air quality.

Approximately 4,668 acres, or 33 percent of Shrewsbury's total acreage, is classified as forest according to 1999 land use data. This figure represents a 1,620-acre decrease from 1985 figures, resulting primarily from clearing for development. Where trees have not been cleared the remaining specimens are mostly second (or even third) growth. The original forest was extensively cleared to make way for agriculture. The town continues to have a good variety of hardwood, mixed hardwood, and softwood forest. Heights of mature vegetation range from 20' to over 50'.

Common deciduous trees include birch, oak (red, white, and pin), Norway maple, spruce, ash, black locust, shag bark hickory, hop-hornbeam, young chestnut, and staghorn sumac. Coniferous trees include pine (white and pitch) and hemlock. In the still relatively undeveloped southeastern area of town, a mixed forest of birch, hemlock, and oak covers much of the area. Witch hazel, black huckleberry, and Pennsylvania sedge typically dominate the understory. Although timber harvesting did historically play a role in the town's economy, today Shrewsbury's forests are not a major component of the local economy.

Red maples, green ash, American elm, ironwood, and dogwoods dominate overstory vegetation in forested wetlands. The canopy in such swamps often reaches 30'-40'. In general, the shrub level consists of highbush blueberry, arrowwood, alder, holly, witch hazel, winterberry, spicebush, shadbush, and sweet pepperbush. The ground layer is composed of cinnamon fern, dewberry, sphagnum mosses, and hydrophytic grasses. Cinnamon and sensitive fern, tussock sedge, reed canary grass, and sphagnum moss are the most common species found in wet meadows. Purple loosestrife, an invasive species, also dominates in such environments. Red maple and arrowwood can often be found in intermittent stream bank wetlands.

Shrewsbury has a nice example of a Black Oak – Scarlet Oak Forest/Woodland, on the Worcester-West Boylston- Shrewsbury line, south of Morningdale. According to the Division of Fisheries and Wildlife, this is a relatively uncommon, fire-maintained natural community, which occurs on often steep, shallow bedrock. Although the two dominant oak species are not uncommon in the state, the community is distinctive and the total acreage of the type is low. The south of Morningdale site supports a variety of wildlife species. Protecting the core area would aid in the continuation of the community type and would increase the likelihood the Town’s biodiversity would be maintained.

Flint Pond, at the southern end of Lake Quinsigamond, is much shallower than the main body of water and supports diverse wetland habitats. Large shallow bays and the surrounding wetlands support populations of emergent vegetation including broadleaf cattail, purple loosestrife, pickerelweed, swamp willow, arrowhead, and burreed. Along the perimeter exists a number of woody riparian species such as silky dogwood, speckled alder and red maple. This mix of vegetation creates an edge habitat for wildlife while also providing significant pollutant attenuation and sediment removal functions.

Few farms remain from Shrewsbury’s agrarian past. Several farms exist in the Town’s southeast quadrant. These are located off Cherry Street and off South Street. Other agricultural land exists in the northeast section of the Town, off Spring Street near the Northborough border.

2.4.2 Native Fish and Wildlife Species

Lake Quinsigamond has been identified as one of the region’s most important fishery resources. The lake contains several warm-water species such as northern pike, chain pickerel, common carp, white perch, and largemouth bass. The Massachusetts Department of Fisheries and Wildlife stocks the lake and surrounding ponds regularly with brook, rainbow and brown trout. Atlantic salmon brood stock has been introduced into Lake Quinsigamond in recent years, producing an adjunct fishery.

A number of the species found in Lake Quinsigamond are also found in Shrewsbury’s other ponds, such as Jordan and Newton Ponds. Many local residents take advantage of this recreational resource and fish in these water bodies as well as in Lake Quinsigamond.

Shrewsbury’s rapid residential development within recent years has had a harmful effect on the number and diversity of mammal and bird species found within the town. A diminishing supply of wetlands, wooded areas, and open fields has resulted in a loss of animal habitat and thus a loss of native animals. At present, several large continuous tracts of land still exist in isolated sections of the Town—such as Slocum Meadow and the southeastern area of Town around Cherry and Green Streets—and it is these areas that provide the best places for animal habitat. Figure 2-2 shows the areas of continuous as well as fragmented forest and wetland habitat.

According to the 1997 Open Space and Recreation Plan, approximately 200 species of birds either inhabit Shrewsbury year-round or have been observed in town during periods of migration. Year-round inhabitants, characteristic of birds found in central Massachusetts’ suburban communities, include chickadees, finches, starlings, sparrows, cardinals, woodpeckers, red-winged blackbirds, ruffed grouse, and red-tailed hawks. Wintering birds such as geese, ducks, and grebes flock to Lake Quinsigamond.

The north-south orientation of Lake Quinsigamond makes it especially significant as a link in the wildlife migratory corridor, which extends from Wachusett Reservoir in the north to Fisherville Pond in the south. The large expanse of open water around the lake attracts and supports many species which do not typically occur in such urban settings, including Canada geese, mallards, black ducks, spotted sandpipers, herring gulls, and green-backed heron. Flint Pond appears to provide better bird habitat than the main body of Lake Quinsigamond since it is shallower and has sizeable emergent wetland areas.

As the Town continues to develop, alteration of wildlife habitat will have a direct impact on birds. Some species, such as the bluebird, tree swallow, robin, house wren and house finch are able to utilize the wooded edges and open areas typical of suburban landscapes. Other species, however, require large contiguous habitat areas, are less tolerant of development, and will be displaced from Shrewsbury if large habitat areas are not preserved. These species include the towhee, wood thrush, vireos, and pileated woodpecker.

The 1997 Open Space and Recreation Plan reported the following species within Shrewsbury. In addition, residents have reported sightings of coyotes and hawks by the Route 20/Cherry Street junction in the southeast portion of the Town.

Animals (potential and reported)

gray squirrel	eastern cottontail rabbit	opossum
woodchuck	raccoon	bats
deer	red fox	muskrat
shrew	mole	long-tailed weasel
chipmunk	northern flying squirrel	white-footed mouse
Norway rat	meadow jumping mouse	coyotes
striped skunk		

Amphibians and Reptiles (potential and reported)

spring peeper	green frog	blue-spotted salamander
American toad	wood turtle	spotted turtle
northern water snake	eastern painted turtle	redback salamander
gray tree frog	wood frog	pickerel frog
Common snapping turtle	stinkpot	eastern box turtle
northern brown snake	eastern ribbon snake	northern ringneck snake
northern black racer	four-toed salamander	

Bird Species (reported and migratory)

great blue heron	green-backed heron	wood duck
American black duck	mallard	killdeer
house sparrow	downy woodpecker	<i>Emmpidonax</i> spp.
blue jay	American fish crow	black-capped chickadee
American robin	gray catbird	northern mockingbird
European starling	song sparrow	red-winged blackbird
hawk		

2.4.3 Rare and Endangered Species and Habitats

The Massachusetts Natural Heritage and Endangered Species Program (NHESP) provide an inventory of rare and endangered species and their habitats throughout the Commonwealth. This program seeks to identify habitat of plant and wildlife species, which are becoming increasingly rare and are in danger of extinction. NHESP-designated habitat areas are shown on Figure 2-2. This inventory includes the following classifications:

- **Estimated Habitat for Rare Wildlife:** These areas consist of wetland and adjacent upland habitats used by state-listed rare animal species, and are regulated under the MA Wetlands Protection Act. Anyone proposing a project within an Estimated Habitat must undergo project

review by NHESP. Six separate areas in Shrewsbury are listed as Estimated Habitats for Rare Wildlife in the *1999-2001 Natural Heritage Atlas*. According to the Division of Fisheries and Wildlife, one additional wetland along Meadow Brook, has been identified by the NHESP as a rare species habitat since the preparation of the last *Heritage Atlas*.

- **Priority Habitat for State-Listed Rare Species:** These areas indicate the most important habitats for *all* state-listed rare species, including both upland and wetland species, and both plant and animal species. These areas are intended for land planning purposes, and their status does not confer any protection under state law. Shrewsbury contains five separate Priority Habitats, all but one of which correspond to the Estimated Habitats.
- **Certified Vernal Pools:** Among Shrewsbury's important habitat features are vernal pools, an increasingly rare type of isolated wetland inhabited by many wildlife species, some of which are totally dependent on vernal pools for their survival. Vernal pools are small, seasonal water bodies occurring in isolated basins, which are usually wet during the spring and early summer and dry up during the later summer months. Vernal pools typically lack fish populations, making them excellent breeding habitat for many amphibian species and larval and adult habitat for many insect species, as well as other wildlife. The wood frog (*Rana sylvatica*) and all species of mole salamanders (genus *Ambystoma*) that occur in Massachusetts breed exclusively in vernal pools. Areas in the immediate vicinity of the pool also provide these species with important non-breeding habitat functions, such as feeding, shelter and overwintering sites.

Certified vernal pools have been inventoried by local volunteers and certified under NHESP's process. Certified vernal pools that are located within Areas Subject to Flooding (as defined by the MA Wetlands Protection Act) are protected under the Wetlands Protection Act for their wildlife habitat value. Neither state nor local law protects certified vernal pools outside of Areas Subject to Flooding. Uncertified vernal pools are also unprotected. Because vernal pools are temporary and seasonal, they can easily be developed unless they have been certified with the NHESP and have protection under the Wetlands Protection Act.

The protection of vernal pool habitat is essential for the continued survival of wildlife species that depend upon this unique type of wetland. Destruction or alteration of vernal pools is likely to have a highly adverse impact on the local (and world-wide) amphibian populations, because few if any of them will be able to find alternative breeding sites. The accelerated rate of development in the Shrewsbury vicinity makes it imperative that vernal pools be proactively certified and mapped so as to steer proposed development projects away from these critical habitats. Shrewsbury has one Certified Vernal Pool that was certified in 1996. It is located south of Route 9 and east of Cherry Street.

State-Listed Species

Shrewsbury's identified Species of Special Concern include the reptiles the **spotted turtle** (*Clemmys guttata*) and the **wood turtle** (*Clemmys insculpta*). Spotted turtles were seen in two locations in Shrewsbury in 1997 and 1998 while wood turtles have not been verified since 1987. Development and habitat fragmentation from increased residential development, construction of new roads, and destruction of upland habitats all severely affect these species.

Three listed plants are also believed to be found in Shrewsbury: **Philadelphia panic grass** (*Panicum Philadelphicum*), last seen in 1929, **black cohosh** (*Cimicifuga racemosa*), last observed in 1947, and **Houghton's flatsedge** (*Cyperus Houghtonii*), last seen in 1945. Philadelphia panic grass and Houghton's flatsedge are found in dry, sandy ground, while black cohosh is a species of dry or moist soil. Black

cohosh and Houghton's flatsedge are listed as "endangered," the highest level of concern; such species are in danger of extirpation in the Commonwealth.

2.5. Environmental Problems

According to the Open Space and Recreation Plan Shrewsbury has a total of 21 hazardous waste classified under Chapter 21E of the Massachusetts General Laws. The following generalizations apply to many of the sites:

- Many of the sites are located on Route 9 (five sites) and Route 20 (nine sites);
- Most of the sites are either active or former gas stations;
- The most common problems are either soil and/or groundwater releases of petroleum products from leaky underground storage tanks.

The single most troubled site is the former location of a wire and cable manufacturer on Route 9. Pollutants including PCBs, heavy metals, and chlorinated solvents have been detected on this site. Remediation began in 1997.

Two major landfills are located in town. The former town landfill, inactive since 1976, is located on the east side of North Quinsigamond Avenue about a ½ mile south of Main Street. The Central Massachusetts regional ash disposal landfill is located on the south side of Route 20 between Cherry and Green Streets. Byproducts from the regional waste combustion facility in Millbury are disposed of at this site. It was estimated in 1997 that this landfill would remain active until at least 2006. The site and combustion plant are both operated by Wheelabrator.

Due to its relatively small number of streams, the town has had very little experience with flooding. A state-owned water resource management area is located in the northeast corner of town, but it primarily functions to protect against downstream pollution and flooding. Local, state and federal laws regulate erosion and sedimentation from construction sites and new developments.

2.6. Historic Resources

2.6.1 Town History

The Town of Shrewsbury was incorporated on December 15, 1727. A series of land grants beginning in 1664 initiated the town's early settlement. The 3,200-acre grant called Haynes Farm (also known as Quinsigamond Farm) was the largest. The original area of Shrewsbury was considerably larger than the Town today, stretching from Lancaster in the north to Sutton in the south, and incorporating Worcester to the west and Marlborough to the east. Settlers came primarily from Sudbury and Marlborough and the first permanent settler was Gersham Wheelock who built a house on Main Street, near the current town common, in 1717.

In the early days, apple orchards contributed to the rise of an agricultural economy and by 1750 the town's business base had expanded to include two stores and four taverns as well as several small industries. The first tannery was started in 1762 on Gulf Street and by 1786 a leather industry was well underway. One successful entrepreneur, Nymphas Pratt, went on to found Citizens Bank in Worcester in 1836. Town farmers developed large cattle herds to support the manufacture of boots and shoes. In 1797, John Mason introduced gunsmithing, which produced rifles, shotguns and pistols and eventually cutlery. Samuel Wheelock built the first water-driven mill on Mill Street in 1721. In 1809, Luther Goddard began

making brass clocks and then established a small watch factory employing a few skilled Swiss and English watchmakers.

As the Town grew, mills were built to process raw materials. The Wyman Grist Mill was built around 1800 and stood downstream from a sawmill. Other mills included Slocum Mill north of the town common, Fay Mill on Prospect Street, Davis Saw Mill on Spring Street, the Harlow Mills off Sewall and Holden Streets, and a mill at the outlet of Mill Pond. Local sawmills in turn drew chair and cabinetmakers, plow and wagon builders.

The Town witnessed some difficult times during the Revolutionary War. The rapid fall of prices for agricultural goods, the shortage of hard currency and the general economic depression following the Revolutionary War proved devastating for colonists. Shay's Rebellion in 1786 sought to close the courts to prevent debt collections and the foreclosure of mortgages. Shrewsbury became a staging area for the rebellion and the encampment of the more than 400 insurgents, before the march on the Worcester Courthouse.

From the beginning, the town was fortunate in that it had a superior transportation network. The Connecticut Path (Main Street) was originally laid out in 1683 as a path connecting Boston to the Connecticut River towns. Holden Street was used even prior to the Revolutionary War and served as a country road connecting the town with Northampton. This road was part of the route that connected Boston with Vermont for many years. South Street provided access to sites on the Westborough border. The Boston Turnpike (Route 9) was completed in 1808 and originally crossed Lake Quinsigamond on a floating bridge.

Original development in Shrewsbury was centered in several areas. The largest was around what is still the town center at Main and Boylston Streets. There were other settlements around Straw Hollow in the northeast part of town and around present day Holden and Sewall Streets in the northwest part of town.

The development of streetcar routes in the 19th century spurred the growth of single-family housing development in town and a summer resort population on Lake Quinsigamond whose residents bought garden market produce grown by local farmers. As Shrewsbury's industry suffered from the lack of large waterpower sites and the tardy arrival of rail, its role as a suburb of Worcester grew more important. The residential development of Lake Quinsigamond's shores further preempted the Town's opportunities for industrial development. The Town's population doubled from 1915 to 1940 as continued streetcar growth brought more modern settlers into the community. The greatest growth occurred between 1920 and 1925 when the population increased by 2,111, or more than 50%. Other modern developments included an increased number of lakeside cottages, ethnic clubs and recreational areas on the lake.

2.6.2 Historic Sites

Although there is little information on Shrewsbury from the Contact Period (1500-1620), regional settlement patterns suggest that a low density of Nipmuck people took advantage of the area's freshwater resources. It is likely that they established permanent camps to the east and west. Two *1767 Milestones*, one on West Main Street and another on Boston Post Road at Dean Park, are listed on the National Register of Historic Places.

2.6.3 Historic Structures

Shrewsbury is fortunate to have a diverse mix of Early American architecture. More than 20 of Shrewsbury's historic structures are listed on the State and National Registers of Historic Places, either as individual properties or as part of districts. According to the inventory at Massachusetts Historical

Commission, architectural styles represented in the town include Colonial Cape clapboards, Colonial Revival cottages and larger homes, Federal and Greek Revival homes, Queen Ann style homes, “Bungalowoid” clapboard houses from the 1920s, Gothic Revival, Georgian Cape, and Georgian Federal. Aside from the architecture and the different eras they represent, with the history of Shrewsbury unfolds the history of the early colonial and Federal days.

The **Grafton State Hospital**, which straddles the Town’s border with Grafton, is part of a National Register Multiple Property Submission. The Grafton State Hospital site includes 8 structures.

The **Shrewsbury Town Common Historic District** is the Town’s only local historic district, and is also listed on the National Register. The district is delineated by Main Street, Church Road, Prospect Street, Boylston Street, and Grafton Street and includes 10 structures. Aside from the common itself, structures on the Register include the **First Congregational Church and Meeting House (1766)**, the **Fire House (1927)**, the **Brick School House (1828)**, the **Howe Memorial Public Library (1797)**, and the **Jonas Sloan House** as well as several homes and the cemetery.

The **Brick Schoolhouse**, located at Old Mill Road and Main Street, was historically known as No. 5 School. Currently used by the Shrewsbury Historical Society for their offices, the single-story, one-room schoolhouse was constructed of brick, five bays in length with a single entrance at the east end. At one time the town had seven district schools; today this is the last remaining one-room schoolhouse in Shrewsbury.

Howe Memorial Public Library, located at 609 Main Street, was constructed in 1903. Constructed of stone, this Modern Federal building was built by the town with a grant left to it by Jubel Howe, a poor boy who grew up in the town and became a successful watchmaker. Apprenticed to Luther Goddard, Howe was the first to be credited with making pocket watches on a large scale and within the price range of the average person. He eventually went on to work with Boston jewelers Crump and Lowe.

General Artemas Homestead, located at 786 Main Street, is the Town’s oldest homestead. This was the home of the first Commander-in-Chief of the Revolutionary Forces, who eventually turned his command over to General George Washington. The main part of the house was built in 1727, with an east wing added in 1730 by Nahum Ward and a west wing added in 1785 by Artemas Ward. The homestead, owned by Harvard University, is furnished as it was 150 years ago and is open free to the public from April through November.

The **Gershom Wheelock House**, located on Route 140, was constructed in 1720 and is regarded as the Town’s earliest house. A clapboard cottage with an attic, this building housed the Town’s first settler. It continues to be used for residential purposes and is still in excellent condition, much as it was in 1720.

The **Reverend Joseph Sumner House**, located on Church Street, is an early Federal Colonial style house built in 1797 by the Reverend, second minister of the Congregational Church. This house contains a number of elements salvaged from the Baldwin House, a house designed by master building Daniel Hemenway.

The **Isaac Stone House**, located on Oak Street, is a Georgian Cape and two-story Federal dating back to 1727. It is believed to be one of the Town’s earliest homes. Isaac Stone was a member of the Town’s first Board of Selectmen and served as Town Clerk from 1731 to 1736.

Pease Tavern, located on Main Circle, was constructed in 1784 or earlier. It was here that General George Washington stopped and met with General Ward and the militia gathered in Shrewsbury. Levi

Pease operated a stage run from this site and in 1786 applied for and was awarded the first government contract to delivery mail on a regular schedule.

The **Prudential Life Insurance Building**, located on Main Street, was constructed in 1957. A brick, flat-roofed structure with irregular, varied windows, this site's importance originates in the fact that it was at one time the site of the Home and Parsonage of Reverend Joseph Cushing, the first Minister of the First Congregational Church.

Historians regard the Chelmsford Ginger Ale Company's Ginger Ale Plant, a 1927 Art Deco building, as Shrewsbury's most significant 20th century landmark. Designed of brick, stucco, and concrete, the building is located at 335 Maple Avenue. A three-story office tower of stone, brick, glassblock, and stucco dominates the factory complex. An Ontario native founded the company in 1907. In 1925 it acquired the Worcester Products Company, the manufacturer of Cold Blast Ginger Ale. In 1928 Canada Dry Ginger Ale, Inc. acquired the Chelmsford Company but continued to market the Chelmsford product under its original name for many years. The plant closed in the 1970s and local department store Spags purchased the building.

2.6.4 Existing Historic/Cultural Resource Protections

The Shrewsbury Historical Society is a nonprofit organization that engages in research, documentation, and public relations related to historic structures, sites, and artifacts. In 1971 the Board of Selectmen convened a Historic District Study Committee and charged the committee with conducting preliminary investigations necessary to establish a local historic district Chapter 40C of the General Laws. The following year a local historic district was in place in the Town center and on October 8, 1976 it was placed on the National Register.

Listing on the State Register of Historic Places or a local historic inventory provides some amount of protection for these resources. Projects that affect listed historic properties may be required to undergo review by the Massachusetts Historical Commission and/or the Massachusetts Environmental Policy Act (MEPA). However, despite this review, most privately-owned historic structures are not ultimately protected from demolition or alteration.

The town learned this the hard way in the mid-1990s when a retail establishment wished to develop a store on the site of the Balch Dean Tavern (1740). The Balch Dean Tavern was originally a farmhouse owned by Captain John Maynard. By 1805 Balch Dean owned it and turned it into a tavern. Located adjacent to the Worcester Turnpike, then a toll road connecting Boston and Worcester, the tavern was ideally located to draw in travelers from this predecessor to Route 9. Although the structure survived a 1930 road realignment, it did not survive 1990s retail development. The tavern was moved 500 feet. As it had been moved and was no longer near the Worcester Turnpike, it was deemed to lack "setting" and "location" and is, as a result, no longer eligible for inclusion on the National Register of Historic Places.

3. Open Space and Recreation

3.1. Introduction

3.1.1 1997 Open Space and Recreation Plan

Shrewsbury's 1997 Open Space and Recreation Plan identified the Town's continuing boom in residential growth as a significant threat to the Town's remaining open space. Between 1987 and 1995, an average of more than 200 building permits for new residences were issued each year. In the past four years, the average has risen to 250. Residential development has a three-fold impact on open space and recreation. First, additional housing development, especially dispersed single-family housing, can quickly deplete a community's open space by consuming large amounts of land. (For example, from 1985 to 1999, Shrewsbury's population grew by about 21% while the amount of land devoted to residential development grew by 52%.) Second, as the Town's population grows, additional open space and recreational facilities are necessary to accommodate new residents. Finally, residential development promotes other types of development such as schools, shopping and places of employment.

The Open Space and Recreation Plan, which was created by an Open Space Committee assisted by the Town, CMRPC, and residents who attended the public forums, identified five primary goals related to open space and recreation. These included:

- Acquire, through appropriate means, key open space parcels.
- Plan and develop greenways in the town.
- Preserve and enhance the Town's recreational facilities.
- Protect the town's potable drinking water sources.
- Protect surface water resources.

Since the publication of the Open Space and Recreation Plan, several of its recommendations have been implemented. In particular:

- The Town has actively purchased and protected open space lands by approving a \$5.0 million override to buy open space in 1997.
- The Town has promoted its cluster development option to developers, resulting in more than 170 acres of protected open space in new subdivisions.
- The Town has developed improvement plans for some of the community's most popular recreation facilities and its new acquisitions, including Dean Park, the Scandinavian Athletic Club, and the Masonic property.

Unfortunately, other efforts recommended in the Open Space and Recreation Plan have not been as successful. While the Town pursued the idea of establishing a greenway to link to other surrounding communities, this effort has been thwarted by the lack of contiguous open space and public lands in the Town. The consultant hired to assist in trail planning concluded that Shrewsbury lacked the necessary connectivity to develop an off-road path that linked to other communities, and could only build an on-road bike path. As a result, the Town would not qualify for federal trail funding programs, which require a cross-town trail with links to other communities.

3.1.2 Developed and Undeveloped Land

From 1985 to 1999, the amount of developed land in Shrewsbury has increased from 4,957 acres (36% of the Town's land area) to 7,138 acres (51% of the Town's land area). Residential development alone has consumed about 2,000 acres of open space since 1985. (See Table 1-2 for additional details.) In recent years, new residential development has been occurring throughout the Town. Presently, the largest undeveloped areas are located in the southeast of Shrewsbury, and, to a lesser extent, in the south central, east central, and northwest areas of the Town. In the Open Space and Recreation Plan, the southeast was identified as the most suitable area for open space preservation for the following reasons:

- Water and sewer are generally not available.
- The local road network is generally less developed.
- Much of the area is still wooded or in agricultural production.
- Land in neighboring Grafton and Westborough is similarly sparsely developed.
- The area contains significant natural features including Boston Hill, Green Hill, and the Big Bummet Brook.

3.2. Open Space Inventory

Table 3-1 provides an inventory of Shrewsbury's protected and unprotected open space lands. In this table, "Level of Protection" refers to the potential of the property to be legally developed. For example, land owned by the Shrewsbury Conservation Commission or the Massachusetts Department of Environmental Management (DEM) are constrained by legal restrictions that prevent their development. In contrast, lands owned by other Town departments or by private parties may be legally developed by the owner, or may be sold to another party who could then develop them.

3.2.1 Public Land

The Town of Shrewsbury owns almost 1,500 acres of open space, including 634 acres of conservation land, 180 acres of recreation land, and 681 acres of unprotected open space. (The Town owns additional property that is not included in the open space inventory because it is largely developed with schools or other municipal facilities.) Unprotected open space includes many of the properties that were recently purchased with the \$5 million bond and which were designated for "municipal" use. This designation leaves open the possibility that municipal facilities will be developed on these lands in the future.

Shrewsbury's conservation holdings include Sewall Hill (74 acres); the 74-acre former Masonic Property on Route 140 just north of the town center; the former Allen property (67 acres); Rawson Hill (53 acres); Reed Road (45 acres); Newton Pond (36 acres); and the Slocum Meadow (approximately 50 acres). Other significant Town holdings include the Mountain View Cemetery (32 acres) and a 19-acre site that Shrewsbury recently acquired from the University of Massachusetts for use as a soccer facility.

Recently the Town has acquired almost 270 acres of open space for conservation, recreation and municipal purposes. Of this land, 44 acres are designated for conservation, 60 for recreation, and 166 for municipal purposes. These parcels include 28 acres of the former Scandinavian Athletic Club's 45-acre site, an additional 30 acres on Lake Street, a 70-acre parcel on Cherry Street, and the Worcester Sand and Gravel site in the northwest section of Town.

The State of Massachusetts owns about 69 acres of protected open space, mainly the SUASCO watershed lands along Rawson Hill Brook owned by DEM. The state also owns about 473 acres of unprotected open space in Shrewsbury, which includes the former Grafton State Hospital (170 acres owned by the Division

of Capital Asset Management and Maintenance) and the Glavin Center (140 acres owned by the Department of Mental Retardation). The Grafton State Hospital is presently being used as the Grafton Job Corp and Gymnasium. Neither the Hospital site nor the Glavin Center is permanently protected from development; therefore either one could be sold and developed.

**Table 3-1
Protected and Unprotected Open Space in Shrewsbury**

Owner/Manager	Number of Parcels	Total Acres	% of Town	% of Open Space
Permanently Protected Open Space				
Town of Shrewsbury	78	634.4	4.6%	17.3%
State of Massachusetts	5	68.9	0.5%	1.9%
Cluster Open Space ¹	18	173.1	1.2%	4.7%
Other Private Protected Land	1	25.5	0.2%	0.7%
Permanently Protected Open Space Subtotal	102	901.9	6.5%	24.6%
Temporarily Protected Open Space				
Chapter 61 (Forestry) Land	3	79.8	0.6%	2.2%
Chapter 61A (Agriculture) Land	16	280.8	2.0%	7.7%
Chapter 61B (Recreation) Land	3	80.5	0.6%	2.2%
Temporarily Protected Open Space Subtotal	22	441.0	3.2%	12.0%
Unprotected Open Space				
Town of Shrewsbury Recreation Land	12	179.6	1.3%	4.9%
Town of Shrewsbury – Other Lands	29	681.4	4.9%	18.6%
State of Massachusetts	3	473.3	3.4%	12.9%
Unprotected Private Parcels >10 Acres ²	37	988.8	7.1%	27.0%
Unprotected Open Space Subtotal	81	2323.1	16.7%	63.4%
Total Open Space	205	3666.0	26.4%	100.0%

Sources: MassGIS, Shrewsbury Assessors Office, Shrewsbury Town Planner.

¹ Open space created as part of cluster subdivisions, pursuant to the Town’s cluster zoning bylaw.

² Excludes parcels that are included in any of the other open space categories.

3.2.2 Private Land in Active Use

Private entities own a significant portion of the Town’s open space. About 441 acres of private land is being actively used for agricultural, horticultural, or forestry production, or is managed to provide specific recreational opportunities. Land in active use is eligible for a reduced tax rate under Chapters 61, 61A and 61B of the Massachusetts General Laws, which provide tax credits to landowners who retain their land in forestry, agricultural or recreational uses, respectively, rather than selling or developing this land.

Chapter 61 is designed to keep forested land under productive forest management. Owners with more than 10 acres of forest are eligible for enrollment. They must submit a DEM-approved forest management plan and a management certificate to the Town assessor for a new tax classification to begin. The assessment of land classified under Chapter 61 is reduced by 95%. The loss of taxes to the Town is partially offset by a yield tax of 8% that the owner pays on the value of wood harvested from the land annually. The town also places a lien on the property in the Registry of Deeds, which is a notice to all purchasers that the property is subject to the provision of Chapter 61. Chapter 61 classifications run for ten-year periods. Shrewsbury currently has 79.8 acres of Chapter 61 land.

Chapter 61A is most commonly applied to agricultural or horticultural land but can be used for the forested portions of a farm, provided a forest management plan is approved by DEM. To qualify for Chapter 61A, a farm owner must have five or more contiguous acres being used for agricultural or horticultural purposes. Property under Chapter 61A is assessed at rates that vary for different agricultural uses. Generally, classification will result in an 80% reduction in assessed value. Shrewsbury currently has 280.8 acres of land classified under Chapter 61A.

Chapter 61B is similar to 61A, but applies to lands designated for recreational use and containing at least five contiguous acres. The land must be retained in a natural state to preserve wildlife and natural resources, must be devoted primarily to recreational use, and must provide a public benefit. Recreational uses include golf, hiking, camping, nature study, shooting/target practice, hunting, and skiing. The assessed valuation of Chapter 61B land is reduced by approximately 75%.

There are penalties associated with removing land from classification under Chapter 61, 61A, and 61B that include paying back taxes plus interest. If Chapter land is placed on the market, the Town has the “right of first refusal” for purchase of the land for 120 days. This right may also be assigned to a non-profit conservation organization such as a land trust. In reality, towns often have trouble taking advantage of the right of first refusal because they must have available a large cash reserve to buy the land as well as a political structure that can quickly approve the purchase. For practical purposes, Chapter lands are protected only tenuously and temporarily.

While the Town has encouraged landowners to enroll in the Chapter programs, the economic feasibility of farming, forestry, and certain types of recreational uses continues to decrease as Shrewsbury becomes more developed. In recent years, rather than emphasizing Chapter 61 enrollment, the Town has encouraged landowners seeking to develop their land to donate separate, stand-alone open space parcels to the Town.

3.2.3 Other Private Land

Privately owned open space exists throughout Shrewsbury, and includes undeveloped forests, fields, and wetlands. These lands range from large undeveloped parcels to small tracts of woodland adjacent to suburban backyards. Of the Town’s privately-owned open space, only about 200 acres is protected from development. Most of this land (173.1 acres) is open space dedicated as part of recent cluster subdivisions. However, the vast majority of private open space is not protected from development, and is gradually being developed.

Of the private unprotected open space, large parcels are generally the most important ones to consider in open space planning since they can provide substantial areas for habitat, recreation, or other purposes. In addition, these large parcels may be in greatest danger of development because they are the most appropriate locations for new residential subdivisions. Shrewsbury contains about 989 acres of private unprotected open space in parcels 10 acres or larger.

One type of private open space that is lacking in Shrewsbury is land owned or managed by non-profit land trusts or conservation groups. Currently, the New England Forestry Foundation (NEFF) is the only non-profit that holds land in Shrewsbury. Non-profits, unlike municipalities, can act quickly when opportunities to purchase open space lands arise. Several organizations that could potentially assist Shrewsbury in protecting its open space include the Greater Worcester Land Trust, the Sudbury Valley Trustees, the Grafton Forest and Lands Conservation, the Massachusetts Audubon Society, and the Trustees of Reservations.

Large parcels under private ownership include 170 acres owned by St. John’s High School and 130 acres owned by the New England Power Company.

3.3. Passive Recreation Inventory

The Town owns a variety of recreational parks ranging from the 78-acre Dean Park to the 13-acre Ireta Road Open Space. Town-owned recreation facilities are discussed in the Public Facilities and Services section of this document. The following inventory focuses on privately-owned and state-owned recreation facilities.

- **Ward Hill Ski Area:** This 40-acre ski facility is located on Main Street near Spring Street.
- **Worcester Rifle Range:** Approximately 130 acres in the northwest of Town, this range is owned by the City of Worcester and is used for police training.
- **St. John's High School:** The school owns 160 acres on Main Street in the center of Town, part of which is used for ballfields and other recreational facilities for St. John's students.
- **State Boat Ramp, Flints Pond:** Located off Oak Island Lane, this State Boat Ramp is adjoined by a large parking lot
- **Sunset Beach:** Sunset Beach, off Old Faith Road, is privately owned, but the public may pay to use it. The Parks and Recreation Department uses the beach for children enrolled in its summer playground program.
- **Ray Stone Legion Post:** The Town regularly uses this Legion Post for indoor recreational activities since there is a lack of indoor recreational space available in Shrewsbury. The Parks and Recreation Department often utilizes the function room and kitchen of the Post for pre-school and special needs students programs.

A major shortfall of the Town's recreation facilities is the lack of public waterfront and beach, despite the large amount of lake and pond shoreline within the Town. Oak Island, Lakeview Landing, and the municipally owned southern end of Jordan Pond all provide free waterfront access. However, Jordan Pond is no longer swimmable because of water quality problems. Sunset Beach provides water access to the public, but the beach is privately-owned and requires payment of a fee.

3.4. Provisions for Open Space Protection

Local and state environmental regulations offer some protection for certain open space areas. Regulations prohibit most development on and/or near wetlands, streams, ponds, and, in some situations, floodplains. Limited restrictions also apply to areas with rare species habitat, high groundwater, and other environmental constraints. However, environmental regulations do not provide complete protection for jurisdiction areas since environmental laws are subject to change and may be circumvented in certain circumstances.

Shrewsbury has adopted a cluster zoning bylaw and encourages clustering in many new residential subdivisions. Cluster zoning allows developers to build houses on smaller lots than would ordinarily be allowed in exchange for setting aside a portion of the development site as protected open space. Five recent cluster subdivisions have resulted in more than 170 acres of protected open space. An examination of the open space created in this manner reveals that some of it is useful for wildlife habitat, visual buffering, or, potentially, greenway trails. Some of the open space, however, is little more than leftover fragments of land that would not have been developed anyway. Nevertheless, cluster zoning appears to have been relatively successful in cases where it was used.

In addition to the cluster provisions, the subdivision regulations require that 8% of the gross land area of a subdivision must be set aside for open space and parkland. The Town typically requires this land to be uplands.

4. Economic Development

4.1. Shrewsbury's Economic Profile

Shrewsbury has a diverse and dynamic business base that includes significant regional shopping centers, office parks, manufacturing facilities, and other businesses. In a recent report by MassInsight entitled, "Massachusetts Expansion: Trends in Location Decisions," Shrewsbury was ranked number four among the top 20 cities and towns for employment and establishment growth in the Commonwealth. The Town's excellent highway network, proposals to extend sewer along Route 20, and the low commercial and industrial property tax rates all contributed to this assessment.

The following section documents Shrewsbury's economic characteristics, including the labor force, employers, and types of businesses in the Town. The statistics provided here are based on the most recent available data from the 1990 U.S. Census of Population, the 1997 U.S. Economic Census, the Massachusetts Division of Employment and Training, the Central Massachusetts Regional Planning Commission, the Massachusetts Institute of Social and Economic Research (MISER), and the Town of Shrewsbury. For additional demographic information, see Appendix A.

4.1.1 Labor Force and Unemployment

In 1998 there were 14,653 people in Shrewsbury's labor force. Shrewsbury's unemployment rate is consistently lower than the unemployment rate for Massachusetts and for the Worcester County. Otherwise, employment trends in Shrewsbury have mirrored those in Worcester County and Massachusetts, with an unemployment peak during the 1991 recession followed by declining unemployment through the 1990s.

Table 4-1
Average Annual Labor Force and Unemployment, 1988-1999

	-----Shrewsbury-----		-----Worcester County-----		-----State-----
	Labor Force	Unemployment Rate	Labor Force	Unemployment Rate	Unemployment Rate
1988	13,148	2.1	341,468	3.4	3.3
1989	13,166	2.7	343,109	4.4	4.0
1990	13,369	5.0	365,267	6.9	6.0
1991	13,100	7.7	358,952	10.9	9.1
1992	13,362	7.3	357,748	9.6	8.6
1993	13,926	5.5	361,711	7.1	6.9
1994	14,280	4.6	361,522	5.5	6.0
1995	14,213	4.0	356,520	5.2	5.4
1996	14,365	3.0	356,504	4.2	4.3
1997	14,844	2.8	372,919	3.9	4.0
1998	15,091	2.4	370,396	3.4	3.3
1999	15,290	2.6	367,914	3.4	3.2

Source: Massachusetts Division of Employment and Training. Local Area Unemployment Statistics, U.S. Bureau of Labor Statistics.

4.1.2 Occupation of Shrewsbury Residents

Employment of Shrewsbury’s residents is characterized by a predominance of “white collar” occupations that surpasses the national, state, and county averages. In 1990, nearly 45% of Shrewsbury’s labor force was employed in managerial, professional, or technical occupations. This far exceeds the national, state and county averages, which range from 30% to 36%. These occupation types are often among the better paying positions.

More than 7% of Shrewsbury residents held “other service positions” while another 8.5% were employed in precision or crafts production. These occupation figures are considerably lower than national, state, and county averages. The implications of Shrewsbury’s labor force composition are easily apparent. In 1990 the median household income among Shrewsbury residents was \$44,248. This was considerably higher than both the state average (\$36,952) and the national average (\$30,056). See Table 4-2 for additional details regarding occupation comparisons and see Appendix A for additional demographic information. See Appendix B for the business profile of the Town.

**Table 4-2
Percentage of Employment By Occupation, 1990**

	Shrewsbury %	Worcester County %	State %	U.S. %
Executive, administrative, and managerial	18.1	13.3	14.6	12.3
Professional specialty occupations	20.3	15.9	17.4	14.1
Technicians and related support occupations	5.1	4.2	4.2	3.7
Sales occupations	13.3	10.8	11.4	11.8
Administrative support occupations	17.1	16.9	17.3	16.3
Private household occupations	0.1	0.2	0.3	0.5
Protective service occupations	1.8	1.8	2.0	1.7
Other service occupations	7.6	10.7	10.6	11.0
Farming, forestry, and fishing occupations	0.6	1.0	0.9	2.5
Precision production, craft and repair	8.5	11.2	10.0	11.3
Machine operators, assemblers, inspectors	3.0	7.4	5.6	6.8
Transportation and material moving occupations	2.3	3.4	2.9	4.1
Handlers, equipment cleaners, helpers, laborers	2.1	3.3	3.0	3.9
Total Residents Employed	100.0%	100.0%	100.0%	100.0%

Source: U.S. Bureau of the Census

4.1.3 Industry of Shrewsbury Employees

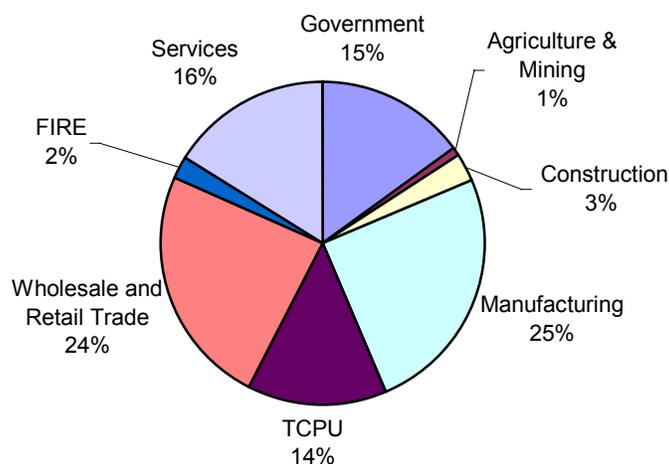
Information on the previous page discusses the *occupation* (type of work) of Shrewsbury *residents*; this page discusses the share of employment by *industry* for Shrewsbury *workers*. The largest industries in Shrewsbury are manufacturing (25%), wholesale and retail trade (24%), services (16%), government (15%), and transportation, communication and utilities (14%). The Town has experienced a significant increase in both its population and its workforce since 1990. This is having a widespread effect on several industry sectors, such as the government sector, which has grown significantly since 1988. Table 4-3 presents a time series comparison of employment by sector in Shrewsbury.

**Table 4-3
Employment by Industry in Shrewsbury**

	Average Annual Wage	Number of Establishments	Total Employment	Agri., Forest, Fishing	Gov	Const.	Manufacturing	Transportation, Comm., Utilities	Wholesale & Retail Trade	Finance Insurance Real Estate	Service
1988	\$23,578	610	11,034	150	943	557	2,860	1,738	3,140	255	1,137
1989	\$24,612	621	11,340	141	931	450	2,903	1,617	3,414	171	1,672
1990	\$25,670	641	10,805	125	941	363	2,645	1,654	3,154	169	1,720
1991	\$26,232	624	9,939	94	947	287	2,310	1,458	3,068	193	1,557
1992	\$28,487	593	10,889	64	955	289	3,080	1,540	3,269	192	1,472
1993	\$27,978	593	11,701	51	1,752	245	3,140	1,452	3,356	203	1,470
1994	\$29,117	634	12,015	57	1,777	281	3,187	1,406	3,523	242	1,502
1995	\$31,450	675	12,616	68	1,761	310	3,491	1,512	3,524	279	1,634
1996	\$33,524	717	13,250	83	1,742	330	3,506	1,782	3,515	341	1,909
1997	\$35,052	716	13,664	88	2,160	385	3,273	1,758	3,481	363	2,113
1998	\$38,161	736	14,653	96	2,205	412	3,674	2,022	3,507	353	2,338

Source: Massachusetts Division of Employment and Training (covered employees only). U.S. Bureau of Labor Statistics, Current Employment Statistics Survey.

**Figure 4-1
Distribution of Employment in Shrewsbury (1998)**



4.1.4 Local Employment Trends

In 1998 a total of 736 business establishments in Shrewsbury employed 14,653 persons. The average annual wage for employees in Shrewsbury in 1998 was \$38,161. Contrary to the trend occurring elsewhere in the nation, the highest number of jobs continues to be in manufacturing (25%), followed closely by trade (approximately 24%). Services and government provided about 16% and 15% of employment, respectively, while transportation, communications, and public utilities accounted for another 14% (see Table 4-4 and Figure 4-1).

Total employment in the CMRPC region¹ has increased by 22,560 jobs or 11.2% since 1990. During this same period, employment in Shrewsbury has increased by 3,836 jobs or 35.6%. Shrewsbury alone accounts for 17% of the new employment in the CMRPC region since 1990, second only to Westborough (5,156 jobs and 23%) and Worcester (4,301 jobs and 19%).

The economy in Shrewsbury has remained fairly steady throughout the past decade. The number of establishments and total employment decreased slightly during the recession of the early 1990s, but rebounded quickly and since 1995 has risen above peak levels of the previous decade. The number of establishments in 1998 shows a 15% increase over the 1990 peak. (See Table 4-3.)

Commuting patterns for Shrewsbury residents and Shrewsbury employees are summarized in Table 7-3 in Section 7.5. According to recent statistics, Shrewsbury has 0.97 jobs for each Shrewsbury resident in the labor force.

4.2. Shrewsbury Businesses

Table 4-4 lists the largest employers in the Town as reported by the individual employers. Of the ten employers listed, it should be noted that two are government-affiliated: the United States Post Office and the Irving A. Glavin Regional Mental Health Center, which is operated by the Massachusetts Department of Mental Retardation.

¹ The CMRPC region consists of 40 communities including Auburn, Barre, Berlin, Blackstone, Boylston, Brookfield, Charlton, Douglas, Dudley, East Brookfield, Grafton, Hardwick, Holden, Hopedale, Leicester, Mendon, Millbury, Millville, New Braintree, North Brookfield, Northborough, Northbridge, Oakham, Oxford, Paxton, Princeton, Rutland, Shrewsbury, Southbridge, Spencer, Sturbridge, Sutton, Upton, Uxbridge, Warren, Webster, West Boylston, West Brookfield, Westborough, and Worcester.

**Table 4-4
Largest Employers (Year 2000)**

Company	Production/Function	# Employees
Mescaster Company, Inc. (UPS)	Parcel Delivery	1,300
Compaq	Computers	1,200
Quantum Corp.	Computers	900
United States Post Office	Distribution Facility	775
Spags Supply	Retail Store	450
University of Massachusetts Medical School (Worcester Foundation)	Research Lab	200
Jamesbury Corporation	Ball Valves	174
Irving A. Glavin Regional Center	Mental Health Center	160
Elkay Products	Medical/Lab Supplies	140
Hebert Candy Mansion	Candy Makers	100

Source: Town of Shrewsbury's Bond Perspective. Individual employer survey.

The U.S. Census Bureau recently released the 1997 Economic Census, which is useful in identifying the specific industries in Town and their relative significance. Selected data from this Census is presented in Appendix B.

4.3. Business Zoning

Shrewsbury has six commercial, industrial, and office zoning districts. In general, the business districts are located along major roadways in the Town, including Route 9, Route 20, Maple Avenue, and Holden Street. While these districts vary, for the most part they allow a variety of commercial uses, including retail stores and restaurants, personal service establishments, banks, and professional offices. A number of other uses, such as residential, conservation, selected industrial uses, and institutional uses, are also allowed as-of-right in several of the districts.

4.3.1 General Business Districts

The Limited Business districts extend 250-300 feet deep from portions of Route 9 west of Maple Avenue and in the town center. This relatively shallow depth is best suited to smaller businesses that do not require extensive parking, and to businesses that tend to orient parallel to roads in a "strip commercial" pattern. However, 300 feet is typically not deep enough to accommodate large businesses that require extensive parking (such as supermarkets), or larger shopping centers. According to the 1999 buildout analysis, there is very little developable land remaining in the LB District, although redevelopment possibilities exist. The segment of Route 9 that is zoned LB is noticeably different from the remainder of Route 9 in its more compact development pattern and the types of businesses located along the segment (i.e. small scale retail and services as opposed to the big-box retail stores which characterize much of the remainder of Route 9).

Commercial Business Districts range 400 feet to more than 1,500 feet deep, and therefore offer more flexibility for development. These larger zoned parcels are located primarily along Route 9, Route 20, and off Holden Street. Large retail shopping centers tend to be developed in this district. The Olde Shrewsbury Village, White City, and Fairlawn Plaza are some examples of this type of development. According to the 1999 buildout analysis, 3,539,420 gross square feet (gsf) of new development could be accommodated in the CB district. Redevelopment possibilities also exist.

The Neighborhood Business District contains 2 acres at the intersection of Main and South Streets, the site of the vacant Julio's Star Market. This district differs from the other business districts in that it was established to provide neighborhood goods and services. In its 1985 report on commercial and industrial development in Shrewsbury, CMRPC suggested that this district be used more throughout the Town in order to decrease the time and distance residents must travel to make purchases. In addition, CMRPC recommended that this district allow more than one business with a building to promote more of a neighborhood shopping environment. Currently, there is no developable land within in this district but the district presently houses the vacant.

Existing businesses in the general business districts include several shopping centers. The Fairlawn Shopping Plaza on Route 9 is accessible to pedestrians and is still popular with residents. However, despite a major renovation several years ago, it is still subject to a high rate of turnover. The White City Shopping Center, located at the intersection of Route 9 and South Quinsigamond Avenue, was formerly an amusement park. Cherry and Webb, CVS, and Bradlees are all former tenants that have either closed or relocated. The shopping center's vacancy rate was estimated recently at 23%. The Massachusetts Highway Department is presently developing a plan to widen Route 9 at the South Quinsigamond Avenue intersection, which would result in a loss of approximately 100 parking spaces from White City and might prompt the departure of additional tenants. Sears Edgemere Plaza, an older strip development located on Route 20, has much smaller retail shops. At present there exists a minimarket, a sports pub, and a karate instruction center. Olde Shrewsbury Village, located at the intersection of Route 9 and Walnut Street, houses a Sears, a Jo-Ann's Fabrics and Crafts, as well as a number of retail outlets. Overall, the vacancy rate for retail businesses is estimated to be approximately 8% according to Town officials.

In addition to the large shopping centers, the general business districts contain several independent and chain stores. Independent businesses along Route 9 include Gauch Bros. Marina, Worcester City Motel, and the local department store Spags. Chain establishments on Route 9 include Mattress Giant, CVS, Ground Round, Blockbuster, and Subway. Route 70 (Holden Street) in the northwest corner of Town is home to a variety of uses including retail boat sales, an aquarium supply store, several restaurants, and a self-storage facility. The former Digital Equipment Company (now Compaq) research and development office park is located within a CB district on South Street.

4.3.2 Industrial, Office and Research Districts

The Limited Industrial district is Shrewsbury's primary industrial district. The LI district ranges from 600-1500 feet wide, and is located along portions of Route 9, Route 20, and Holden Street. This district allows for the development of research laboratories, office buildings, and light industries. Research and industrial uses allowed include manufacturing enterprises, research laboratories, basic and applied research and development, contractors' yards and storage yards, trucking terminals and warehouses, building materials salerooms, and printing or publishing establishments. According to the buildout analysis, the LI district could accommodate about 10 million gsf of new development.

The Office Research and Limited Office Research Districts provide space for research laboratories and office buildings. Permitted uses include research laboratories, basic and applied research and development in the pharmaceutical, biotechnology, and biomedical fields, as well as other related uses. The OR district consists of the vacant parcel of land at the northwest corner of the I-290/Route 140 interchange. The LOR district consists of the former Worcester Foundation for Experimental Biology site on Maple Avenue near the center of Town. According to the buildout analysis, the LOR district could accommodate 270,342 gsf of new development, while the OR district could accommodate 1,225,637 gsf.

Lack of public water and sewer is currently a limiting factor in the development of high-value uses in the LI districts. As recently as 1989, much of the land fronting Route 20 was vacant due to the road's lack of

public sewers. Today existing uses along Route 20 primarily include trucking, distribution, and other uses that generate little wastewater. Businesses that front the road include NationsRent, Dillon Tree Trimming, UPS trucking terminal, RPS, Active Truck Service, Inc., and Conway Central Express (CCX).

The current vacancy rate for office space in the town is estimated at about 3%. CenTech Park, an industrial park, is located on the Grafton/ Shrewsbury border, with some parcels in Shrewsbury. The park had been vacant since its development about five years ago. The Worcester Business Development Council is currently in charge of the site and is actively seeking tenants. A consulting firm was recently hired to re-master plan the CenTech site. The CenTech parcels in Shrewsbury can accommodate a 150,000 sf building and a 25,000 sf building. The Town owns a large parcel just north of the site, and there has been discussion of building a new connector road from CenTech out to Route 20.

4.4. Tax Base

The tax base in Shrewsbury is primarily residential, with homeowners providing approximately 84% of the tax revenues. Commercial and industrial comprise about 10% and 5%, respectively, of the taxable property in Shrewsbury. (See Table 4-5.)

**Table 4-5
Total Property Values in Shrewsbury by Land Use Category, January 2000**

	Assessed Property Value	%
Residential	1,805,064,662	84.1%
Open Space	2,337,168	0.1
Commercial	207,669,945	9.7
Industrial	100,724,300	4.7
Personal Property	30,127,106	1.4
Total (taxable only)	2,145,953,181	100.0%

Source: Massachusetts Division of Local Services, Municipal Data Bank

Table 4-6 compares Shrewsbury’s tax base with that of neighboring communities. Massachusetts requires its municipalities to conduct regular property re-valuations, so the figures presented below are all based on recent valuation data. Shrewsbury’s residential tax rate (dollars per \$1000 of assessed valuation) is lower than the regional average. The average residential property tax bill is slightly higher than both the state and regional averages, but significantly lower than in most of the immediately surrounding communities.

**Table 4-6
Comparison of Tax Base - Neighboring Communities (Fiscal Year 2000)**

	% of Total Assessed Valuation			Tax Rate Res./Nonres. ²	Avg. Res. Assessed Value	Avg. Res. Tax Bill
	Residential	Commercial	Industrial			
Boylston	88.1	6.4	3.6	16.89/18.81	\$191,577	\$3,235.74
Grafton	87.7	5.6	3.7	15.80	\$156,419	\$2,471.42
Millbury	81.6	5.3	5.9	15.66	\$123,650	\$1,936.35
Northborough	79.0	8.1	10.3	16.84	\$205,436	\$3,459.55
Shrewsbury	84.1	9.7	4.7	13.34³	\$179,090	\$2,389.06
Southborough	78.4	11.8	6.4	14.30	\$281,311	\$4,022.74
West Boylston	79.0	11.2	5.9	18.00	\$150,297	\$2,705.35
Westborough	57.9	18.0	17.6	15.12	\$245,285	\$3,708.71
CMRPC Region				15.48	\$138,604	\$2,145.53
State Average						\$2,323.00

Source: Mass. Data Bank, Mass. Department of Revenue.

4.5. Needs, Issues and Opportunities

Many of the regulations related to commercial and industrial development within the town have seen few revisions since the Town's zoning bylaw was first adopted in 1967, and may be inconsistent with the Town's current vision for the future. For example, Shrewsbury has a large amount of strip commercial zoning along many of the major roadways in town. Given the changing form of commercial development patterns, the town may want to review the allowed uses, site plan requirements, parking and signage requirements and revise them so that they reflect the needs of the business markets that the Town wishes to attract and foster. In addition, several industrial and commercial parcels fall within the areas delineated as an Aquifer Protection Overlay District. Zoning on these sites may be inconsistent with effective aquifer protection.

Several business needs and opportunities were discussed during Master Plan public meetings and focus groups. Some citizens expressed a need for more businesses providing essential goods and services to town residents within convenient proximity to residential areas. Others pointed out that investing in infrastructure to serve areas zoned for business would result in more valuable development and redevelopment over time. Many residents wished that the western portion of Route 9 could be a more attractive business and shopping district.

As the market for office space and research and development industrial space becomes tighter within the I-495 region, Shrewsbury has an opportunity to increase its share of these businesses. In order to attract as many of these businesses as possible, the Town may need to address deficiencies in its current zoning regulations, infrastructure services (particularly public sewer and data communications), and possibly roadways in certain sections of the Town. In recent years, the town's Industrial Development Commission was reactivated for the purpose of exploring new growth opportunities. A proposal to rezone vacant land near the intersection of Walnut Street and Route 20 currently zoned Rural A in order to allow business uses was opposed by residents and was defeated in a Special Town Meeting during the fall of 1999.

² Dollars per \$1,000 of assessed valuation.

³ As of January 2001, Shrewsbury's tax rate is \$12.45.

5. Housing

Housing has become a major issue in the Boston region in recent years, as housing prices have climbed and availability is at an all-time low. Despite the recent surge in residential growth in many outlying communities, the new housing that is being developed does not always meet the needs of all of the residents who seek housing. Zoning regulations and market preferences in many suburban areas favor relatively large single-family houses on large lots. As a result, households with low or moderate incomes are often priced out of the market, while seniors, young adults, “empty nesters,” and individuals who live alone are frequently not well served by the housing options. The following analysis examines the existing housing conditions in Shrewsbury and highlights some important housing needs.

5.1. Summary of Existing Conditions

There are three important aspects related to housing conditions: the housing structures themselves, the population that inhabits the housing structures, and the environments in which they are located. This analysis examines the existing housing structures in Shrewsbury in terms of their age, condition, cost, and availability, and considers the demographic trends affecting housing needs, as well as the specific needs of different population groups.

5.1.1 Residential Zoning

The Shrewsbury has eight residential zoning districts. The Rural A, Rural B, Residence A, Residence B-1, and Residence B-2 districts all allow single family houses by right. Two family houses are permitted in the Residence B-2 zone, while continuing care retirement communities are permitted in Residence B-1. According to the 1999 buildout analysis there are approximately 3,100 acres of vacant land in these districts, with the potential for about 5,900 new dwelling units.

The Multi-Family 1 and Multi-Family 2 districts, located primarily on or near Route 9, contain about 40 acres of developable land. Single family and two family residences are allowed by right in these districts. Multi-family townhouse structures, garden apartments, and in-law apartments can be constructed by special permit.

The Apartment District consists of two small areas of land on either side of Route 9 near the White City Plaza, and is intended to provide for higher density residential development. Single family and two-family dwellings are allowed by right; in-law apartments, garden apartments, townhouses, and apartment buildings up to eight stories tall are allowed by special permit. This district contains 27 acres of developable land.

5.1.2 Existing Housing

As of January 2000 there were approximately 12,714 housing units in Shrewsbury. As shown in Table 5-1, the rate of housing construction has accelerated in the past decade. About 35% of Shrewsbury’s housing has been constructed since 1980.

**Table 5-1
Age of Housing Stock in Shrewsbury**

Year Built	Total Units	Percent
1939 or Earlier	1,588	12.5
1940 to 1949	966	7.6
1950 to 1959	1,911	15.1
1960 to 1969	1,789	14.1
1970 to 1979	2,027	15.9
1980 to 1989	1,774	13.9
1990 to 1999	2,659	20.9
Total	12,714	100.0%

Source: U.S. Census, Town of Shrewsbury Building Permit data. This data assumes all housing permits issued resulted in home construction and assumes that no structures existing during the 1990 Census were demolished after 1990.

The types of housing structures in Shrewsbury in 1999 are displayed in Table 5-2.¹ Approximately 70.4% of housing units in Shrewsbury in 1990 were owner-occupied while 2,754 were renter-occupied. Given the high rate of construction of single-family homes and condominium units (as compared to apartment units or multi-family houses) that has occurred during the past ten years, it is likely that the rate of homeownership has significantly increased since 1990.

In 1990, nearly two thirds of the housing units in Shrewsbury (or 64.5%) had either two or three bedrooms. Approximately 19.1% percent had four or more bedrooms.

**Table 5-2
Units By Type of Housing Structure, 1990 and 1999**

Units in Structure	1990 Units	1990 %	1999 Units	1999 %
Single-family	6,422	63.9	8,525	67.1
Two-family	372	3.7	540	4.2
Apartments	3,131	31.1	3,519	27.2
Other	130	1.3	130	1.0
Total	10,055	100.0	12,714	100.0

Source: U.S. Bureau of the Census and Town of Shrewsbury Building Permit data.

5.1.3 Availability

Vacancy rates are an indicator of the availability of housing units. A vacancy rate of 5% is considered to be ideal because it allows occupants to move freely in the marketplace. A vacancy rate below 5% indicates that there is demand for additional housing. The vacancy rate for rental units in Shrewsbury in 1990 was 8.4%. Recent estimates place the vacancy rate at 1% or less. With this much demand for rental

¹ Unfortunately, the breakdown by type of housing for 1999 is not directly comparable to 1990 data and should be interpreted carefully. First, the 1999 figures do not take into account demolitions of housing units that occurred between 1990 and 1999. Second, the building permit data does not distinguish between apartment units and condominium units. The assessor's office identified 1,224 condominium units in Shrewsbury as of January 1, 1999. These units must be included in the estimated number of "apartments." Of the more than 300 "apartment units" constructed since 1990, it is likely that most, if not all, are in fact condominiums. The most significant construction of multi-family rental housing likely occurred between 1968 and 1975, when 1,671 units were constructed, according to CMRPC. Taking these factors into consideration there are probably more single-family housing units and fewer apartment units than are indicated in Table 5-2.

housing, some Realtors within the Town charge fees of 10% or one month's rent for locating an apartment.

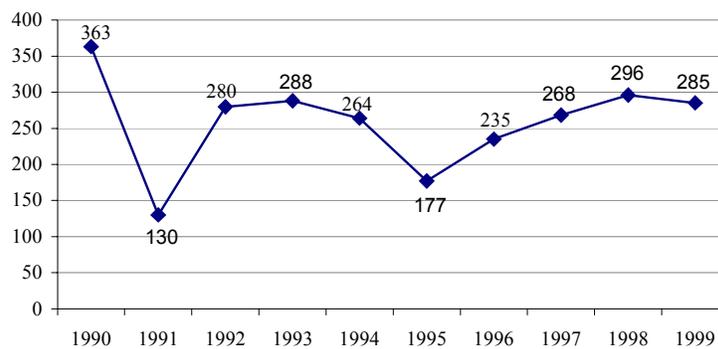
Vacancy rates for single and two-family homes have been consistently low in Shrewsbury. In 1990 the vacancy rate was 4.6% for all owner-occupied homes. More recent estimates place the Town's house vacancy rate at 1% or less. Houses are selling as quickly as they are coming on the market. Whereas in the past it was typical for houses to remain on the market for three to four weeks before being sold, houses today can sell after one showing and frequently sell for more than asking price as prospective buyers attempt to outbid one another.

The Town has been seeing considerable turnover of existing housing units in recent years. During 1999 there were 243 building permits issued for new home construction and 1,030 home sales, indicating that almost 800 housing units changed hands.

5.1.4 New Home Construction

The building permit data shown in Figure 5-1 indicates the rapid rate of new single-family house construction in Shrewsbury. In the past few years the Town has approved more than 20 subdivisions and accepted streets in these subdivisions as public ways. While units in multi-family dwellings and apartment buildings once comprised a substantial segment of new home construction, single-family development has overwhelmingly characterized new construction in the past ten years. New residential developments are located being constructed throughout the town, both in previously undeveloped areas (such as Memorial Drive and Arch Street in the south and Prospect Street and High Street in the northeast), and as infill development within existing neighborhoods (along Worthington Avenue in the southwest and off Hill Street in the northeast). Many of these units are considerably larger than the average house in the community, ranging from approximately 3,000 to 3,500 s.f.

Figure 5-1
Single-Family Residential Building Permit Data, 1990-1999



Source: Massachusetts Information Statistics and Economic Research (MISER); compiled by CMRPC.

5.1.5 Low and Moderate Income Housing

As early as the 1970s, CMRPC had identified the lack of low and moderate income and elderly housing throughout the Central Massachusetts Region. State law (M.G.L. Chapter 40b) mandates that communities have 10% of their total housing dedicated to households with low and moderate incomes. In order to qualify as affordable under Chapter 40b, housing units must be subsidized with state or federal funding or qualify under the Local Initiative Program. According to a July 1997 estimate by the state's Department of Housing and Community Development, approximately 6.0% of Shrewsbury's housing

stock meets Chapter 40b requirements. Where communities have less than 10% affordable housing, Chapter 40b allows private developers who construct affordable housing to circumvent local zoning and subdivision control regulations through the Comprehensive Permit process. This process allows developers to submit a single application to the Zoning Board of Appeals, and requires that the application must be approved unless it presents serious health or safety risks. As of this writing, one comprehensive permit has resulted in the construction of one low and moderate-income housing development in Shrewsbury.

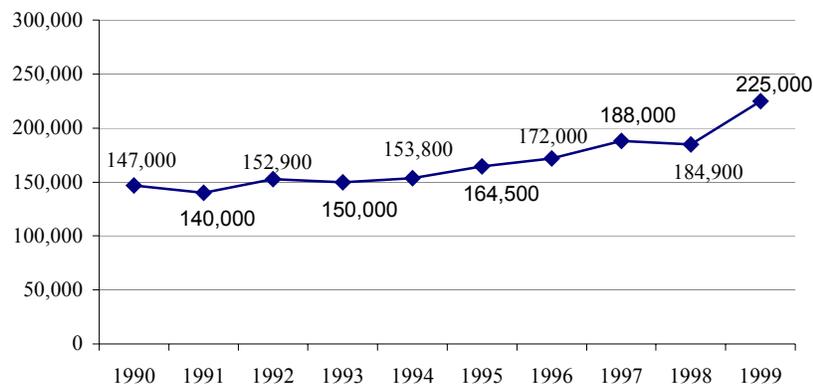
Shrewsbury’s zoning bylaw offers developers an incentive to provide affordable housing as part of new developments. This provision is discussed further in Section 1.3.3. Currently, the Town has a Housing Authority that is overseen by a board comprised of four elected members and one state-appointed member. The Authority oversees 235 units of federally-funded Elderly/Handicapped Low-Income Housing units. The Housing Authority also oversees 13 three-bedroom Family Low-Income Housing units scattered throughout the town and is in the process of constructing an additional four two-bedroom family units. In addition, the Housing Authority administers a Section 8 voucher program.

5.2. Housing Costs and Affordability

5.2.1 Cost of Homeownership Units

Shrewsbury witnessed its peak in home sales in 1999, with 1,030 housing units sold including 868 single-family homes and 162 condominiums. In 1999, the median home sales price was \$194,900 for all units, or 14% higher than the 1998 median of \$171,000. In 1999, the median for single-family houses was \$225,000, while the median for condominiums was \$124,000. In comparison, the median sales price for single-family residences in 1999 was \$175,000 in Boylston, \$255,000 in Northborough, and \$273,600 in Westborough. The regional housing market has continued to tighten, according to Realtors. For the first half of 2000, the median sales price for single-family homes in Shrewsbury has risen to \$259,900. Many of the residential subdivisions currently under construction are selling well above the median price. Houses in Boston Hill Estates are starting at \$315,000, while houses along Colonial Drive are selling for \$450,000 or more. Older, two-bedroom, 1,200 s.f. Cape-style houses are selling for as much as \$160,000. Trends in median home sale price are shown in Figure 5-2.

Figure 5-2
Median Residential Home Sale Price in Shrewsbury, 1990-1999



Source: The Warren Group

5.2.2 Cost of Rental Housing

Rental housing in Eastern Massachusetts has become much more expensive in recent years. Although rents in outlying areas have risen more slowly in the past, the pressure on rental markets is increasing in the suburbs as housing availability grows tighter in the city. In 1990 median gross rent in Shrewsbury was \$658 per month, compared to a statewide median of \$580 and a national median of \$447. A recent review of apartment listings in Shrewsbury shows studios and one-bedrooms currently renting for about \$600 and two bedroom apartments renting for about \$800 to \$1,250 per month, depending on the amenities included.

5.2.3 Affordability

The definition of affordability considers both the price of the housing unit and the income of the household living in it. A generally accepted standard used to define affordability is that monthly housing cost should not exceed 30% of household income. A guideline used by banks when evaluating home mortgage applications is that monthly payments do not exceed 30%-33% of household income. Approximately 24% of Shrewsbury homeowners (with mortgages) currently spend 30% or more of their household income on housing costs. Approximately 34% of renters in Shrewsbury spent 30% or more of their monthly income on housing costs. Since 1990 home prices in the region have risen at about the same rate or faster than incomes.

It should be noted that the term “affordable housing” is relative, since it depends on the income of the household. Affordable housing is not the same thing as subsidized housing for persons of low and/or moderate income, although subsidized housing is one type of affordable housing.

5.2.4 Demographics

The greatest population growth is expected to take place among persons aged 45 and over, with significant growth also among children and teenagers. The number of young adults is expected to decline. See Appendix A for additional information related to population and household growth.

5.3. Housing Needs Assessment

5.3.1 Affordable/Subsidized Housing

Six percent of Shrewsbury’s housing qualifies as affordable housing under Chapter 40b. This is less than the 10% requirement, but significantly more than many suburban communities, including most of Shrewsbury’s neighbors, which offer little or no housing that meets the Chapter 40b criteria.

State programs define affordable housing as that which can be afforded by moderate-income households earning between 80% and 120% of the median family income of the region. Subsidized housing is typically available only to families earning less than 80% of the median income for the region. Currently a family of four in Shrewsbury earning \$43,500 per year would qualify for subsidized housing.

There are several forms of subsidized housing. Various state and federal programs offer financing or other incentives to private developers who build affordable rental or homeownership units, construct and/or maintain subsidized housing units, or provide vouchers to tenants to seek housing in the private rental market.

5.3.2 First Time Homebuyers

The National Association of Realtors calculates a Homebuyer’s Affordability Index each quarter, comparing the median household income and median home price. In 1999, a family earning \$46,000

could afford a home costing \$180,000 with a 20% down payment. Extrapolating from this figure, a family would need to earn \$57,500 per year to afford a \$225,000 house—the 1999 median sale price in Shrewsbury.

The greatest barrier to first time homebuyers is saving for a down payment, especially in a region with such high housing costs. Loan programs that have small down payment requirements, such as 3% or 1%, help buyers to overcome this obstacle. However, in a hot housing market such as the region has seen recently, buyers with small down payments may be at a disadvantage in the market. Education programs would allow households with lower incomes to take advantage of loan programs and other assistance available to first time homebuyers.

In 1986, CMRPC highlighted the importance of two-family residences as a way to allow first time homeowners an opportunity to purchase a home, using the rental income from the second unit to help pay the mortgage. Unfortunately, there is little vacant land remaining in districts that allow two-family housing as-of-right.

5.3.3 Senior Housing and Special Needs Housing

Shrewsbury currently does have some housing for seniors, but it is limited to the Housing Authority's units. Mirroring national statistics, Shrewsbury's elderly population (65 and over) is expected to increase significantly between 1990 and 2010. The need for senior housing has been a concern of Shrewsbury residents for several years. In their 1986 report on residential development in the Town, CMRPC suggested elderly congregate housing as one way to address residents' concerns with providing for the elderly members of the community.

Aside from senior citizens, people needing special housing include physically and mentally handicapped persons of all ages, and persons with debilitating illnesses. Some common types of housing for seniors and other persons with special needs include age-restricted townhouses or condominiums, assisted living complexes, congregate living, and single room occupancy units. Existing special needs housing in the Town includes the Sage House on Main Street. Eight elderly, mentally ill residents have resided in this group home since 1989. The New England Fellowship for Rehabilitation Alternatives operates the home.

According to the 1990 U.S. Census, there were 528 persons in Shrewsbury over the age of 65 who claimed to have mobility and/or self-care limitations. There were an additional 471 residents under the age of 65 who had such disabilities. Although not all of these individuals may be candidates for special needs housing, the figures indicate that the need for additional housing options does exist.

6. Public Facilities and Services

6.1. Introduction

The Town of Shrewsbury delivers a wide range of high quality municipal services to Shrewsbury's citizens. These services range from schools and public safety services provided by the Police, Fire, and Highway Departments to administrative functions provided at the Municipal Office Building (e.g. Town Clerk, Assessors, Treasurer, etc.). They also include human services (e.g. Council on Aging/Senior Center, Health, and Veterans Services); municipal water and sewer service; waste collection and disposal services; electric light and cable utilities; a cemetery; and a broad range of cultural and recreational services and programs. These services require a variety of municipal building facilities, parks and playfields from which to operate.

In recent years Shrewsbury has grown rapidly and is predicted to continue that growth in the foreseeable future. In order to accommodate these additional population increases, remedy present overcrowding in the school system, and continue the high quality level of municipal services that Shrewsbury's citizens have come to expect, the Town has undertaken an ambitious facilities construction program over the past several years. As a result, plans exist for many of the Town's facilities to be expanded, renovated or rebuilt. The results of this construction program were most recently evidenced by the completion of the new Senior Center and even more recently exemplified by the groundbreaking for a new High School in the summer of 2000. The fact that some of these projects were approved by Shrewsbury's voters by means of an override of the Proposition 2 1/2 tax cap is a testament to both the need for these facilities and the desire by Shrewsbury's citizens to maintain a high quality level of municipal services.

Typically, a town embarks upon a facilities construction program for one or more of the following reasons: 1) to remedy existing facility deficiencies, space shortages and overcrowding; 2) to provide facilities for an expanding population; and/or 3) to maintain or increase the quality of municipal services provided to its citizens. In Shrewsbury's case, all three of these motives have driven the Town's construction program. Because Shrewsbury's population continues to expand, even additional projects and service programs will be required in the future, even though much has already been accomplished. For example, the Fire Headquarters is inadequate in size and configuration to provide the proper fire protection coverage for a growing population and will need to be replaced. Police Headquarters is overcrowded in spite of a renovation of its facility in 1996. A new or expanded Library may soon be required. And, perhaps most obviously, Shrewsbury's school system will require yet additional school facilities in the future.

As Shrewsbury's government and citizens together plan for the Town's future needs, the means to fund capital improvements will have to be identified and the need to expand the annual operating budget to provide staff and equipment will have to be weighed against available revenue flows. Inevitably, not all of Shrewsbury's capital and operating needs can be achieved in the short-run. Therefore, long-range priorities will need to be established and then reflected in Shrewsbury's long-range capital plan.

In recent years, Shrewsbury has done an excellent job of anticipating future needs. It has looked to the future to provide needed new schools and recreational venues, for example. It also maintains a 5-year capital plan that is updated annually. This capital plan attempts to anticipate future capital facilities needs and budgets for them appropriately.

Shrewsbury also recognizes the importance of on-going maintenance to extend the useful operating life of existing facilities. Most of Shrewsbury's municipal buildings are maintained and repaired by the Public Buildings Department staff and some contracted cleaning services.

6.2. General Municipal Facilities & Services

The following section provides a summary of Shrewsbury's existing municipal facilities and the services provided from them. The Town's facilities have been classified into three groupings for purposes of this inventory and analysis: 1) general municipal facilities; 2) schools; and 3) active recreational facilities.

- **Richard D. Carney Municipal Office Building:** The Municipal Office Building, 28,700 square feet in size, was constructed in 1966 and renovated and expanded in 1997. Together with Police Headquarters and the new Senior Center, it shares a municipal campus on Maple Avenue. The Municipal Office Building hosts most of the town's administrative offices such as the Town Manager's Office, Town Clerk, Treasurer, Assessor's Office, Accounting Office, Engineering Department, Health Department, etc. as well as the Electric Light and Cable Department offices, the Selectmen's offices and meeting room, and several public meeting rooms. Recently renovated, the Municipal Office Building currently meets Shrewsbury's administrative office needs quite well for the foreseeable future. However, additional space may be needed in the future to provide for the expanding services of the light and cable department.
- **Police Department Headquarters:** The Police Headquarters, 11,000 square feet in size, is located on Maple Avenue adjacent to the Municipal Office Building on the municipal campus. Originally constructed in 1971, the Headquarters was renovated in 1996 at which time four garage bays and lock-up cells were added. The building proper itself, however, was not expanded.

The Headquarters facility includes offices, dispatch room, record and evidence storage, locker room, staff lounge, garage bays, a sally port, a booking room, and lock-up cells. Enhanced Emergency 911 dispatching is provided at Police Headquarters for the Police Department as well as for the Fire Department. Patrol vehicles refuel at the Municipal Light Department's refueling station on Municipal Drive.

Headquarters now serves a staff consisting of the chief, 3 lieutenants, 4 sergeants, 28 patrol officers, 4 civilian dispatchers, 4 secretaries, 3 school traffic supervisors and an animal control officer. Currently, the ratio of officers to population stands at 1.3 per 1000 population while traditional standards often specify 1.5 to 2.0 officers per 1000 population. As of September 1, 2000, the Department is authorized to add four additional personnel. For the past two years, the Police Department has operated a bike patrol in addition to patrol car operations. In addition, a ten-town regional task force on drug enforcement is headquartered at the Shrewsbury facility.

The Headquarters facility is now extremely overcrowded and is operating beyond its designed capacity. Former storage rooms and training rooms have been converted to needed office space. There is inadequate record storage and evidence storage space. Because the clerks' offices are so undersized, nightshifts have been established to allow the necessary work to be accomplished. The booking room is considered small and even dangerous, and the locker rooms are not adequate for both men's and women's facilities.

As Shrewsbury's population grows, the demand on police services continues to increase. The Police Department has responded by providing new programs, such as the recent organization of a formal traffic unit to respond to the increasing citizen concerns about traffic congestion and

safety issues. In the future, however, as demand for services increase, an increased staff and an enlarged headquarters will likely be needed. When an expansion is eventually authorized, it probably cannot be accomplished at the existing Headquarters site because surrounding wetlands limit the site area. Therefore, an entirely new headquarters may have to be constructed elsewhere. Since Fire Headquarters may also need a new facility, one option that has been considered would be to construct a joint Public Safety Building.

- **Police Department Boat House:** The Police Department also operates and maintains a Boathouse on South Quinsigamond Avenue. The building is old and in poor condition. A replacement for it is anticipated in FY 2004 at its present site for a cost of \$175,000.
- **Fire Department Facilities:** The Shrewsbury Fire Department operates three staffed firefighting facilities – Headquarters, Edgemere Station, and Harrington Station - distributed geographically throughout town to provide reasonable response times to emergency calls. All three facilities are small and obsolete. The Fire Department staff includes a chief, 4 captains, a secretary, and 28 fire fighters. Seven to eight staff are assigned every day. An on-call firefighters group includes 25 part-time personnel, including a captain, 2 lieutenants, and 22 firefighters. The northeast quadrant of Town is the best served, with emergency response times averaging three minutes. The southeast quadrant of town is most remote and response times can therefore be as long as eight minutes. Existing fire department facilities include the following:

- **Fire Headquarters:** Headquarters located on Church Road in the center of Town was originally constructed in 1927 and was last renovated in 1971. Three firefighters and a fire captain staff Headquarters. The Chief and a secretary have offices there as well. Fire apparatus currently located at Headquarters include two engines, a ladder truck, a car, a pick-up truck, and a special services trailer. All fire apparatus and vehicles refuel at the Municipal Light Department’s fueling station on Municipal Drive.

The Headquarters facility is now 74 years old. It is not dimensionally large enough to house modern fire apparatus. It does not have space for training facilities. There is little dimensional clearance within the Station at present to store existing fire apparatus; certainly, there is insufficient space to accommodate additional pieces of fire apparatus as they are required to service Shrewsbury’s increasing population, subdivision growth and commercial growth in the future. Therefore, a new Headquarters facility will most likely be needed in the near future. At present, the town’s 5-year capital budget has anticipated a \$2,200,000 expenditure for a new Fire Headquarters in the year 2004 that is at least 10,000 square feet in size. However, this “placeholder” budget is unlikely to fully fund a modern new fire headquarters, which is more likely to cost more than \$5,000,000 (and up to \$7,000,000 for Headquarters plus an outlying replacement station). When a new Headquarters is constructed, it will most likely be built on town-owned land, perhaps near the existing Police Headquarters. One possibility would be to construct a Public Safety Building together with a new or expanded Police Headquarters.

- **Station Two (Harrington Station):** Station Two is located on Harrington Avenue off of Route 9 in the middle of the business district. Constructed in 1951, the Station is small and outdated. It is staffed with two firefighters. Apparatus housed consists of a 1500 gpm engine and a hovercraft.
- **Station Three (Edgemere Station) -** Station Three, constructed in 1959, is located in the remote southwest corner of Town on Route 20. The Station is small, isolated, and is not well

located to service the rapidly growing southeast quadrant of Town. It is staffed with two firefighters and houses a 1500 gpm engine.

The Fire Department's three facilities are all small and obsolescent. Though cosmetic improvements have been made over time, each station has severe repair needs - such as new roofs or systems. The Edgemere Station on Route 20 is not well located to serve the southern tier of the Town. To overcome current deficiencies and to service the Town's rapidly growing population, it is likely that all three stations will need to be replaced. The Edgemere Station, particularly, should be relocated further east along Route 20, possibly near Route 140, to provide adequate response times to the southern tier of town. Headquarters will clearly need to be replaced as well because it is too small to accommodate new fire apparatus equipment that is needed today.

- **Public Library:** The Shrewsbury Public Library, originally constructed in 1903, is located on Main Street in the town center and is overseen by the Library Board of Trustees. Building additions were made in 1922 and in 1980 and the entire Library is now 22,000 square feet in size. The building is in relatively good condition and is almost entirely accessible to the disabled. The Library is organized into three divisions: Adult Services, Children's Services, and Technical Services. At the end of FY2000, the Library had 138,500 holdings. Its current circulation is 265,000 holdings per year and that circulation continues to grow annually. The Library's volume of circulation within Worcester County is only second to the City of Worcester. The Shrewsbury Library is a member of the C/W MARS interlibrary internet network that includes 60 libraries in central and western Massachusetts. In addition to traditional library services, Shrewsbury Public Library offers Internet access to Shrewsbury's citizens, until very recently a Bookmobile, and many educational programs and lectures.

Because of increasing demands for its services and an increasing population, the existing Library now has a number of space shortages, as exemplified by its inadequately sized Children's Room. The Library no longer has the required seats per capita as required by the Commonwealth because former reading room areas have been converted to space required for computer stations. Additionally, the Library's parking lot is not sufficient in size to accommodate all the Library's patrons. As a result, there are informal parking sharing arrangements with a nearby Congregational Church and with the nearby Credit Union for evening parking.

To address these abovementioned space shortages and others as well, a needs assessment study was conducted in 1999 by consultants¹ hired by the Trustees. The consultants recommended two strategies. In the short run, a reconfiguration and renovation plan was proposed within the limits of the current Library to provide needed spaces for certain inadequately sized services, such as those for children. Such a space reconfiguration solution would help alleviate some of the Library's current space deficiencies for the next five years or so. In the intermediate to long range, however, the consultants recommended an expansion of space that may double the Library's present size. If an addition were pursued, the old 1922 addition would likely be demolished and replaced. Alternatively, it may be found that the present Library site cannot accommodate an expansion of this magnitude. In that case, another site would likely be required.

State Library Construction Grants are available to towns, which apply for such grants. To be eligible, the Library must prepare a 20-year plan and a space needs assessment. At present, the Library's previous 20-year plan has recently expired. Therefore, the Library must now prepare a new 20-year plan if it wishes to seek state construction monies.

¹ J.M.A. Consultants of Portsmouth, New Hampshire conducted the study.

- **Senior Center/COA Offices:** In February 2000, Shrewsbury's new Senior Center opened at the town's Municipal Office Building campus on Maple Avenue. The new facility is 11,400 square feet in size and hosts a number of programs for Shrewsbury's 5,000 citizens who are over 60 years old. The center was formerly located at the COA offices at 15 Parker Road, which has now been converted for use as a preschool facility.

Operated by the Council on Aging (COA), the new facility includes a main hall, drop-in lounge, craft room, volunteer area, offices for the director, assistant director and transportation coordinator, a consultation room and a conference room. Additionally, the COA operates transportation services for seniors and a variety of other activities and programs including the "A Matter of Balance" program, the "Mentorship" program, and a Senior Softball Team. At present, the COA is preparing a 5-year plan, which is necessary in order to gain accreditation for the Senior Center.

- **Highway, Water & Sewer Department South Street Garages and Yard:** Public Works includes three departments: Highway, Water, and Sewer. The Highway Department is responsible for the maintenance and repair of the town's public streets. Additionally, it plows and sands subdivision streets.

To accomplish its mission, the Department has thirteen full time employees. The staff includes a Superintendent, Motor Equipment Repair Foreman, two mechanics, a foreman, equipment operators, and two clerks.

The Highway Department Garage, from which these employees operate, is located at the DPW Yard at 211 South Street. (The Yard area also hosts the Water Department.) The Highway Garage includes vehicle equipment storage bays, repair bays, storage, and a staff area, which includes a lunchroom, lockers, showers, and restrooms. In addition to sheltering Highway Department vehicles, the garage also hosts storage space, some vehicles from the Public Buildings Department as well as from the Parks Department. The Yard includes a sand pile, salt shed, and a fueling pump for all town vehicles except those of the Police and Fire Departments.

At present, the garage facility is of sufficient size to largely meet the needs of the Highway Department, although an additional storage building is needed. If Parks Department and Public Building Department vehicles eventually relocate, then the garage facility would have sufficient room for expansion in the future. Currently, the garage requires a number of improvements, including a new roof, a new exhaust ventilation system (since exhaust fumes enter the staff area) and eventually a separate locker and restroom area for women employees.

- **Solid Waste Collection, Disposal & Recycling Program/Board of Health:** Shrewsbury's Board of Health manages the Town's solid waste collection, disposal and recycling programs by contracting with private waste collection and disposal firms. Solid waste is collected curbside. Shrewsbury also provides curbside pickup for recyclable materials. (Over 20% of Shrewsbury's solid waste is now recycled.) Trash collection and disposal is available to most households in Shrewsbury with the price of such collection built into the property tax rate. Trash collection is not available for condominiums. No user fees are imposed. The 5-year collection contract between the Board of Health and a private firm expires in 2004. The 20-year trash disposal contract between Wheelabrator Millbury Inc. and the Board of Health expires in 2007.

Shrewsbury's solid waste and trash, together with waste from 34 other towns, is collected and brought to Wheelabrator's waste-to-energy plant in Millbury and burned there. The resulting ash residue is then brought back to Shrewsbury's town-owned landfill, which is permitted by the Massachusetts DEP to accept such residue under license from the State until the year 2007. According to the Board of Health, the landfill's license will probably be extended since excess capacity remains at the landfill beyond the 2007 license expiration date.

Since Shrewsbury was one of the first communities to sign up with Wheelabrator (a Tier I community), the Town benefits from low tipping rates (the price for disposal of a ton of trash). However, as Shrewsbury grows, the amount of money it pays for waste disposal directly increases with population growth since disposal prices are based upon waste tonnage. On the other hand, the collection fee has remained reasonably steady (with a pre-negotiated a 3½% annual cost increase) because it is not based on tonnage of trash collected or increased pick-ups as new subdivisions are built.

As both the trash collection and the disposal contracts expire over the next several years and new contracts have to be negotiated, the Board of Health expects that trash collection and disposal costs may dramatically increase since there are no viable alternatives available in the region to provide competition.

- **Public Buildings Department Shop** - Shrewsbury recognizes the importance of on-going maintenance to extend the useful operating life of existing facilities. Most of Shrewsbury's municipal buildings are maintained, repaired and cleaned by the Public Buildings Department staff and some contracted cleaning services. Specifically, this Department, which employs approximately 40 staff, is responsible for the maintenance and repair of the Senior High; Middle School; Beal, Paton, Spring, Coolidge and Floral Street Elementary schools; the Parker Road preschool; Fire Headquarters; Lake and Edgemere Fire Stations; Police Headquarters; the Municipal Office Building; the Brick School; the Ray Stone Legion Hall; and the new Senior Center. The Public Library, Water Department facilities and Electric Light facilities are maintained independently. When the new High School (287,000 square feet) is completed in the fall of 2002, the Public Buildings Department's responsibilities will expand considerably. As a result, staff will need to increase by approximately 9 to 17 additional personnel.

At present, the Department's office is at Town Hall and the staff operates from a small shop at the High School. However, this shop space is inadequate and the Department must therefore share the use of facilities of other departments, such as the Highway Department's South Street Garage. When the new High School is completed in fall 2002, the Department will be able to then utilize a 6,500 square foot garage at the existing High School as its new dedicated facility. This facility will also include storage, a repair shop, and staff space. When this space is occupied, the Public Buildings Department's space needs will be well met for the foreseeable future.

6.3. Inventory of Public Schools

In recent years, as the population of Shrewsbury has rapidly increased, there has been a corresponding large increase in school enrollments. As a result, these increased enrollments have exceeded the design capacity of all of Shrewsbury's schools except the High School, and approach or even exceed the "stressed" capacity at several school sites. To manage this growth and remedy the resulting space shortages, portable modular classrooms have been installed at several elementary school sites as well as at the Middle school as an interim measure. Additionally, grade reassignments have been made between school facilities. These are only short-term solutions, however. It is predicted that school enrollments will

continue to rapidly increase by an additional 20% over the next five to six years. Therefore, current plans to add permanent additional classroom facilities and new school buildings over the next several years are clearly warranted.

At present, Shrewsbury qualifies for a 64% reimbursement rate from the State for school construction costs which helps relieve the bonding burden on the Town. Of course, enrollment growth not only affects space needs and construction costs; it also considerably impacts annual school operational costs as well.

The new school facilities now planned and under construction (such as the new High School and planned conversion of the existing High School to a second Middle School) to accommodate projected enrollments will not come on line for the next several years however. Therefore, in the interim, funds were voted at Special Town Meeting in November of 1999 to place additional portable classrooms at the elementary level in the 2000-2001 academic year to increase the total portable classroom inventory to 23 structures. Grade reorganizations among the school facilities are also being discussed as a means to accommodate growth in the interim period before the planned new school facilities are opened. (Already, at present, the Floral Street school has some of its 1st grades hosted at other school facilities and the 8th grade has been divided between the Middle School and the High School.) Through these measures, the School Department and School Committee have been able to maintain appropriate class sizes despite continuing enrollment pressures.

6.3.1 Enrollment History & Projections

In 1998 school enrollment for grades preK-12 stood at 4,381. At the beginning of the 1999-2000 school year, enrollment stood at 4,512, an increase of 3%. To accommodate enrollment growth over the past several years, portable classrooms have been installed at several schools. The Town Manager's office and the New England School Development Educational Council (NESDEC) project that enrollments will further increase to 5,000 students by the 2001-2002 academic year and to 6,000 students by the 2006-2007 academic year. This projected increase reflects growth of approximately 20% over the five-year period from 2001-2002 to 2006-2007, or an average 4% annual increase.

Table 6-1 illustrates current school enrollments. In summary, Pre-K through grade 5 enrollments currently stands at 2,661 students. Middle School enrollment (grades 6-8) stands at 1,117. Senior High School enrollment (grades 9-12) is presently 1,028 students.

**Table 6-1
Current Year 2000-2001 Enrollment**

Facility	Grade														Total
	PreS	K/P	1	2	3	4	5	6	7	8	9	10	11	12	
Pre School	135														135
Beal Early Childhood		334	131												465
Coolidge Elementary			87	113	70	74	95								439
Paton Elementary			78	83	69	85	76								391
Spring St. Elementary		59	74	92	90	84	84								483
Floral St. Elementary			50	183	173	156	182								744
Middle School								389	361	367					1117
Sr. High School											290	280	245	213	1028
Totals	135	393	420	471	402	399	437	389	361	367	290	280	245	213	4802

Source: School Department, October 1, 2000 enrollment figures.

**Table 6-2
Enrollment History and Projections, by Grade: 1987-2008**

Year	Grade													Total	
	PreS	K/P	1	2	3	4	5	6	7	8	9	10	11		12
History															
1987		231	270	249	242	230	232	269	227	250	231	212	281	264	3,188
1988		199	238	275	258	255	240	242	273	229	225	229	207	264	3,134
1989	39	238	201	250	280	265	265	240	243	265	216	211	238	205	3,156
1990	59	259	265	212	248	284	271	274	242	244	222	215	226	230	3,251
1991	66	281	303	259	224	261	296	269	271	256	197	227	222	211	3,343
1992	68	264	294	306	257	229	276	310	282	276	217	197	228	220	3,424
1993	68	285	311	308	311	281	257	289	316	300	267	199	195	239	3,626
1994	76	346	316	329	327	308	281	247	286	321	263	268	194	202	3,764
1995	87	339	366	329	327	324	318	280	257	275	268	256	265	189	3,880
1996	76	342	381	375	340	341	323	321	288	252	243	255	254	249	4,040
1997	105	330	365	400	389	348	359	330	331	291	196	225	264	239	4,172
1998	134	403	381	365	408	395	354	356	328	338	241	198	226	254	4,381
1999	126	359	466	395	391	424	394	352	356	328	266	234	202	219	4,512
Projections															
2000		465	399	480	407	400	432	395	359	354	270	257	236	193	4,647
2001		422	517	411	495	416	407	433	403	357	291	261	259	226	4,897
2002		477	469	532	424	506	424	408	441	400	293	281	263	248	5,168
2003		469	530	483	549	433	516	425	416	439	329	283	284	252	5,408
2004		445	521	546	498	561	441	517	433	414	361	318	286	272	5,613
2005		445	494	537	563	509	572	442	527	431	340	349	321	274	5,804
2006		445	494	509	554	576	519	573	451	524	354	329	352	307	5,986
2007		445	494	509	525	566	586	520	584	448	431	342	331	336	6,120
2008		445	494	509	525	537	576	588	530	581	369	416	345	317	6,324

* Source: Town Manager's Office, October 25, 1999

6.3.2 Existing School Facilities Inventory

Currently, Shrewsbury's school facilities consist of a High School serving grades 9-12 as well as half of grade 8, a Middle School serving grades 6-8, four elementary schools serving grades 1-5, the Beal Early Childhood Center primarily serving kindergarten and 1st grade classes, and the Parker Road preschool. The Beal School is the oldest facility, originally constructed in 1922, and the Floral Street Elementary School is the newest facility, constructed in 1997. Due to rapid enrollment increases in recent years, all schools are overcrowded and many schools have had modular classrooms installed to accommodate that rapid growth.

In 1997 a School Facilities Study was undertaken in behalf of the Town and the School Facilities Administrative Committee by Lamoureux, Pagano Associates, Architects. That Study documented existing conditions as well as deficiencies and future needs. The summary facilities information provided below is drawn from this 1997 study as well as current information provided by the Town Manager's Office and the School Department.

- **Parker Road Preschool (former North Shore Elementary School):** Originally constructed in 1954, the Parker Road preschool now houses Shrewsbury's preschool program. Until recently, the Parker Road facility had served as the Town's Council on Aging (COA) facility. When the

new Senior Center was opened recently on Maple Avenue, the Parker Road facility was then converted to four classrooms for preschool use as well as offices for Special Education. The recreational playfields on the property are open for general public recreational use.

- **Beal Early Childhood Center (Old Beal School & Beal West):** Constructed in 1922, the Beal School is presently the kindergarten and first grade center. Consisting of the “Old Beal School” and the “Beal West” site (a rented facility on Wesleyan Terrace that formerly housed a private nursery), the Early Childhood Center will include six 1st grade classes, thirteen half-day kindergarten classes and 2 full-day kindergarten classes in the fall of 2000 (Beal West). Because general school enrollments continue to increase rapidly, six classrooms at Beal accommodate Floral district students. The 3-story school is 32,100 sf in size and is sited on a 3.5-acre property. Because the facility is old, its classrooms do not meet recommended sizes by today’s standards and the property size does not meet SGESS guidelines
- **Calvin Coolidge Elementary School:** Originally constructed in 1927 and later remodeled and/or expanded in 1940, 1968 and 1986, the three story brick Coolidge Elementary School currently houses grades 1-5. It is 48,600 sf in size and is sited on a 2.8-acre property. It currently has a total enrollment of approximately 439 students. Its design capacity is 325 students and its stressed capacity is 550 students. In 1995, four modular classrooms were installed, increasing the total number of classrooms to 22. All classrooms are occupied and are at capacity. Because of increasing enrollment pressures in recent years, former art and music classrooms have been converted to classrooms.
- **Walter J. Paton Elementary School:** Constructed in 1949, the Paton Elementary School is a two story structure approximately 34,300 sf in size and serves grades 1-5. Its current total enrollment is 392 students. The facility’s design capacity is 299 students and its stressed capacity is 425 students. To accommodate increasing enrollments, three new modular classrooms were added this past year. Additionally, it was necessary to eliminate the Technology Center to accommodate an additional classroom. A new elevator was recently installed and the front of the building was expanded to replace space lost by the installation of the elevator. The two story school is sited on a 6 acre property.
- **Spring Street Elementary School:** Constructed in 1966, the Spring Street Elementary School houses grades K-5 and has a current enrollment of approximately 483 students. Its design capacity is 308 students and its stressed capacity is 450 students. The facility has had two portable classrooms added to accommodate overcrowded conditions several years ago and four portable classrooms this past summer. This past year, a new elevator was installed and a new building entrance provided. The facility is 33,200 sf in size and is sited on a 11 acre property.
- **Floral Street Elementary School:** Recently constructed in 1997, the Floral Street School is Shrewsbury’s newest and largest elementary school facility. It is 94,000 sf in size and is sited on a 38-acre property. In 1999-2000 it hosted 787 students in grades 1-5. Its design capacity is 660 students and its stressed capacity is 825 students. Though constructed just several years ago, rapid enrollment increases require that six 1st grade classes be hosted at the Beal School. Additionally, the school’s computer laboratory, storage space, and teacher’s room, have already been converted to three additional classrooms, to increase the total number of classrooms to 33.
- **Shrewsbury Middle School:** Constructed in 1964, the Middle School accommodates Shrewsbury’s 6th through 8th graders and has a current enrollment of approximately 1,117 students. Its design capacity is 704 students and its stressed capacity is 950 students. It is

approximately 97,200 sf in size and is sited on a 50-acre property shared with the High School. Because of rapid enrollment increases and resulting space shortages, ten modular classrooms were installed since 1995. More recently in 1999, to accommodate yet additional space shortages and overcrowding, 150 8th grade students were relocated to the High School (SMS West). Clearly, the Middle School is extremely overcrowded and cannot accommodate either existing or projected enrollments.

- **Shrewsbury High School:** Constructed in 1957 and renovated in 1981, Shrewsbury High School accommodates grades 9-12 and has a current enrollment of approximately 1,028 students. Its design capacity is 1,140 students and its stressed capacity is 1,200 students. The school is 169,400 sf in size and is sited on a 50-acre property shared with the Middle School. As described immediately above, the High School also hosts several Middle School 8th grade classrooms. The school also hosts playfields and tennis courts.

In 1995, the High School received a warning status about its facility deficiencies and needs by the New England Association of Schools and Colleges (NEASC). This warning eventually led to the decision to construct a new High School to relieve overcrowding and to provide state-of-the-art high school facilities for Shrewsbury's youth. The new High School is scheduled to open in the fall of 2002. Once the new High School opens, it is planned that the existing High School will be converted to a second Middle School.

- **New High School [Under Construction]** - To accommodate increasing enrollments and to resolve facility deficiencies at the existing High School, Shrewsbury's citizens voted to construct a new \$58.5 million 287,000 square foot High School at Sewall Hill at the corner of Holden Street and I-290 in the northern part of town. Groundbreaking occurred in the summer of 2000 and the new facility is scheduled to open in the fall of 2002.
- **Conversion of Existing High School to Second Middle School [Proposed]** -Once the new High School is completed in the fall of 2002, the existing High School will be vacated and then renovated to serve as a second Middle School for Shrewsbury for approximately 900 students. The renovations are now estimated to cost approximately \$ 22 million. 64% of this cost will be borne by the Commonwealth's SBAB Program for new local schools.

6.3.3 School Facilities Future Needs

The pending construction of the new High School, and then the subsequent planned conversion of the current High School to a second Middle School will go far to relieve present overcrowding and future enrollment growth at the High School and Middle School grades. The elementary schools are and will remain overcrowded, however, unless and until they can be significantly expanded, or, sites are identified for the construction of one or more new elementary schools and/or a new early childhood center.

6.4. Inventory of Active Recreational Facilities & Cemetery

Shrewsbury maintains an extensive and active public recreation program for children, youth and adults operated by the Parks and Recreation Department, a Division of the Park and Cemetery Commission. These programs range from summer playground programs at Coolidge Field to learn-to-row classes, sailing programs arranged with the Regatta Point Community Sailing program, tennis lessons, and adult programs for softball, basketball and volleyball. In addition, activities offered for young people with special needs include socials, craft sessions, seasonal parties, basketball, track and field, softball, skiing, bocce, and soccer. A summer swimming program was recently relocated to Sewall Beach in Boylston

resulting in a decline in enrollment from previous years. This decline underscored the need for swimming opportunities within town.

In addition to two dozen town-owned parks, school playfields, playgrounds, boat launches, and recreational facilities, the Town supports private youth sports organizations such as Babe Ruth Baseball, Pop Warner Football, Little League Baseball and Youth Soccer League. Also, the Parks and Recreation Department and School Department cooperated to provide support staff, which enabled assimilation of SPED youngsters into various town recreation programs. The Parks and Recreation Department's staff maintains the Town's recreational facilities. This staff includes four full-time, three seasonal, and several part-time employees.

In 1997, a \$5 million bond issue was authorized for a land acquisition program to help support recreational opportunities, both active and passive, throughout town. That acquisition program was completed in 1999 with a total of 269 acres purchased. Those purchases included parcels adjacent to Dean Park, the Donahue Rowing Center, the former Masonic property on Route 140, and a large 60-acre parcel of land on Lake Street.

As Shrewsbury's population has grown and as demand for active recreational programs continues to increase, shortages of recreational space have developed and a clear need for additional recreational opportunities has been identified. These additional needs include new multipurpose playfields, a swimming facility, and indoor space for programmed activities for people of all ages. Fortunately, a number of these unmet needs may be accommodated by several new facilities now planned or under construction: the Lake Street Recreational Area, the Maple Avenue Field Expansion Phase II, new playfields and sports courts associated with the new High School, and new soccer fields to be privately developed by the Youth Soccer Association at the Glavin Center. Additionally, some have suggested that the recently acquired Masonic property be examined for its recreational opportunities as well as its use for expanded burial grounds.

6.4.1 Inventory of Active Town-Owned or Operated Recreational Facilities:

- **Dean Park:** Dean Park near the intersection of Main and School Streets on the eastern side of Town includes a wide variety of recreational activities: playfields for Little League baseball, softball, and Shrewsbury Youth Soccer, a playground, basketball court, fishing, walking/ jogging, and cross country skiing. The Park also includes two picnic/outing pavilions, a picnic grove, a pond, and a fitness trail.

Playfield renovations were last undertaken 25 years ago and the fitness trail has fallen into disrepair. Today, the fields are in need of renovation and an irrigation system is required. The picnic pavilions are also in need of renovation.

Dean Park was recently improved to include a new 80-car north parking lot and the reconstruction of its tennis courts. The renovation of the Dean Park playgrounds (including an irrigation system and restrooms) and picnic pavilions are anticipated in the near future. Other improvements are scheduled in phases on an ongoing basis over the next several years.

- **Municipal Drive Soccer Field:** This playfield accommodates soccer facilities for Shrewsbury High School interscholastic practices and games and for Shrewsbury Youth Soccer activities. The playfield is in need of renovation due to heavy use. An irrigation system is also required to properly maintain a safe and playable turf.

- **Edgemere Park:** Located in the southwestern corner of town on Edgemere Blvd., Edgemere Park includes playfields, a playground, a basketball court, and a baseball field.
- **Rotary Park:** Located on Pond View Drive, Rotary Park includes a playfield, a playground, and opportunities for fishing.
- **North Shore Field:** North Shore Field on Parker Road is the playfield formerly associated with the former North Shore School (now utilized by the Town’s light and cable company for its cable TV broadcast studios). North Shore Field includes a playfield, a basketball court and a playground.
- **Greylock Avenue Playground:** Greylock Avenue playground includes a playground as well as land for picnics/outings, cross-country skiing and walking / jogging.
- **Ireta Road Field:** Ireta Road includes a playground, a playfield and a basketball court.
- **Melody Lane Field:** Melody Lane Field is an open playfield used by the neighborhood for a variety of sports.
- **Maple Avenue Playfield Phase I:** Maple Avenue Field include a playfield and land for cross-country skiing and walking / jogging. An expansion of the field is now underway to add additional playfields
- **Jordan Pond:** Located behind the Coolidge School, Jordan Pond provides tennis courts, boating, fishing, and land for cross-country skiing.
- **Oak Island:** Oak Island, opposite Edgemere Blvd., is partly owned by the Town and partly owned by the Commonwealth. Oak Island provides opportunities for fishing, boating, and land for cross-country skiing. The Town’s portion of property includes conservation lands as well. The Commonwealth’s portion of the property includes a boat ramp. However, the Town operates the entire property.
- **Donahue Rowing Center:** The Donahue Rowing Center, located adjacent to Lake Quinsigamond and accessible from Quinsigamond Avenue in the northwest part of town, is owned by the Town of Shrewsbury and is a financially self-supporting operation. It was opened in 1992 and constructed from grant money provided by both the Massachusetts Executive Office of Environmental Affairs (EOEA) and private donations. It is operated by the Shrewsbury Parks and Recreation Department.

The facility is used by rowers from various high schools, colleges, and the general public. The Quinsigamond Rowing Association provides support in the operation and maintenance of the Center. The facility includes row facilities and the Quarterdeck Club Room, which can be rented for group functions. A large parking lot is available for its patrons.

Lakefront land was recently acquired by the Town of Shrewsbury adjacent to the Donahue Rowing Center for purposes of conservation as well as for future expansion of the rowing facility.

6.4.2 Inventory of School Site Active Recreational Facilities

The playfields at school properties are owned by the School Board and maintained by the Parks and Recreation Department.

- **Shrewsbury High School and Middle School Playfields:** The High School campus on Oak Street includes playfield/football field, running track, tennis courts, a baseball field, and land for cross-country skiing and walking/jogging. The Middle School facilities include a playfield/soccer field and a ballfield.
- **Beal School Playfields:** The Beal School site on Maple Street near Shrewsbury Center includes a playfield, a playground (tot lot), and a baseball field.
- **Coolidge School Playfields:** The Coolidge School site on Florence Street includes a playground, a basketball court, and playfields and baseball fields on adjoining town-owned land.
- **Spring Street School Playfields:** The Spring St. School Site includes a playfield, a playground and a basketball court.
- **Walter Paton School Playground:** The Paton School Site includes a paved playground. Wetlands on the school property limit the potential for developing playfields.
- **Floral Street School Playfields:** The new Floral Street School includes paved play areas and playfields.

6.4.3 Inventory of Proposed Active Recreational Facilities

- **Lake Street Recreation Property – South Park Recreation Area (Proposed):** A large 60 acre property on Lake Street was recently acquired by Shrewsbury from the Scandinavian Athletic Club and the Sears family to provide new recreational opportunities. A master plan for a new park is now in preparation for the site. When the master plan is completed, the property will likely include new playfields, picnic areas, and a new aquatic center / outdoor swimming pool.
- **Maple Avenue Playfields Phase II (Proposed):** To accommodate increasing program demands and population increases, new playfields are proposed for the Maple Street playfields. The playfields would be supported by a parking lot, a perimeter walking trail with a spur to the new Senior Center, and other related senior facilities.
- **New High School Playfields (Proposed):** As part of the construction program for the new High School, a number of new playfields and sports courts will be constructed. These new recreational opportunities will include softball, baseball, soccer, and football fields as well as tennis courts and practice fields
- **Cross Town Trail (Proposed):** A cross-town trail for walking, jogging, and bicycling on abandoned rail rights-of-way and on local streets has been proposed.
- **Waterfront Sitting Park/Old Boathouse on S. Quinsigamond Avenue (Proposed):** Proposed improvements to this old boat house site near elderly housing may include new lawns, walkways, and the installation of benches. Such improvements would prove an attractive neighborhood amenity and provide aesthetic access to Lake Quinsigamond.

- **Glavin Center Soccer Fields (Proposed) (Private):** Shrewsbury's Youth Soccer Association intends to construct 5 to 7 new soccer fields on underutilized land it will lease from the Glavin Center.

6.4.4 Cemetery

- **Mountain View Cemetery** - The Mountain View Cemetery is a municipally subsidized cemetery reserved for Shrewsbury citizens. The Cemetery is operated under the jurisdiction of the Parks and Cemetery Commission. There were 153 interments at the Cemetery in 1999. As Shrewsbury's population continues to grow, demand for interments is expected to grow as well. To respond to increased demand, new burial areas were laid out and offered for sale in 1999. The Parks & Cemetery Commission maintains the cemetery and maintenance vehicles are stored at the Boylston Street Garage. Plans for future expansion of burial acreage include the use of approximately 26 acres of the Masonic land directly across Boylston Street from the present cemetery.

6.5. Utilities

This section describes Shrewsbury's public utility services, including water, sewer, electricity and cable.

6.5.1 Water

Shrewsbury has made substantial investments in both its water system and its sewer system. The water system is especially extensive as it serves nearly every home and business in the Town (approximately 95% of the Town is connected to the municipal water supply). Four groundwater wells supply all of Shrewsbury's water. These include the very productive Home Farm and Sewall Street wells (located within the large aquifer in northwest Shrewsbury) and the less productive Lambert and South Street wells. Safe yield for the current system is about 7.0 million gallons per day (MGD) while average use is about 3.6 MGD.

Due to substantial residential growth in recent years, the Town has come very close to its safe yield (6.85 million gpd in summer of 1999). The biggest problem has been caused by unprecedented demand for lawn irrigation and sprinkler systems. For the first time recent history, the Town instituted a voluntary water conservation/ban program during the summers of 1999 and 2000. It is anticipated that these bans will continue and possibly be expanded in the future.

As a result of TCE contamination discovered in the Town's water supply in the early 1990s, a drinking water treatment facility was constructed at the then cost of \$5.5 million. The facility's current capacity is approximately 6.0 to 6.5 mgd. The facility is located in close proximity to the wells in the NW section of the Town. Since construction of the treatment plant, the Town has not experienced problems with TCE, but Town officials have expressed concern about contaminated runoff getting into the groundwater from the Worcester Pit and Gravel. To prevent this from occurring, the Town has been vigilant about VOC (volatile organic compound) sampling and sampling of synthetic compounds in the area.

The Town has utilized most of the usable capacity of its existing wells. The City of Worcester plans on constructing a \$6 million water treatment plant to use reserve water supplies from the contaminated Home Farm well field at north end of Lake Quinsigamond. This might affect Shrewsbury's water pressure since the Town draws from same well field. Shrewsbury has hired a consultant to research potential water sources. One possible source has been identified on the newly-acquired Scandinavian Athletic Club lands off Lake Street.

According to the 1990 distribution study prepared by Camp Dresser and McKee, the existing network of water distribution pipes in Shrewsbury is not capable of meeting Insurance Services Office fire flow requirements at most locations. In addition, transmission mains throughout the system are undersized and inadequate for current distribution requirements. Aging, deteriorating pipes were also identified as a problem. According to Town officials, Shrewsbury has been using the report to identify necessary improvements and has been engaged in ongoing efforts to remedy the situations identified in the order that they are prioritized.

The SE area of Town around Route 20 currently has the weakest water pressure because this area is the furthest area from the aquifer. The Town has hired a consultant to construct a hydraulic model to identify locations for potential locations for booster stations to improve water pressure. Likely locations include Oak St. and Route 9 and by the new high school in the NW area of Town.

6.5.2 Sewer

Shrewsbury's sewer system serves an estimated 80%-85% of the Town's residences. Areas that lack sewer service include a large part of the southern side of Town and the northwest area around Holden, Clinton, and Sewall Streets. Plans were eventually finalized and funds were identified to sewer the Edgemere neighborhood. These sewers are in the final stages of installation and, when operational, should help alleviate pollution problems in the lower part of Lake Quinsigamond and Flint Pond.

Sewage from Shrewsbury first flows through the Shrewsbury's former treatment plant in Northborough (shut down in 1987 due to inadequate performance) before being pumped to a shared treatment plant in Westborough. The combined Shrewsbury/Westborough plant has a design capacity of 7.7 MGD. In 1997, total usage was approximately 4.5 MGD, leaving substantial capacity to handle additional development. Of the total sewage flow at the plant in 1997, Shrewsbury accounted for about 3.2 MGD while Hopkinton normally sent only 40,000 gallons. The town of Westborough accounted for the rest.

As a part of the Assabet River Consortium, Shrewsbury will, over the next three years, join its neighbors in preparing a Comprehensive Wastewater Management Plan (CWMP). In the spring of 1999, the state's Department of Environmental Protection sent a letter out to all communities that discharge into the Assabet River. The DEP had a growing concern about phosphorus discharge, algae growth, and the presence of aquatic weeds in the river. The Assabet River Consortium towns will review performance at their treatment plants, identify improvements that are needed, and make recommendations regarding the sewage systems. Development of the CWMP is expected to take 2½ to 3 years and issuance of the plan will be required to obtain a DEP permit for the wastewater treatment plant. In 2003, Shrewsbury's current three-year contract for wastewater treatment will expire and the Town will have to renegotiate the contract, depending upon the results of study.

6.5.3 Light and Cable

The Town of Shrewsbury provides electric power, internet service, and cable television services to its citizens via the municipally-owned Shrewsbury Light & Cable. This entity consists of the Shrewsbury Electric Light Plant (SELP) and Shrewsbury Community Cablevision (SCC). By providing these services publicly, the Town can offer rates that are lower than those paid by residents in surrounding communities.

In the past two years the electric industry in Massachusetts has undergone deregulation which allows customers to choose from a variety of electric suppliers. To date, deregulation has had minimal effect, however, since rates have not appreciably decreased. Nevertheless, deregulation's impact on the future operations of SELP is uncertain, and in the future, Shrewsbury's citizens will be given a retail choice plan

as to which electric supplier they can contract with. SELP will remain the town's electric supplier unless a customer chooses otherwise. Also, SELP will continue to be the town's distribution company.

SCC provides Shrewsbury's citizens with cable TV services as well as local access TV channels 19 and 26. SCC has also established the Town's Internet homepage. Since November of 1999, SCC is also gradually providing townwide high-speed internet services in partnership with ISP Channel. SCC and SELP use the following public facilities:

- **Town Hall Administrative Offices:** The Light and Cable's administrative offices are located in the 1997 addition to the Municipal Office Building. These offices are adequate for Light and Cable's administrative needs for the next 3 to 5 years. If programs and services expand in the future, additional administrative space may be required in the future.
- **Shrewsbury Electric Light & Cable Department Municipal Drive Garage and Operations Center:** Located on Municipal Drive, this facility serves the Light & Cable Company and serves as a fueling station for Light and Cable vehicles as well as for the vehicles of the Police and Fire Department. The facility includes a vehicle garage, the engineering and operations office, and warehouse space.
- **SELP Electric Utility Substations:** SELP operates several electrical substations which connect to the New England power grid and which then distribute electric power to Shrewsbury's residents and businesses. The main substation is located near the intersection of Maple Avenue and Route 9. Other substations are located off of Route 9 at Worthington Avenue and at the Municipal Drive campus. Additionally, several backup diesel electrical generators are located on Route 9.
- **Parker Road Cable TV Broadcasting Studio/Head End Facility (Former North Shore School Building):** Located at 15 Parker Road, this Town-owned former school building is now used as a cable TV broadcast studio by Shrewsbury's municipal light and cable department. It is also its cable Head End facility. Recently, a new room was added to provide space for new cable equipment to provide digital cable services beginning in the year 2000. Additionally, satellite dishes are located at the rear of the property. (A portion of the building now also serves as the School Department's preschool Center and as the offices for Special Education. Once the new High School is opened, some School Department functions may be relocated, thereby freeing space to be returned to the cable company's use should it be needed in the future.)

In general, the space needs, facility needs, and staffing needs of Shrewsbury's Light and Cable operations are now well served. The primary need in the future may be an expansion of administrative staff to provide expanding services and programs.

7. Transportation

This section discusses transportation in Shrewsbury, including private automobiles, public transportation, bicycling, and pedestrian modes of travel.

7.1. Existing Traffic Volumes

In assembling transportation-related information for the Town of Shrewsbury, the most readily available data consisted of traffic volumes and accident reports. Available traffic count data is spotty, outdated, and provided only on a 24-hour basis, not hour-by-hour. Level of service analysis information was mostly unavailable; bicycle and pedestrian counts were nonexistent; and commuter ridership data was also unavailable, since the Grafton commuter rail station was opened only within the last six months.

The existing weekday daily traffic volumes have been compiled from a number of sources including the MassHighway, Central Massachusetts Regional Planning Commission and traffic impact studies produced for private developments in Shrewsbury. Existing weekday daily traffic volumes are shown in Table 7-1 and on Figure 7-1.

**Table 7-1
Traffic Volume on Key Roadways in Shrewsbury**

Route	Location	1985	1990	1996	1999
Route 9	East of North Quinsigamond	36,700	43,895	46,600	41,100
Route 20	East of Route 140	14,600	16,438	17,200	17,600
Route 140	North of Main St.	13,100	14,000+		16,300*
I-290	At Worcester City Line	41,750	58,457	69,100	84,000
I-290	East of Route 140	51,000	50,682	66,000	83,300
I-290	West of Route 140	39,250	60,000	60,000	71,500*

Sources: MassHighway Department 1999 Traffic Volume Book.
+ 1992, * 1998

The data presented above indicate that traffic volumes on Route 9, Route 20 and Route 140 have all grown at a substantially lower rate than on I-290. From 1985 to 1999, volumes on I-290 increased by 63% to 101% (depending on the location), which volumes on Routes 9, 20 and 140 increased by 25% or less.

7.2. Regional Transportation Context

Shrewsbury enjoys excellent access to the regional highway network. A grid of north-south and east-west highways is located on the edge of or just outside of the Town. The Massachusetts Turnpike (I-90) to the west and I-290 in northern Shrewsbury provide high-speed east-west travel to the Boston and Springfield areas. I-495 to the east and I-190/I-290 to the west offer direct north-south travel to several destinations including Providence, Cape Cod, Lowell and Fitchburg. Four major state and federal highways serve the Town:

- **Interstate 290:** After crossing Lake Quinsigamond to the west, I-290 runs east-west along the northern boundary of the Town, with an interchange (22) at Main Street and another (23) at Route 140 (Boylston St.).
- **Route 9:** Also known as the Boston Turnpike, Route 9 runs east-west approximately through the Town's geographic center.
- **Route 20:** Also known as the Hartford Turnpike, Route 20 connects the Edgemere neighborhood and Worcester to the west with Route 9 at the Town's eastern boundary.
- **Route 140:** Route 140 runs north-south through the center of the Town. This road is also known as Memorial Drive south of Route 9, Grafton St. from Route 9 north to Main St., and Boylston St. from Main St. north to the Shrewsbury/Boylston boundary.

Until I-290 was built, Route 9 handled most of the through traffic to and from Worcester and the eastern Massachusetts cities and towns. I-290 now carries over 80,000 vehicles a day, and has served as a necessary reliever for traffic on Route 9 and Route 20, which is often congested at peak hours.

When I-290 was first introduced, the original plan was to take it as close to the center of Shrewsbury as possible. In that way, reasoned highway engineers at the time, the road would better serve the community and its business/commercial center. As a result of vigorous opposition from Shrewsbury residents, the highway was routed into the northern section of Town, and several existing neighborhoods were spared the land takings, construction impacts, and noise that would have resulted from an Interstate highway near the Town center.

7.3. Shrewsbury Roadway Network – Functional Classification

Functional classification identifies a roadway's purpose and use as part of the highway network. The highway network consists of a hierarchy of streets and highways designed to channel traffic from location to location in a safe and efficient manner. In urban areas, streets and highways are classified into four functional highway systems: Principal Arterials, Minor Arterials, Collector Streets and Local Streets. In Massachusetts, the regional planning commissions are responsible for functional classification of streets and highways in their districts; Shrewsbury's roads are classified by CMRPC.

7.3.1 Principal Arterials

The urban principal arterials are multi-lane roadways that connect major activity centers in urbanized areas. These arterials carry the highest volumes of traffic at high speeds and are often entirely or partially controlled-access facilities with interchanges or grade separations at major crossings. Principal arterials not only carry a major portion of trips entering and leaving a community; they also carry a significant amount of traffic passing through the community.

Principal arterials generally streets carry the highest traffic volumes. In Massachusetts, traffic volumes on principal arterials usually exceed 25,000 vehicles per day. Because the function of principal arterials is mostly to provide mobility at a high level of service, service to abutting land is of secondary importance. Parking along principal arterials is usually forbidden or discouraged; driveway access onto principal arterials is also discouraged. In Shrewsbury, three roads fit the principal arterial classification: I-290, Route 9 and Route 20. On the statewide basis, principal arterials carry a high proportion of total urban area travel (40% to 65%) on minimum mileage (5% to 10% of the total roadway mileage).

7.3.2 Minor Arterials

Minor arterials feed into principal arterials and serve the dual function of carrying high traffic volumes and providing access to adjacent land uses. Minor arterials place more emphasis on land access; on-street parking is generally permitted but is heavily regulated in order to maximize the street's traffic-carrying capacity during peak travel periods. Minor arterials generally have four travel lanes during peak travel periods (on-street parking may occupy one or more lanes during non-peak hours), but a minor arterial may also have two travel lanes and widen out at signalized intersections. Minor arterials generally carry traffic volumes in the range of 10,000-40,000 average daily trips (ADT).

Minor arterials serve as a distribution network to geographic areas smaller than the principal arterials. Trip lengths associated with minor arterials are of a moderate length and travel is at a lower speed than on principal arterials. The principal arterials and minor arterials carry a great majority of traffic in the community (65% to 80%), while they occupy less than 25% of the total roadway mileage. In Shrewsbury, several roads fit the minor arterial classification: Route 140, Lake Street south of Route 9, North Quinsigamond Avenue, South Quinsigamond Avenue, Main Street, Maple Avenue, Harrington, and Old Mill Road between Main street and Harrington.

7.3.3 Collector Streets

Collector streets collect traffic from local streets and channel it into the arterial street system. The focus of collectors is more on land access than on mobility. Collector streets provide traffic circulation within neighborhoods and commercial and industrial areas. Travel speeds are generally lower and parking restrictions fewer than on minor arterial streets.

Collectors are usually two-lane roadways with minor widening at intersections with arterial streets. Collectors carry traffic volumes in the range of 3,000 to 20,000 ADT. The higher flows are associated with collectors that are over two miles in length and where some element of through traffic between arterials is present. In Shrewsbury, Oak Street, Svenson, Lake Street (north of Route 9), South Street, Prospect Street (south of Hill Street), Hill Street, North Street, High Street and Spring Street are examples of collector streets

The collector streets constitute approximately 5%-10% of the mileage in a typical community and they carry an estimated 5%-10% of the traffic volume.

7.3.4 Local Streets

The local streets include all the remaining streets that are not included in one of the higher systems. Local streets could be residential or industrial in character or could be access roads to recreation areas or parks. Traffic volumes on local streets are generally 4,000 ADT or less. A great majority of residential streets have volumes of 500 ADT or less. The high volume local streets are very long residential roadways (over one mile in length) with access to subdivisions.

Local streets' main function is to provide access to land. Travel speeds on local streets are generally the lowest and parking restrictions generally do not apply. Through travel on residential streets is often discouraged through traffic calming mechanisms. Although local streets carry relatively low traffic volumes overall (10%-30%), they constitute by far the greatest road mileage, accounting for 65% to 80% of roadway mileage in a typical community.

Figure 7-2 graphically depicts the Shrewsbury roadway classification.

7.4. Accident Records

MassHighway maintains a database of accidents that have been reported in the Commonwealth. The accident records for intersections and roadways within Shrewsbury were researched for 1998, the most recent available information. The number of accidents, by location, is shown graphically in Figure 7-3. To determine if any locations are deemed “high accident locations,” an accident rate has been developed at each collector or arterial roadway intersection. This accident rate is based on the number of accidents per million entering vehicles (A/MEV). The state has developed state averages for signalized and unsignalized intersections so that intersections can be compared to state averages. The state average at unsignalized intersections is 0.7 A/MEV and the average for signalized intersections is 0.98 A/MEV. Based on a combination of information from Figures 7-1 and 7-3, the locations with a higher-than average accident rate are summarized in Table 7-2.

Table 7-2
Intersection with Accident Rates Higher Than the State Average

Intersection	Accidents Per Million Entering Vehicles
Route 9 / Quinsigamond Avenue ¹	2.86
Route 9 / Maple Avenue	1.13
Route 9 / Oak Street	1.01
Route 9 / Route 140	1.31
Route 9 / South Street	1.60
Main Street / Route 140	1.10
Route 20 / Lake Street	0.99
Route 20 / Route 140	1.13

¹ Note 67% of these accidents occurred immediately at the intersection and 33% occurred at directly abutting land uses like White City Plaza driveway.

7.5. Existing Commuting Patterns

The “existing” commuter pattern of Shrewsbury residents is based on the 1990 Census Bureau’s Journey-to-Work information. While this information is already ten years old and changes have been made (namely, the extension of the MBTA Framingham commuter rail line to Worcester and Grafton; changes in the economic climate and demographics of the work place) the information provides a good baseline for which new information can be added. When the 2000 U.S. Census information becomes available, an updated commuter profile will be available, and a time-series comparison can be made.

In 1990, 10,406 people worked in Shrewsbury. Of these workers, 87.4% commuted to work by driving alone in their car, 9.9% carpooled, 2.3% walked to work, and the remaining 0.4% used other means of travel. Of the 12,464 Shrewsbury residents in the work force, 89.5% commuted to work alone in their car, 7.3% carpooled, 2.1% walked, 0.5% commuted by bus, and the remaining 0.6% commuted by other modes of travel.

Table 7-3 summarizes the major workplaces for Shrewsbury residents and the major places of residence for Shrewsbury employees.

**Table 7-3
Top Destinations of Persons Traveling To or From Shrewsbury for Work, 1990**

Town of Residence of Shrewsbury Employees	# of Persons	%	Workplace of Shrewsbury Residents	# of Persons	%
Shrewsbury	2,930	28.2	Shrewsbury	2,930	23.5
Worcester	2,301	22.1	Worcester	4,034	32.4
Grafton	293	2.8	Westborough	848	6.8
Northborough	264	2.5	Marlborough	643	5.2
Auburn	253	2.4	Northborough	358	2.9
Westborough	239	2.3	Framingham	320	2.6
Millbury	236	2.3	Boston	243	1.9
Oxford	197	1.9	Southborough	201	1.6
Elsewhere in MA	3,950	38.0	Elsewhere in MA	2,796	22.4
New Hampshire	60	0.6	New Hampshire	34	0.3
Rhode Island	83	0.8	Rhode Island	57	0.5
Total	10,406	100.0	Total	12,464	100.0

Source: U.S. Bureau of the Census, 1990.

7.6. Existing Transit Services

Two Regional Transit Authority bus routes currently serve Shrewsbury: Route #15 and Route #28. Route #15 starts at Main Street and Main Circle and ends at Foster and Waldo in downtown Worcester. The inbound route to Worcester runs every hour beginning at 5:18 AM with the last bus leaving at 6:18 PM on weekdays. The outbound route begins at 5:45 AM and runs every hour until 6:45 PM. On Saturday the bus runs every two hours with the inbound route beginning at 6:18 AM and ending at 6:18 PM, and the outbound route beginning at 7:45 AM and ending at 5:45 PM. No service is provided on Sunday.

Bus #28 starts at UPS and ends at Foster and Waldo in downtown Worcester. The inbound route runs every hour beginning at 6:50 AM with the last bus leaving at 6:50 PM on weekdays. The outbound route begins at 6:15 AM and runs every hour until 6:15 PM. On Saturday the bus runs every two hours with the inbound route beginning at 7:20 AM and ending at 5:20 PM, and the outbound route beginning at 6:45 AM and ending at 6:45 PM. No service is provided on Sunday.

Additional transportation services are provided for Shrewsbury's elderly community.

The bus appears to be utilized for commuting to and for Worcester. In particular, the #28 route is an important means of access to the UPS facility, which is Shrewsbury's largest employer, with 1,300 employees. Residents have noted some potential improvements to the bus service in Shrewsbury, including the need for better signage, designated bus stops, and better (and more readily available) information concerning bus times, frequencies, and fares.

Within the past year, a stop was added on the MBTA Framingham/Worcester commuter rail line in Grafton at Westborough Road/Pine Street. Seven trains inbound and seven outbound trains run between Grafton and Boston, with three trains each during the morning and afternoon peak periods. The travel time to Boston is less than one hour on the express trains. Although actual counts are not yet available, projected usage by Shrewsbury residents is expected to be less than 20 inbound trips per day from the Grafton station and 60 inbound trips per day from the Westborough for inbound travel. At this point, the Westborough Station is not yet open, so the number of trips from Grafton Station is probably more than

20 per day. After the Westborough Station opens, many of the Shrewsbury residents presently boarding in Grafton are expected to shift to Westborough.

7.7. Existing Bicycle and Pedestrian Amenities

Shrewsbury has historically emphasized pedestrian accessibility in its residential neighborhoods by providing sidewalks on at least one side of the street. The Town continues to require sidewalks for new subdivisions. In addition, the Town attempts to create interconnected streets in residential neighborhoods, rather than multiple dead-end or loop streets that terminate at an arterial street. As a result, pedestrians can walk to many destinations without needing to venture onto busy streets. The sidewalks and interconnected streets together create a fairly pedestrian- and bicycle-friendly environment in residential neighborhoods.

Pedestrian and bicycle conditions on the Town's major streets are fair or poor. Conditions are particularly bad on the western portion of Route 9, where high traffic volumes, excessive curb cuts, poorly-defined sidewalks, and insufficient crosswalks and pedestrian signalization create hazardous walking conditions. The deficiencies in pedestrian infrastructure on Route 9 are especially unfortunate considering the proximity of many residential neighborhoods to the Route 9 shopping district. If walking and biking were safer and more enjoyable means of travel in this area, many nearby residents might leave their car at home to conduct small errands, which would ease traffic in this very congested area.

Currently, the only formal hiking or biking trails in Shrewsbury are hiking trails within Dean Hill Park. Central Massachusetts Regional Planning Commission is currently developing plans for bike trails in Shrewsbury. The future bike routes are proposed along low volume roads. There may also be an opportunity to use power line easements as bike routes. In addition, the recent widening of Route 140 will enable the shoulder to accommodate bike routes according to state standards.

Chapter 2

Planning Framework



Shrewsbury Master Plan

April 2001

8. Goals & Planning Framework

The goals statement is a vision of the type of community that Shrewsbury hopes to be in the near and more distant future. The goals statement provides the framework within which specific planning proposals and implementation strategies are developed.

Goals were developed based on public input from several sources. First, the Master Plan Steering Committee, which represents each of the eight Shrewsbury precincts plus various Town boards and department, provided input at several meetings and in written comments. Second, a public meeting held on July 20, 2000 provided an opportunity for every Shrewsbury citizen to provide input on issues of residential and commercial growth, rural character, open space, town facilities and services, and other topics. Third, small “focus groups” meetings were held with the business and conservation/recreation communities to elicit input on specific topics that followed upon input received from the July public meeting. Finally, Town residents and other interested parties have been able to provide written feedback to the consultants via mail, email, an Internet feedback form, and an Internet discussion forum.

8.1. Public Input

At the July public meeting, the 80 or so attendees were randomly divided into eight discussion groups. Each group, comprised of approximately 10 participants, was then given a list of questions to discuss. The questions were designed to encourage participants to reflect upon the Town’s qualities and elicit qualitative evaluations on certain aspects of living or working in Shrewsbury. The questions were:

1. What do you like best about living or working in Shrewsbury?
2. What is your biggest worry about Shrewsbury’s future?
3. Ideally, where would you like to see recreation and conservation areas, and why?
4. What does housing contribute to town life? How could new housing development best serve Shrewsbury?
5. What does business contribute to town life? What changes would be good in Shrewsbury’s business areas?

All discussion groups received all the same questions. Because of time constraints the order of the last three questions alternated by group in order to ensure that all questions would be discussed and answered by at least some of the groups.

Highlights and common points of agreement from the discussion groups included the following:

- **Positive Aspects of Shrewsbury:** Several factors were identified as contributing to the high quality of life Shrewsbury currently offers. The Town is regarded as well managed, with residents receiving a high quality of services well worth their tax dollars. These services include Town-owned power and cable, well-maintained roads, and an excellent school system. The Town’s location is regarded as an asset for its accessibility to Worcester and Boston, a strong transportation network, scenic rural areas, and shopping districts. Many residents characterize the Town as a personal, friendly community where people can safely raise their children without fear of crime. The Town Meeting form of government is regarded as positive, and residents generally perceive that the good of the entire community is taken into consideration during the decision-making process.
- **Concerns About the Future:** Participants’ greatest worries were related to the effects of continued growth, including the fear that the Town would act rashly in response to it. Many

residents expressed concern about the increasing amount of high-speed through traffic, the threat of accidents, and the lack of public transit. The Town's rising cost of housing is seen as prohibitive to both younger people and senior citizens, raising concern about housing affordability. Residents recognize that residential growth is stressing the Town's infrastructure and services (including water supply, roads, and the school system), and that providing additional facilities and services will threaten the Town's affordable tax rate. Most participants expressed some concern that the Town's historic, pastoral character would be lost to sprawl.

- **Natural Resources and Open Space:** Most participants agreed that the Town has several significant natural resources that should be preserved. Foremost among these is the aquifer recharge area in northwest Shrewsbury. Participants recommended that Lake Quinsigamond, Jordan Pond, and wetland areas throughout the town be conserved and cleaned up. The Town should continue to acquire open space, but think carefully about which lands are dedicated to conservation and which to recreation or other uses. This decision should be informed by factors such as the distribution of parkland in the more congested sections of the Town, and the needs of wildlife.
- **Recreation Areas:** While Shrewsbury has some substantial recreation lands, participants felt that these areas are not well distributed throughout the Town. In particular, the area south of Route 9 needs more recreation lands. Many felt that the Town needs more facilities for summer recreation and water sports including additional public beaches on Lake Quinsigamond and the ponds. Contiguous trails and greenways should be developed to provide residents with safe areas to walk or bike. Several participants felt that developers should contribute more to recreational land development by providing trails, picnic areas, or other amenities.
- **Housing:** Participants felt that a more diverse housing supply is needed so that the Town's current residents will not be forced to move out of Shrewsbury. In particular, affordable housing for those 55 and over ("empty nesters"), housing for younger people without children, and assisted living facilities were identified as important. Many participants hoped to control growth by slowing down the rate of residential development (through annual limits on the number of housing permits issued per year) and revising the zoning bylaw.
- **Businesses:** Town residents regard local and family-owned businesses (such as Spags Department Store) quite favorably. In general, residents felt that the Town provides well-balanced shopping opportunities. In addition participants pointed out that businesses provide jobs and tax dollars and depend relatively little on Town services.

Residents had several ideas for improving Shrewsbury's business districts. Some felt that neighborhood shopping areas should be distributed throughout the Town, possibly through mixed-use zoning districts that would provide residents with convenient and accessible stores and services, thus reducing the need to drive. One group emphasized that they would like to see a wider variety of businesses in the Town, particularly restaurants. Several participants felt that the Town should encourage "sound" business development, such as campus-style office parks, as opposed to strip malls or heavy industrial uses. Some even suggested that tax incentives or redevelopment incentives be used to attract desired businesses. "Good" jobs located in Shrewsbury would result in less commuting for Town residents, and more commercial tax revenue.

In terms of business zoning, many participants felt that Shrewsbury has enough business-zoned land and that the Town should focus its attention on redeveloping vacant and underutilized sites.

Incompatible commercial development was a cause of concern for many. In particular, participants felt that the Town should curb unattractive or polluting commercial and industrial establishments, require buffer zones between business uses and residential areas, and ensure that business zoning is compatible with the Town's need to protect its aquifers.

8.2. Goals Statement

The goals statement consists of 15 broad goals, each of which has more specific sub-goals. Because most of the goals are applicable to several of the Master Plan elements, the goals statement is not separated element-by-element. Instead, each goal identifies the applicable master plan element(s) in parentheses. Abbreviations used are as follows:

LU = Land Use	NR = Natural and Cultural Resources
OS = Open Space and Recreation	EC = Economic Development
H = Housing	PF = Public Facilities and Services
CIR = Circulation	IMP = Implementation

The numbering of the goals is for identification purposes only, and is not meant to establish ranking or priority.

Goal 1: As Shrewsbury develops in the future, promote land use patterns that are compatible with the Town's natural environment and existing landscape character. (LU, OS, NR)

- Guide new development into areas that have the physical, environmental, and infrastructure capacity to accommodate this development and its impacts.
- Discourage development in environmentally sensitive areas, including land that provides wildlife habitat or groundwater recharge.
- Reevaluate Shrewsbury's zoning bylaw to ensure that zoning in each district is compatible with the character of the land
- Ensure that new development is compatible with existing uses, particularly where business areas abut residential neighborhoods.
- Encourage appropriate redevelopment and infill of existing residential and commercial areas.
- Guide land use and development in a manner that preserves and enhances important landscape features such as the aquifer, wetlands and water bodies, wooded areas, agricultural fields and other open lands.

Goal 2: Permanently protect priority open space from development. (LU, OS, NR)

- Ensure an adequate supply of protected open space distributed throughout all areas of the Town, including densely developed or congested areas.
- Ensure that Shrewsbury's open space network contributes to the regional pattern of wildlife habitat and migratory corridors.

- Inventory and catalog Town-owned properties, including lands acquired recently through the \$5 million override, and identify which lands are most suitable for conservation, which for recreation, and which for other uses.
- Develop a comprehensive and prioritized plan for the acquisition or protection of unprotected open space lands.
- Develop an effective strategy for protecting open space that includes land purchase, easements and donations, zoning-based conservation strategies, incentives, and other tools.

Goal 3: Increase public opportunities for access to Shrewsbury’s open space and natural areas. (OS)

- Develop new contiguous multi-use trails/greenways where people can walk, bicycle, and cross-country ski. Where possible, these trails should create a regional resource by linking Town-owned open space as well as trails in neighboring communities.
- Encourage or require new subdivisions to provide trails/greenways, which could be linked to other, trails in the area or to nearby conservation or recreation lands.
- Encourage or require new subdivisions to provide additional open space areas such as picnic areas and playgrounds.
- Develop new and enhance existing public access, recreation facilities and public beaches on Lake Quinsigamond and the Town’s other water bodies.
- Identify future uses for vacant Town-owned properties such as the Scandinavian Athletic Club site and the Masonic property.

Goal 4: Preserve, protect, restore, and ensure the conscientious management of Shrewsbury’s natural and cultural resources. (NR)

- Protect Shrewsbury’s groundwater resources to ensure adequate supplies of clean drinking water.
- Safeguard wetlands and their important ecological functions such as flood storage and storm damage mitigation, water resource protection, fisheries and wildlife habitat, plant habitat, scenic value, and recreational value.
- Protect the forests, wetlands, fields, and ponds that provide habitat for a variety of wildlife.
- Identify, certify, and protect vernal pools and other habitats of unique value to wildlife.
- Maximize habitat value by protecting large contiguous tracts of open space and by linking open space parcels to promote wildlife movement.
- Manage public land in Shrewsbury in a way that respects its ecological values while also allowing compatible human uses.

- Protect the Town’s historic buildings and sites against demolition or incompatible development.

Goal 5: Strengthen and preserve Shrewsbury’s town center. (LU, EC, H, PF)

- Maintain and enhance the character of Shrewsbury’s historic town center by promoting appropriate development and redevelopment.
- Promote the town center as a pedestrian-friendly shopping and service area and a neighborhood gathering place.
- Ensure that traffic congestion and efforts to mitigate it do not come at the expense of traditional village development patterns, pedestrian accessibility, and aesthetics.

Goal 6: Provide a range of housing options to meet the needs of people of diverse income, age and family size, based on Shrewsbury’s present and projected future demographic profile. (H, LU)

- Provide adequate housing opportunities (both rental and homeownership opportunities) for those aged 55 and over.
- Provide adequate housing for the disabled and others requiring special assistance.
- Provide affordable housing for low- and moderate-income families using local, state, federal, and private resources.
- Utilize the cluster development technique effectively to reduce infrastructure costs, increase the amount of protected open space, and provide a housing alternative for families who do not wish to purchase and maintain a large lot.

Goal 7: Protect the quality of existing residential areas. (LU, H, EC, CIR)

- Minimize the negative impacts of commercial and industrial development—such as increased traffic, noise, and pollution—on residential areas, particularly where dwellings are located in or near business districts.
- Foster a safe street environment for pedestrians and cyclists.
- Provide public transportation to connect residents to Worcester and to the Grafton commuter rail station, and to provide intratown service to those without access to a vehicle, including senior citizens and young people.
- Preserve the sense of community that currently exists in the Town’s neighborhoods.
- Preserve the Town’s historic and pastoral character.
- Promote small retail and service businesses in several areas dispersed throughout the Town in order to provide convenient neighborhood shopping, increase neighborhood identity, and reduce the need for cross-town trips.

- Mitigate the potential negative impacts of growth on existing residential neighborhoods—impacts such as increased traffic, water quantity or quality problems, and rising property taxes.

Goal 8: Promote environmentally compatible and high-assessed value businesses and industries in Shrewsbury in order to provide convenient goods and services, local employment, entrepreneurial opportunities, and real estate tax income. (EC, LU, OS)

- Develop policies and incentives that promote the development and redevelopment of Shrewsbury’s existing commercial and industrial zones.
- Invest in infrastructure improvements such as public sewers and high-speed Internet access to encourage the highest and best use of business-zoned land.
- In appropriate areas of the Town, promote business uses such as offices, high technology and research and development activities, light industrial, and other “clean” businesses.
- Increase revenue from commercially- and industrially-zoned land to reduce Shrewsbury’s dependence on residential property tax.
- Promote the creation of a variety of local jobs and business opportunities so that Shrewsbury residents can work within the town.
- Maintain high standards of design and maintenance in existing and new business developments; encourage or require unsightly business developments to improve their appearance.
- Require appropriate mitigation from commercial and industrial establishments that negatively affect the Town either with noise, air, or visual pollution.
- Design the western portion of Route 9 to serve as a local business district and shopping street, not a major thoroughfare for commuters.
- Where strip developments presently exist, improve their appearance through sign control, landscaping, design review, and redevelopment.
- Where possible, place limitations on the type and amount of exterior lighting on commercial and industrial sites in order to minimize light pollution at night.

Goal 9: Provide functional and attractive public facilities for government, social and other public activities. (PF, LU)

- Provide modern and efficient facilities for critical public health and safety services including police, fire and ambulance.
- Identify and provide a suitable long-term facility for the public library.
- Moderate the rate of new growth so as not to overwhelm the Town’s ability to provide adequate facilities and services, including public schooling.

- Provide modern and adequately-sized schools to accommodate the predicted increases in school enrollment while maintaining the small class sizes and excellent school facilities necessary to create the best possible learning environment.

Goal 10: Provide adequate water, sewer and communications infrastructure in order to promote Shrewsbury’s land use objectives. (PF, LU)

- Safeguard Shrewsbury’s water supply so as to ensure an adequate quantity of clean water in the future for residential and business water users.
- Integrate growth planning with water resource planning in Shrewsbury to ensure that Shrewsbury’s residences and business have sufficient water for their needs but do not exceed the capacity of local aquifers to supply water.
- Continue to provide reliable sewer service to areas that are currently sewered.
- Expand sewer service only where it is required to mitigate environmental problems or promote land use objectives.
- Conduct effective wastewater planning to ensure that sewerage and sewer discharges from Shrewsbury do not negatively affect water resources in the Blackstone or SUASCO watersheds.
- Work with municipal and private service providers to bring high-speed data and telecommunications services to Shrewsbury’s residences and businesses.

Goal 11: Provide adequate recreational opportunities for all sectors of Shrewsbury’s population. (PF, LU)

- Develop a sufficient number of permanent playing fields for the growing number of team sports played within the town.
- Identify the future of Town-owned properties that may be used for recreation, such as the Scandinavian Athletic Club site, the landfill, and the Masonic property.
- Inventory and catalog Town-owned properties, including lands acquired recently through the \$5 million override, and identify which lands are most suitable for conservation, which for recreation, and which for other uses.
- Ensure that sufficient staffing and funding are allocated to the Town’s conservation and recreation functions for the continued development, maintenance, and enhancement of the Town’s public recreation and conservation areas.
- Expand the availability of indoor recreational activities for all age groups.
- Develop new and enhance existing public access, recreation facilities and public beaches on Lake Quinsigamond and the Town’s other water bodies.

- Provide a new swimming facility for Shrewsbury’s children, youth and adults.
- Encourage or require new subdivisions to provide additional neighborhood recreation facilities such as picnic areas and playgrounds.

Goal 12: Continue to provide a high level of public education for Shrewsbury residents. (PF)

- Monitor the adequacy of school buildings and provide expansions, renovations or new facilities when necessary.
- Ensure that the highest educational standards are maintained.
- Support the community’s long-range academic program needs.

Goal 13: Provide and maintain a safe and efficient transportation system for private vehicles and other modes of transportation. (CIR, LU, OS)

- Improve traffic safety at key intersections along arterial routes.
- Identify areas of roads with narrow pavement width or other substandard conditions and assess whether improvements are required for safety reasons, weighing the potential impact of these improvements on rural character or neighborhood character.
- Promote safe and efficient traffic movement along arterial routes by controlling the amount, location and spacing of curb cuts.
- Improve public transportation service in Shrewsbury including access to the Grafton Commuter Rail stop.
- Ensure that transportation improvements are not made at the expense of quality of life in existing neighborhoods.
- In Shrewsbury’s town center, ensure that traffic congestion and efforts to mitigate it do not come at the expense of traditional village development patterns, pedestrian accessibility, and aesthetics.
- Develop a multi-use system of path and trails through the Town to better accommodate pedestrians, cyclists, and others.
- Promote a pedestrian-friendly environment in Shrewsbury by providing sidewalks and crosswalks throughout the Town.

Goal 14: Maintain an efficient administrative and planning structure to provide government services and to implement this Master Plan and other long-term planning and budgeting projects. (IMP)

- Maintain an updated long-range capital facility plan, schedule and budget to ensure the timely and fiscally responsible provision of new Town facilities and capital projects.

- Ensure that there will be sufficient Town land for the construction or expansion of public facilities, and investigate acquiring new sites as necessary.
- As Shrewsbury grows, ensure that the Town administration can continue to be responsive to the needs of the community.

Goal 15: Work with the federal, state, and regional governments to ensure that Shrewsbury's priorities are realized in situations where jurisdictions overlap. (IMP)

- Work with state transportation officials to ensure that roadway improvement projects on Routes 9, 20 and 140 are compatible with the Town's goals, desires, and land use planning objectives.
- Work with other towns and with regional organizations and agencies to achieve a regional trail system.

Chapter 3

Comprehensive Plan



Shrewsbury Master Plan

April 2001

9. Plan for Future Land Use

9.1. Introduction

The Land Use Guide Plan (Figure 9-1) illustrates the recommended future land use patterns for the Town of Shrewsbury, including desired land uses, land allocation, and the physical layout for the Town. This Guide Plan is the centerpiece of the Master Plan recommendations, and is supported by recommendations for other Master Plan elements, contained in Sections 10 through 15.

The Land Use Guide Plan is intended to serve not only as the basis for new zoning regulations in the Town of Shrewsbury, but also as a blueprint for future development and conservation that can be consulted by citizens, developers, and town officials. Specifically:

- **The Town of Shrewsbury** can use the Guide Plan to help steer new development projects and conservation efforts into the most suitable areas of the Town. In addition, the Guide Plan will help the Town evaluate whether any particular project that comes before the Town for review is consistent with the Town's overall long-term goals. The Guide Plan will also assist Town officials in making decisions regarding capital improvements and allocation of resources. Having such a long-term plan significantly strengthens the Town's position should it encounter legal or political challenges in relation to land use issues, such as Comprehensive Permits or the enforcement of zoning bylaws.
- **Developers** can use the Guide Plan to identify where the Town wants them to build, and where it does not, as well as the type of development that is preferred or required in a specified area. The Guide Plan is an indicator to developers that density, design and permitting requirements will be more favorable to their project in areas that the Town has identified as suitable for such development, and more rigorous in other areas.
- **Residents and Landowners** can use the Guide Plan to identify the intended future plan for their immediate vicinity, and to gain a level of certainty about how the land around them will be used, developed, or conserved in the future.

Creating a Land Use Guide Plan that serves these functions requires differentiating various sections of a municipality according to their physical, environmental, locational, historic, social and economic traits. Shrewsbury currently has a very detailed zoning map consisting of fourteen different zoning districts. However, the land use planning that resulted in this zoning map occurred, for the most part, several decades ago, and is not always consistent with the Town's current expressed wishes. For example, several areas designated as "rural" on the zoning map have actually been developed at relatively high suburban densities, facilitated by the availability of public water and sewer services. Likewise, many of the Town's business districts have not attracted the desired types of development.

The Land Use Guide Plan divides the Town into eleven different land use categories based on the Town's expressed goals and objectives. In particular, the Land Use Guide Plan is intended to reduce the Town's overall residential buildout, provide opportunities for appropriate economic development, and minimize future traffic impacts through sensible land use planning. The Land Use Guide Plan is not the same as the Proposed Zoning Map (Figure 16-1, in the Implementation chapter); however, the Proposed Zoning Map is based closely on the Land Use Guide Plan.

9.2. Land Use Categories

The Land Use Guide Plan identifies eleven different land use categories, as summarized in Table 9-1, below:

**Table 9-1
Summary of Land Use Guide Plan**

Recommended Land Use	Acres	% of Town	Developable Acres	% of Town's Dev. Acres	% of Area That is Developable
Conservation/Recreation	1,592	11.2%	0*	0.0%	0%
Rural Residential	1,857	13.4%	949	26.6%	51%
Suburban Residential 1	4,306	31.0%	659	18.5%	15%
Suburban Residential 2	3,050	22.1%	720	20.2%	23%
Multi-Family Residential	415	3.0%	124	3.5%	30%
Local Shopping	139	1.0%	6	0.2%	4%
Shopping Center	188	1.4%	40	1.1%	21%
Highway Business	276	2.0%	104	2.9%	38%
Office/Research	694	5.0%	452	12.7%	66%
Limited Industrial	362	2.6%	116	3.2%	32%
Public/Semi-Public	1,026	7.4%	400	11.2%	39%
Total	13,905	100.0%	3,571	100.0%	26%

* The Conservation/Recreation land use area contains 213 developable acres. However, since it is recommended that these lands *not* be developed, this developable acreage is not included in the above table.

For each of the eleven Land Use Guide Plan areas, the following sections identify the existing environmental, locational and land use characteristics of the area, as well as the recommended future planning and zoning objectives for the area. Specific zoning recommendations for each area are discussed briefly here and in more detail in Section 16.

9.2.1 Conservation/Recreation

Most of the land in this area is already designated for conservation and/or recreation purposes and is protected from development by virtue of public ownership or environmental constraints (e.g., wetlands). In addition, this area also includes a few parcels that are not currently protected from development but are recommended for future protection because of their environmental sensitivity and/or their importance for Town or neighborhood recreation uses. The CR lands are well dispersed throughout the community, with at least a few parcels in each quadrant of the Town. Overall, the CR areas comprise 11.2% of the Town's land area.

Where appropriate, the CR lands could be developed to provide active recreation areas, such as ballfields or playgrounds. Some of these sites, such as Dean Park and the Scandinavian Athletic Club property, are already developed or proposed to be developed for active recreational uses (see Section 11.4). Areas that are more environmentally sensitive could be developed for passive recreational activities, such as walking, picnicking, fishing, or bird watching. To the extent possible, each area should provide Town residents with a multi-functional recreation area.

9.2.2 Rural Residential

Rural Residential areas are located in sections of the Town that are still relatively sparsely developed where residents have expressed a desire to retain rural character. The RR area also includes land that,

because of its environmental sensitivity (e.g., steep slopes, poor soils or aquifer recharge potential), should not be developed in a standard “cookie-cutter” style of suburban development. Many of these areas have remained rural precisely because of these environmental constraints and because public sewer and/or water were not available. RR areas comprise 13.4% of the Town and are located primarily in the eastern half of Town, with smaller parcels also located around Slocum Meadow, Gold Street, and the aquifer recharge area in northwest Shrewsbury.

The RR areas should allow less dense residential development than is currently allowed in the “Rural” districts. (The minimum lot size for single-family homes in the existing Rural A and Rural B districts is 20,000 s.f., which allows for a density of approximately 2.2 dwelling units per acre.) In addition, development should be conducted in an environmentally sensitive manner based on several criteria. Clustering of new development should be required or strongly encouraged through incentives in order to provide for the allocation of useable open space, contiguous trails and other amenities. Uses consistent with rural areas, such as agriculture, conservation, and recreation, should be permitted within the Rural Residential areas, while non-residential uses should be limited to those uses that are supportive of residential development, such as schools and religious organizations.

9.2.3 Suburban Residential 2 and Suburban Residential 1

The two Suburban Residential areas together comprise 53.1% of the Town’s land area, and include most of the existing residentially developed areas, most of the areas currently zoned “Residence,” and certain areas currently zoned “Rural.” Some of these areas, long connected to municipal water and sewers, have been developed at a comparatively high density while other areas, which lack public sewer, have been developed at a somewhat lower density.

The SR2 area is recommended for medium-density suburban development (most of these areas are currently zoned for a 20,000 square foot minimum lot size), while the SR1 area is recommended for higher density suburban development (most areas are currently zoned for a 12,500 square foot minimum lot size). Both areas are already nearly built out, with only 15% of the SR1 area and 23% of the SR2 area remaining as developable land. Allowed uses in the SR areas should be limited to residential uses and those uses that are supportive to residential areas, such as schools, religious organizations, and parks. A clustering bylaw currently permits cluster development in the Rural A, Rural B, and Residence A districts; the Town should continue to promote clustering development in order to preserve common open space.

9.2.4 Multi-Family Residential

This land category corresponds mainly to the existing multi-family zoning districts in Shrewsbury, which include the MF-1, MF-2, and Apartment districts. The MFR area also includes two small parcels of land near the intersection of Route 9 and South Street that are currently zoned for Commercial Business. Many of the existing multi-family districts were established specifically to accommodate individual multi-family housing developments, and are fully or nearly built out. These areas are located mainly along the major road corridors in the Town, particularly along Route 9. Other areas are located along Main Street, South Quinsigamond Avenue, and Route 20. Significant developable lands remaining in the MFR area include the parcel near the intersection of Routes 20 and 140 (which is currently proposed for an over-55 community) and the land adjacent to the Yorkshire Apartments on Route 9 near South Street.

Since the number of areas allocated for multi-family residential development is limited, the Town should reserve the remaining developable land in the MFR area for multi-family housing. Senior housing is an appropriate use in these areas, and should be allowed. Given some residents’ concerns about the impact of other types of apartment and condominium housing (such as housing for young single people and married couples), these uses could be allowed only by special permit.

9.2.5 Local Shopping

The Local Shopping areas are intended to function as small, pedestrian-oriented retail and service centers for the convenient provision of goods and services to local residents and employees, and, to a limited extent, to a wider clientele. The LS area includes land currently zoned “Neighborhood Business” as well as land zoned “Limited Business,” and is located in several locations in the more densely populated areas of Town. The largest two LS areas are in the town center and in the Route 9 shopping district.

Rather than continuing to allow the myriad of commercial uses currently allowed in the “Limited Business” district, uses in the Local Shopping areas would be more focused. Goods and services provided in the LS areas should include small grocery stores, delicatessens, dry-cleaners, laundromats, convenience stores, gift shops, flower shops, and other general retail stores. Appropriate uses should be small-to-medium in scale and should be directed primarily toward meeting the needs of the residents and employees found in the surrounding area.

As these shops will likely attract pedestrian traffic, site design guidelines should identify appropriate building layout, site configuration, and required pedestrian facilities. The designs guideline should address issues such as setback requirements, sidewalks, and curb cuts, as well as other aesthetic guidelines, such as design and signage standards to promote attractive development. To maximize the potential of the LS areas, some public investment may be required, such as streetscape improvements or public/shared parking facilities. To further enhance village-style development, improvements to the Town Common, Library area, and areas adjacent to the Town Center roadways should be supported. These improvements may include, for example, ornamental lighting, landscaping, and village-style street furniture.

9.2.6 Shopping Center

Like the Local Shopping area, the Shopping Center area would be developed throughout some of the more densely populated areas of Town for the convenient provision of goods and services to local residents and employees. Unlike the LS area, however, the SC area is intended for larger-scale retail and service establishments in a multi-store shopping center environment. The SC areas will be primarily auto-oriented, although pedestrian accommodations should be also provided.

The SC areas are purposefully distributed throughout the Town and located in close proximity to residential neighborhoods and major employment centers in order to minimize the need for cross-Town trips by Shrewsbury residents and employees. The SC area includes several existing shopping center areas including the Olde Shrewsbury Village, Fairlawn Shopping Center, White City, Spags, and Stop & Shop on Route 9. In addition, new SC areas are recommended at the intersection of Main Street and North Quinsigamond Avenue and at the intersection of Route 9 and South Street. Both of these sites are located in sections of the Town that are underserved in terms of basic shopping and services. The Route 9 site is located adjacent to major office developments and multi-family housing developments.

Within the SC area, zoning regulations should target multi-business shopping center developments undertaken by a common developer. These developments should provide shared driveways, internal circulation roads, and shared parking, as well as coordinated architectural design, signage, and landscaping. Quinsigamond Plaza on Route 9 is an example of the type of development that might be targeted for the SC areas.

9.2.7 Highway Business

The Highway Business areas include commercial and retail uses that, like the Shopping Center districts, attract a wider consumer base than the Local Shopping areas. These areas primarily consist of land that is

presently zoned either Commercial Business or Limited Industrial along Route 9 and Route 20. The Highway Business area is intended to attract shoppers from throughout the Town as well as from neighboring communities. This district currently contains uses such as Borders Books, Home Depot, and smaller businesses such as self-storage facilities, restaurants and rental centers. These businesses are designed to be auto-accessible, with substantial parking capacity and few, if any, pedestrian amenities.

The HB area should allow a wide range of commercial uses. However, in order to minimize potential conflicts, residential uses should not be allowed (residences are currently allowed in the Commercial Business district, the district that this area most closely resembles). For those places where the HB areas abut residential districts, generous landscaped buffers should be required in order to shield residents from the visual impacts associated with the commercial development.

HB areas are distinguishable from Shopping Center areas in that HB areas are generally intended to be developed as independent, stand-alone developments rather than integrated multi-business shopping centers. Within the HB areas, this style of development is more appropriate given the existing uses as well as the parcel configurations that occur along these portions of Route 9 and Route 20. Design standards within the HB areas should specify requirements for curb cuts and access, landscaping, and building design in order to make these areas as safe and attractive as possible.

9.2.8 Office/Research

The Office/Research area is intended to provide designated areas for high-value office developments and similar uses. While the Town currently contains two “Office-Research” districts, both are relatively small. Most of the land available for office development is within the “Limited Industrial” district. However, because the “Limited Industrial” district allows such a wide range of uses, much of this land has already been developed, or fragmented, by lower-value uses (i.e., those that have lower assessed value and thus generate less tax revenue) such as trucking and distribution facilities. Many residents have suggested that the Town should attempt to capture “quality” business development (such as high-tech research parks), instead of the transportation, warehousing, and distribution establishments that the Town currently attracts. To encourage such development, appropriate lands must be reserved for these uses and large parcels must not be divided up for other commercial developments. For these reasons, it is recommended that the OR area be expanded to include 690 acres (452 developable acres).

The OR area includes several parcels along Route 9 that are presently zoned “Limited Industrial” but are well suited for Office/Research development, given their parcel depth and accessibility. In addition, several parcels along Route 20 should be re-allocated to Office/Research. All the sites designated as OR are characterized by good road access and relatively few environmental constraints. Within the OR areas, allowed uses should be limited primarily to office buildings, research laboratories and similar facilities. Industrial and other commercial uses should not be allowed. One exception is that small-scale retail and service establishments should be allowed as accessory uses to serve employees within the OR areas. Such uses might include restaurants, coffee shops, dry cleaners, and similar businesses. Again, for areas where residences lie adjacent to OR areas, generous landscaped buffers should be provided to shield the residents from the visual impacts associated with the office development.

9.2.9 Limited Industrial

The Limited Industrial area consists primarily of land zoned “Limited Industrial” that is already developed with industrial uses. Most of these areas are located along Route 20, with a few small areas along Route 9 and on Main Street at the Worcester border. The LI areas are intended to allow the continuing existence and limited expansion of existing businesses such as trucking, distribution, warehousing, and manufacturing facilities. The retention of these areas will encourage Shrewsbury to retain a diversity and balance of businesses and economic activities. Many of the areas that are currently

zoned “Limited Industrial” but are undeveloped are recommended to be reclassified in favor of Office/Research uses. Overall, it is recommended that 362 acres be allocated for Limited Industrial uses, of which 116 acres are developable.

The LI areas should be retained primarily for industrial and manufacturing uses. Landscaped buffers should be provided to shield the visual impacts associated with industrial development. Performance standards should be established to minimize negative impacts associated with noise, air pollution, and traffic that might be generated by these land uses.

9.2.10 Public/Semi-Public

The Public/Semi-Public area is comprised of municipal facilities, schools, state properties, and other institutions. This area, consisting of 1,026 acres, includes the Town municipal offices, the University of Massachusetts research center, St. John’s Preparatory School, the new high school, the Glavin Center, the former Grafton State Hospital, and other lands. This area is intended to provide space for institutional uses as well as undeveloped land in public ownership (although protected conservation land is generally designated as Conservation/Recreation). While Town, state, and federal lands are generally exempted from local zoning provisions, the establishment of a Public/Semi-Public district is nevertheless important for two reasons. First, it can encourage certain types and designs of development that might be proposed by Town, state or federal entities. Second, if these lands are ever sold to the private sector, it can require that land uses be limited to relatively low-impact uses such as institutions and open space.

9.3. Buildout Projections Under the Land Use Guide Plan

The Table 9-2 compares buildout under the Town’s zoning regulations to buildout under the recommended Land Use Guide Plan.

**Table 9-2
Buildout Projections Under the Land Use Guide Plan¹**

Zoning District/Land Use Guide Plan Area ²	Existing Zoning			Land Use Guide Plan		
	Devel- opable Acres	Residential Dwelling Units	Commercial/ Industrial Square Feet	Devel- opable Acres	Residential Dwelling Units	Commercial/ Industrial Square Feet
Conservation/Recreation	0	0		213	0	
Rural Residential ³	1,562	2,609		949	788	
Suburban Residential 1&2	1,160	2,438		1,379	2,882	
Multi-Family Housing	89	394		124	549	
Local Shopping ⁴	5		0	6		75,000
Shopping Center ⁴	--		--	40		525,000
Highway Business ⁴	273		3,600,000	104		1,350,000
Office/Research ⁴	114		2,700,000	452		11,800,000
Limited Industrial ⁴	581		20,200,000	117		4,100,000
Public/Semi-Public ⁵	--		--	400		0
Total Buildout	3,784	5,441	26,500,000	3,784	4,219	17,850,000

¹ These buildout projections are based on buildout formulas calculated for the 1999 Buildout Analysis, except where otherwise noted. For this table, the 1999 buildout analysis has been updated to reflect recent land development and open space acquisitions. This update also corrects an apparent error in 1999 Buildout Study in the amount of developable Limited Industrial land. Finally, this table reflects the re-zoning of the parcel of land on the southwest corner of Routes 20 and 140 from Rural B to MF-2, which increases the buildout potential for multi-family housing.

² Existing zoning districts are not directly comparable to proposed Land Use Guide Plan Areas. However, analogous categories are lumped together for comparison purposes. The Rural Residential area corresponds to the existing Rural A and Rural B districts; the Suburban Residential 1 and 2 areas correspond to the existing Residence A, B-1 and B-2 districts; the Multi-Family area corresponds to the existing MF-1, MF-2, and Apartment districts; the Local Shopping area corresponds to the existing Limited Business and Neighborhood Business districts; the Highway Business area corresponds to the existing Commercial Business district; the Office/Research area corresponds to the existing Office-Research and Limited Office-Research districts; and the Limited Industrial area corresponds to the existing Limited Industrial district.

³ Assumes that a zoning change is implemented that doubles the minimum lot size from 20,000 s.f. to 40,000 s.f. If lot size is not increased in the Rural Residential district, full residential build-out would be 1,576 dwelling units, rather than 788 units. Total buildout would be 5,007 dwelling units instead of 4,219 du.

⁴ This calculation accounts for new development only. However, these districts may also have considerable redevelopment potential.

⁵ While new development could be accommodated in this district, it will depend on specific development programs proposed by public landowners and is therefore not estimated or included in the totals.

As shown in Table 9-2, the Land Use Guide Plan reduces the Town’s residential buildout capacity by approximately 22% compared to the Town’s current zoning. Commercial and industrial buildout also decrease, but much more land becomes available for Office/Research development and Shopping Center development while considerably less land is available for Limited Industrial and Highway Business uses.

9.4. Land Use Policies

This section provides additional information on some of the recommendations for land use and development practices within the eleven Land Use Guide Plan areas. The ideas presented address several of the major concerns about the Town’s future that residents expressed through the master planning

process such as managing growth and strengthening the character of the Town's shopping districts. More detailed recommendations about zoning and other policies are presented in Section 16.

9.4.1 Growth Management

During the master planning process, the foremost concern of many Town residents was Shrewsbury's recent population growth and the impacts of that growth. An average of 250 residential building permits have been authorized per year for the past ten years. The population of public school students from pre-K to 12th grade has increased by 48% between 1990 and 2000. With this growth in population, the demand on municipal services and facilities has increased, putting particular strain on the Town's water supply, recreational facilities, and available open space. In response to the Town's concerns and desired future development patterns, the Town should adopt a multi-pronged strategy to manage growth that includes the following components:

- **Controlling the rate of growth** to prevent large short-term impacts on public facilities and services.
- **Controlling the density of development** to limit the Town's overall residential buildout capacity.
- **Controlling the style of development** to minimize the environmental and visual impacts of new development.
- **Protecting open space** through a variety of mechanisms.

The Implementation chapter contains a more detailed program for adopting these growth management tools.

9.4.2 Shopping Districts

Many residents at the master plan forums expressed a desire to preserve the pedestrian-friendly character of the town center and enhance the western portion of Route 9 as a pedestrian-oriented shopping district. To accomplish these objectives, the Town should consider the following strategies:

1. Infill Development
2. Enhanced Pedestrian Environment
3. Zoning Modifications
4. Design Guidelines

See the Town Center District Study and the Route 9 West District Study in Appendix C for additional information.

Infill Development: Infill development is the targeted redevelopment of vacant parcels in otherwise developed areas. Redevelopment of these parcels, as well as quality redevelopment of underutilized parcels throughout the Town, should be an economic development priority. Redevelopment of the vacant parcel located in the heart of the town center (which currently contains some parking spaces and the remains of a demolished building) should be a particular priority. Many towns have successfully utilized incentives to promote infill redevelopment, including density bonuses for appropriate development and establishing a streamlined permitting process for targeted areas. In addition, public investments in the streetscape and other amenities such as public parking can generate matching private investment in an area.

Enhanced Pedestrian Environment: The Town should focus on enhancing the pedestrian environment in the Local Shopping areas in the town center and along Route 9. This will require a combination of public investments and regulations. Public investments should focus on creating a safe and attractive

sidewalk area with landscaping and perhaps other amenities. Private business owners can play a role in these improvements. Regulations should focus on controlling curb cuts, parking and landscaping on private property.

Aside from measures to improve safety for pedestrians, additional streetscape improvements can be completed to enhance an area's aesthetic appeal. Providing amenities such as planters, benches, and wooden trash barrels would encourage pedestrian activity in the town center. While utility lines have already been buried underground within the heart of the town center, creating an attractive and uncluttered appearance, overhead utility lines remain on portions of the streets feeding into the Town center—Route 140, Maple Avenue and Main Street.

Zoning Modifications: The range of uses allowed in the Limited Business district—the current classification in the town center and parts of Route 9—is not necessarily conducive to establishing a village commercial area. For example, permitted uses such as medical buildings and large retail stores would be out of character. Conversely, bed and breakfast establishments, which already exist in the town center, are not allowed. Elements of pedestrian-oriented village-style development include small building setbacks (or none at all), a mix of small retail and service establishments, and parking either on the street or behind the building. In terms of dimensional requirements, additional flexibility might be beneficial in promoting village-style development. Zoning regulations aimed at promoting village-style development might also establish a maximum setback distance and prohibit auto-oriented site layouts with large parking lots in front of the building.

Design Guidelines: A design guideline could be drafted to require that new construction throughout the Town reflect the Town's historic development pattern. Design standards can be written into the existing zoning bylaw, or a separate design review bylaw could be drafted and administered by an appointed design review board. See Section 16.4 for additional information on this topic.

9.4.3 Appropriate Mixed-Use Development

At the master plan forums, many residents expressed support for mixed-use development as long as it does not adversely affect existing neighborhoods. In addition, mixed-use development has benefits in terms of convenience for Shrewsbury residents and employees and in terms of reducing the need for vehicular travel to conduct one's daily routine (home, work, school, shopping, entertainment, etc.). For these reasons, the Town's zoning regulations should allow a certain amount of flexibility for developers to propose mixed-use development.

Appropriate mixed-use development in Shrewsbury could include the following:

- **Convenience retail in residential areas:** While the corner store may be a thing of the past, retail development is still appropriate within higher-density residential areas such as multi-family and retirement housing communities. As part of the special permit process for these types of developments, developers should be allowed to integrate retail and service businesses that cater to the housing development and its immediate vicinity.
- **Convenience retail in office areas:** Within the Office/Research areas, developers should be allowed to include convenience retail establishments that primarily cater to the workers within the Office/Research development. This will provide convenience for employees and minimize the need for employees to drive in order to conduct small daily errands. Having small stores and service establishments within easy walking distance of the office also encourages workers to carpool or ride public transit to work.

- **Promoting synergies between adjacent land use areas:** The Land Use Guide Plan provides opportunities for residences, shopping, and workplaces all to be located within close proximity to one another. For example, in the area near the intersection of Route 9 and South Street, several hundred residential units are located near major workplaces and a proposed shopping center district. In such areas, policies can be adopted that promote live-work situations and other strategies for reducing auto travel. See Section 15 (Transportation) for further discussion.

10. Natural and Cultural Resources

Protection of Shrewsbury’s natural and cultural resources is an essential element of the overall Master Plan. The Town has already taken several significant steps to protect its natural resources. Most notably, the Town passed an Aquifer Protection Bylaw in 1988 to protect the Town’s aquifers. However, as the Town continues to be developed, several additional measures need to be taken to ensure the long-term protection of natural and cultural resources. Some of these needs can be addressed through regulations or incentives; others will depend on the stewardship and vigilance of the Town’s citizens.

10.1. Water Resources

10.1.1 Wetlands

Wetlands perform a number of important functions that contribute to a community’s continuing ecological health. While the Massachusetts Wetlands Protection Act provides significant protection for wetlands in Massachusetts, many communities have chosen to supplement this Act with local wetland regulations in order to provide additional protection, as well as greater local control over the review of projects proposed in or near wetlands.¹ Shrewsbury should consider adopting a local wetlands protection bylaw. This bylaw should complement the protections that are already provided in the state Act by including the following provisions:

- **Isolated Wetlands:** The local bylaw should apply to all wetlands, even isolated wetlands that are not covered under the Massachusetts Wetlands Protection Act.
- **Buffer Zones:** Some communities have chosen to adopt a no-build buffer zone of 25’ or 50’ around the edge of wetlands. This is stricter than the state Act, which ordinarily allows activities within the wetland buffer zone subject to an Order of Conditions.
- **Vernal Pools:** Vernal pools are a particular type of isolated wetland that provides the only breeding habitat for several rare amphibian species, as well as habitat for other animals. Ideally, a 100’ no-build buffer should be provided around vernal pools, since the amphibian species that breed in these pools also require adjacent upland habitat in order to survive during the adult stage of their life cycle. Shrewsbury has three certified vernal pools.
- **Filing and Review Fees:** Establishing a local bylaw allows the Conservation Commission to charge additional application fees in order to help defray the cost of reviewing projects that fall under the bylaw’s jurisdiction. In addition, the bylaw can require the applicant to pay for the reasonable cost of a technical expert (consultant) to review the applicant’s wetland flagging and/or project plans.

If Shrewsbury chooses to adopt a local wetlands protection bylaw, the most effective approach is to adopt a general bylaw. Under such a bylaw, the delineation of wetlands would be determined through field studies conducted on individual sites, based on a set of hydrological, vegetation, and soils characteristics. This is preferable to creating a townwide wetlands map, which would be expensive to create, and not totally accurate since wetland boundaries can shift over time. In addition, a general bylaw requires only a

¹ Decisions made by the Town’s Conservation Commission pursuant to the MA Wetlands Protection Act may be reviewed and overturned by the Department of Environmental Protection. However, a local wetlands regulation provides local authorities with full decision-making and enforcement responsibilities and powers; the state will have no jurisdiction over a locally adopted bylaw.

majority vote at Town Meeting and is not subject to the same grandfathering provisions as a zoning change.

10.1.2 Surface Water

Shrewsbury continues to have problems with pollution in its surface water bodies. The water quality in Lake Quinsigamond has fluctuated in recent years due to infiltration from on-site waste disposal systems, runoff from roads, and overflowing storm sewers. Jordan Pond has been subject to continuous water quality problems and is no longer regarded as suitable for swimming. Lake Quinsigamond and Flint Pond have been beset with nuisance aquatic weeds, due in part to the failing septic systems in the Edgemere neighborhood.

While some residents of Shrewsbury, made wary by the on-going problems at the Town's lakes and ponds, are skeptical about the effectiveness of attempting to clean up the water resources, these resources are critical for both the health of the Town's environment and for maintaining a high quality of life in Shrewsbury.

Over the years, many studies have been conducted on water quality in Lake Quinsigamond, but few or no actions were taken as a result of the studies. The Town should prepare a single lake management plan with a specific year-by-year action plan to be implemented. In addition, the Town should adopt a long-term strategy to improve water quality townwide by focusing on the following efforts:

Control of Point Source Pollution

Point source pollution is pollution that emanates from a single, identifiable location, such as a sewage outfall pipe or factory discharge pipe. Point source pollution has been effectively controlled through environmental laws such as the Clean Water Act. However, the Town should remain vigilant to ensure that these pollution sources have been eliminated.

Control of Nonpoint Source Pollution

Nonpoint source pollution (or polluted runoff) derives from a myriad of sources found in human-altered (and sometimes natural) landscapes. Major sources of nonpoint source pollution include runoff from paved surfaces, pesticides and herbicides, farm and animal wastes, and human wastes. The ongoing replacement of failing septic systems in the Edgemere neighborhood and the planned replacement in the Oakland Avenue neighborhood will likely improve water quality in Lake Quinsigamond. Unfortunately, the Lake will still be subject to considerable runoff from the Town's major roadways, including Route 9, Route 20, and I-290.

Nonpoint source pollution is diffuse, derives from numerous sources, and is often the accumulated result of many small actions whose origin or origins may be difficult to trace. For this reason, an effective program to control nonpoint source pollution typically requires several strategies in combination, and must involve a wide cross-section of the community including individual homeowners. The selection of these strategies often needs to occur on a case-by-case basis, and requires weighing the cost or burden of a given strategy against its likely environmental benefit. In Shrewsbury, several strategies are appropriate. These include:

- **Adopt Townwide Stormwater Management Standards:** The Massachusetts Department of Environmental Protection (DEP) has already mandated the Town to create townwide stormwater management standards. Once adopted, these standards should apply to all new development and should address removal of suspended solids, stormwater infiltration, and peak discharge rates. Most of DEP's standards are "performance standards," and therefore allow the engineer to select the most

cost-effective technology or practice to achieve the given standard. Appropriate documentation requirements and review procedures will be required as part of such a bylaw.

- **Promote Better Design:** Shrewsbury's subdivision regulations and Cluster Zoning bylaw should promote site layouts that minimize impervious surfaces such as roadways and driveways. These regulations should also promote the retention of natural vegetation, since lawns generate a significantly higher runoff rate and pollutant load than undisturbed forests do.
- **Environmentally-Responsible Town Activities:** Maintenance and management of roads and other public paved surfaces have a significant effect on local water quality. The local and state Highway Departments in conjunction with the Conservation Commission should assess their current programs for road de-icing and identify any opportunities to reduce the impact of road management activities on water quality.
- **Public Education:** Because nonpoint source pollution is primarily the result of numerous small, individual actions, public education is an essential strategy for addressing the problem. Shrewsbury should strive to increase its citizens' knowledge of the Town's water resources and the steps they personally can take to help protect them. One effective way to do this is to distribute informational brochures on topics such as the proper use and maintenance of septic systems; low-impact lawn and garden care (proper use of lawn/garden chemicals, as well as organic and non-chemical alternatives); and information for homeowners who abut wetlands about how to protect these areas. Such information could be developed jointly by the Conservation Commission and the Board of Health and distributed at low cost in the Town's water bill or tax bill mailings and on the Internet.
- **Creation of Special Area Protections:** As mentioned previously, the Town should rezone environmentally sensitive areas to Rural Residential to ensure that they are not over-developed in a way that could contribute to pollution loads. In particular, the Town should not allow steep slopes to be intensively developed, since erosion and runoff from such sites, once developed, can be a serious problem. Most of these protections should be implemented through the use of overlay districts such as the Lakefront Overlay District (see Section 11.5) or the Ridgeline and Hillside Overlay District (see Section 16.6.3).

Natural Buffers Around Water Bodies

Natural, vegetative buffers around surface water bodies are an effective barrier against pollutants that might otherwise enter water bodies via surface runoff or groundwater discharge. Vegetated buffers absorb nitrogen and phosphorous pollution, neutralize various organic and hydrocarbon chemicals, and detain sediment and the heavy metals that often adhere to it. The Massachusetts Rivers Protection Act is a powerful environmental law that restricts development within 200 feet of any perennial river or stream (defined provisionally as rivers and streams that appear as solid blue lines on USGS topographic maps). This regulation, if properly enforced by the Shrewsbury Conservation Commission, will ensure adequate buffering around perennial streams such as West Brook, Big Bummet Brook, and Rawson Hill Brook. Currently the Town-employed civil engineer works part-time as the Town's conservation agent.

For water bodies that are not protected by the Rivers Protection Act, such as ponds and intermittent streams, the Town should attempt to establish buffers of natural land around these bodies. This is particularly important for seasonal drainage channels that fill with water during major storms, when sediment and pollutant loads are large. The protection of land around intermittent streams should be identified as a review criterion for new developments.

Water Quality Monitoring

Monitoring is important because it can help to identify water quality threats before they become major problems. As the Town institutes measures to preserve water quality, long-term water quality data will also allow the Town to determine whether its water quality protection programs are effective, or need improvement. Water quality monitoring should be conducted several times a year in both dry and wet weather, and should test for fecal coliform counts, biological oxygen demand, turbidity, and perhaps other indicators. Water quality monitoring could be conducted partially or entirely by school groups and volunteers, thus reducing its cost and promoting education about the Town's water resources.

10.1.3 Groundwater

The Aquifer Protection Overlay District (APOD) was added to the Zoning Bylaw to protect Shrewsbury's active and potential aquifers and recharge areas from contamination. Any area within the APOD is subject to the more restrictive designation of either the overlay district or the underlying district. Zone 1 of the APOD includes land that falls within a 400-foot radius of an existing or potential municipal well site. Zone 2 is the area of land that directly recharges existing or potential municipal wells under normal pumping conditions. Zone 3 includes that land which contributes surface water and/or groundwater to Zone 2 and/or Zone 1.

Many residents have expressed concern about whether the Town is doing enough to protect its water supplies. Some residents have questioned whether the APOD offers adequate protection. A significant portion of the APOD area surrounding the Town's most productive wells in the northwest quadrant of the Town is currently zoned for Commercial Business or Limited Industrial purposes.

In general, the APOD regulations offer good protection for the Town's groundwater sources. However, because several potentially damaging uses are allowed within the APOD by special permit, the effectiveness of the APOD regulations hinges upon the administration of these special permit provisions.² Eliminating these special permit provisions would increase the certainty that the aquifer will be protected in the future, but may also unnecessarily limit the development of certain sites within the APOD.

Whether or not the APOD regulations are altered, the Town should pursue low-intensity land uses for the significant aquifer recharge areas in the northwest corner of the Town. Most of these areas are recommended for Rural Residential or Conservation/Recreation, except where existing developed land uses currently exist. Given that much of business-zoned land in the APOD elsewhere in Town is already developed with commercial or industrial uses, it makes little sense to attempt to rezone all of the land. In the southwest quadrant of Town, in APOD Zone 3, it is recommended that several parcels previously zoned for Limited Industrial uses be rezoned to Office/Research. Where commercial or industrial uses already exist within the APOD, the Town could adopt guidelines that would apply to redevelopment or significant expansion of uses on the site.

10.2. Habitats and Ecosystems

Functioning habitats and ecosystems depend on large contiguous areas of undeveloped land. In fragmented landscapes, many indigenous species are no longer able to find adequate habitat and ecosystem functions (such as groundwater and surface water flow) are impaired. An effective conservation plan should preserve undeveloped areas that represent the gamut of natural habitats occurring within a town, and should be connected with natural corridors of undeveloped land. The Land

² Special Permit uses allowed in APOD Zone 2 include residential and non-residential uses with more than 30% impervious coverage as well as non-residential uses involving the above ground storage or use of hazardous materials. Allowing such uses in the APOD potentially threatens the effectiveness of the district.

Use Guide Plan attempts to meet these objectives by designating the areas of the town that are most important for plant and wildlife habitat as Conservation/Recreation and Rural Residential. Although residential development will occur within the Rural Residential areas, zoning and other policies should be written so as to minimize its impact on natural communities. For example, open space in cluster developments should be designed to preserve large parcels of the best habitat that connect to adjacent open space parcels—rather than leftover scraps of land that are unusable for humans or wildlife.

10.2.1 Identifying and Protecting Critical Habitat Areas

In addition to the regulatory measures discussed above, habitat protection can be accomplished through the work of local volunteers. The Massachusetts Natural Heritage and Endangered Species Program (NHESP) has established procedures through which local volunteers, such as biologists and amateur naturalists, can identify and certify vernal pools. Volunteers can also document evidence of rare and endangered species that will assist in the identification of Rare Habitat and Priority Sites as designated by NHESP. Local volunteers in Shrewsbury should continue their efforts to identify and certify additional vernal pools and other important habitat areas.

In addition, as discussed above, Shrewsbury should consider adopting a local wetlands protection bylaw that protects vernal pools and the 100-foot buffer around vernal pools. The bylaw should state that, as additional vernal pools are certified in the future, they are automatically included in this district.

10.2.2 Land Management

Simply protecting land against development is inadequate to ensure that the land will continue to function as habitat for native plant and wildlife species. For example, as a result of pollution as well as soil and hydrological disturbance, the species composition in many of Massachusetts' wetlands has been altered so that invasive species such as *Phragmites* reeds and Purple Loosestrife have crowded out native species. The Town should promote ecologically sound land management through the following steps:

- Develop and implement management plans for existing Town-owned conservation properties so as to maximize their value for native plant and wildlife species.
- Work with volunteers to monitor invasive species on conservation lands in Shrewsbury, and develop eradication plans if necessary.
- Promote wildlife movement by minimizing fencing in conservation areas, particularly where adjacent open space parcels abut one another, and by providing for the preservation of uninterrupted wildlife habitat. The southeast quadrant of Town as well as Slocum Meadow are relatively undeveloped compared to other areas of the Town and still provides significant wildlife habitat.
- As Lake Quinsigamond is a north/south migration corridor for many bird species, the conservation of this water body is especially important for these species.

10.3. Historic and Archaeological Resources

Shrewsbury has attempted in the past to identify and protect its historic resources. The Town's previous Master Plan credits the Shrewsbury Historical Commission and the Historic District Study Committee with initiating the historic preservation activities that were then underway in the Town. Due to the efforts of these two groups, a number of local structures and sites have been listed on the State and National Registers of Historic Places and one local historic district was established. Perhaps most importantly, the

Town's residents have become keenly aware of the Town's historic resources and identify the restoration and preservation of these historic resources as a common goal.

Throughout the master planning process many residents emphasized that the Town should take measures to preserve the town center and strengthen its viability as a pedestrian-oriented shopping district. Some of this work is already in progress. For example, the town center's bandstand is undergoing a renovation and the town common will be undergoing a similar landscaping and pedestrian access rehabilitation. The Town should pursue public and private funding to fund enhancement projects for the Town Common and for the center of Town. In addition, the Town should investigate the following measures to further increase the level of protection for Shrewsbury's historic resources:

- **Historic Buildings Protection:** As part of the design review previously recommended for the town center area, the Town should include criteria for preserving the character-defining feature of historically significant buildings. The purpose of this review is to preserve existing buildings and facades in private ownership and help owners provide alternatives to demolition of historic structures.
- **Conservation Easement or Façade Easement:** Under a conservation easement, the building owner agrees to place design restrictions on a historically significant building so that the building's historic character may be maintained. The building owner donates a *Conservation Easement* to a non-profit organization, which runs with the property; this easement gives the non-profit organization the right to review and approve changes to the building, enforce the terms of the easement, and compel the owner to remedy any violations. In return, the owner can use the value of the conservation easement, which is the decrease in the building's market value as a result of the design restrictions (as determined by a qualified appraiser), as a charitable deduction against federally taxable income.

A related concept is a *Façade Easement*, a tool which encourages private owners to rehabilitate historic structures. When a private owner rehabilitates part or all of an historic structure and places a façade easement on the rehabilitated portions, the Town does not assess additional property value for property tax purposes as a result of the rehabilitation. In return, the owner agrees not to alter the façade's historic character.

- **Protection for Sites on Private Property:** Many of Shrewsbury's historic resources are located on private property. These resources range from colonial-era houses to historic homesteads to the early 20th century town library. The subdivision review process should require the identification of these resources on initial plans, so that the Planning Board may work with developers to preserve these resources to the extent possible.
- **Designating Additional Historic Resources:** Since the Town's historic district was designated as a National Register district in 1976, no other districts and few additional sites in Shrewsbury have been added to the National Register. The Town's Historic Commission should develop an updated inventory of historic structures and sites to evaluate for possible designation. This inventory might give consideration to homes constructed more than 75 years ago. It may also evaluate particularly scenic spots that have a particular historic significance where a plaque or sign could be placed. The Historical Commission should continue its efforts toward identifying and protecting Shrewsbury's historic resources through existing state and federal programs.
- **Enhancing Gateways to the Town Center:** Certain sections of Maple Street, Main Street, and Route 140 that might not be appropriate for historic district designation nevertheless contribute to

(or detract from) the town center's historic character by serving as gateways to the historic district. As discussed previously, zoning and design bylaws should focus on enhancing these gateways to the town center, particularly from Maple Avenue.

- **Scenic Roadways:** The Massachusetts General Laws allow municipalities to designate sections of municipally-owned roads as Scenic Roadways in order to protect their character. This protection places certain restrictions on tree removal, stone wall removal, and street widening within the road right-of-way. See Section 16.6.6. for additional information on Scenic Roadways bylaws.

A final tool to help fund historic preservation is the Community Preservation Act. This act, which passed during the summer of 2000 (Chapter 267 of the Acts of 2000), provides Massachusetts communities with the option of creating a property tax surcharge of up to 3% to help fund preservation activities. The regulation stipulates that at least 10% and up to 80% of the money raised can be used for historic preservation. For cities and towns that adopt the Community Preservation Act, matching state funds will also be distributed for local preservation efforts.

11. Open Space and Recreation

One common goal that emerged at the master plan public forums was the desire to preserve as much of town's remaining open space as possible. Many residents perceive the Town as being already over-developed and wish to preserve undeveloped land both in their own neighborhoods and townwide. Some residents even stated that the Town should preserve all of its remaining undeveloped land.

This section outlines a multi-pronged open space protection strategy that the Town can adopt in order to preserve a significant portion of its remaining undeveloped land. In addition, this section includes recommendations related to active and passive recreation as well as enhancing access to and use of the Lake Quinsigamond shoreline.

11.1. Previous Open Space Preservation Efforts

Until recently, Shrewsbury was a partially suburban and partially rural community. Open space located around the northern, eastern and southern edges of the Town consisted mainly of privately-owned forests, fields, and farmland. Some of these lands were temporarily protected under Chapter 61, 61A or 61B, while other unprotected lands remained undeveloped largely because there was not market demand to develop the land. The recent development boom during the 1990s has significantly reduced the amount of private, unprotected open space within Shrewsbury.

In response to this loss of open space, the Town allocated \$5 million for the acquisition of vacant land throughout the Town, which occurred from 1997-1999. Most of these parcels were acquired for general "municipal" use; only a few were specifically designated for conservation. By designating the land for "municipal" use, the Town reserves the right to develop it at a later date, although few of the municipal parcels are the subject of current development plans.¹ Because most of the recent acquisitions are designated for municipal use, the actual amount of protected open space in Shrewsbury has not significantly increased in recent years, while the total amount of undeveloped land has decreased sharply.

Until recently, nonprofit land trusts and conservation organizations did not play a role in land preservation in Shrewsbury. Within the past year, however, the Sudbury Valley Trustees, a regional land trust, secured a conservation easement on two farmland parcels on South Street.

11.2. Recommended Land Protection Plan

While Shrewsbury is no longer the rural and agricultural community that it once was, the Town can preserve some of its rural character and many of its natural resources by preserving intact areas of its remaining open space. Identifying the ways in which the community can preserve open space throughout the Town has been a central component of the Land Use Guide Plan.

¹ By designating the land for "municipal" purposes, the Town leaves its options open in terms of future use. The use of these lands will be determined by the Selectmen and, to the extent that a Town appropriation would be required to develop them, by the Town Meeting. If the Town were to designate the lands for "conservation" purposes, the lands could not be removed from conservation use except by a vote of the state legislature pursuant to Article 97 of the Massachusetts Constitution.

11.2.1 Criteria for Open Space Protection

Priorities for open space protection should focus on Shrewsbury's most unique and irreplaceable resources, as well those areas that are not already protected by state and local environmental laws. Furthermore, these lands should be accessible and should offer a variety of activities to all residents. The highest-priority areas for open space protection should ideally include areas that:

- Provide access to Lake Quinsigamond and the Town's ponds and other water bodies (e.g. public beaches, pond-side parks)
- Extend or connect existing open space patches or corridors
- Contain significant wildlife habitat or vernal pools
- Conserve the Town's natural resources, such as water resources
- Preserve the pastoral character of the Town's remaining rural sections

11.2.2 Areas for Open Space Protection

Through the open public forums and steering committee meetings, residents have identified a number of parcels as candidates for protection for either open space preservation or for recreational or cultural development. These candidate parcels have included:

- Aquifer recharge area around Clinton Street
- Tatasit Beach (South Quinsigamond Ave.)
- Ward Hill
- 21 Walnut Street (horse farm)
- Friars property on Brook Street
- Parcel south of Route 9/east of Route 140
- Harlow Farm (Gulf Street)
- Home Farm

Of these parcels, several are designated for Conservation/Recreation in the Land Use Guide Plan based on the above criteria for protection. However, the Land Use Guide Plan is not intended to limit the number of parcels or the areas of land that the Town protects for open space.

Overall, the Land Use Guide Plan designates about 11.4% of the Town (about 1,592 acres) as Conservation/Recreation land. This does not include open space within cluster subdivisions, which currently amounts to almost 200 acres and could grow significantly in the future as more cluster subdivisions are developed.

11.3. Recommended Land Protection Strategies

Several types of land protection are possible for open space lands that the Town wishes to preserve. The best protection involves a deed restriction, conservation easement, or ownership by a conservation group (e.g., the Shrewsbury Conservation Commission or a nonprofit land trust)—any of which would amount to permanent protection. Land may also be zoned for open space, which provides a lesser amount of protection because the Town could always decide to re-zone the land to allow development (unless the land is also restricted by a form of permanent protection). Lesser forms of protection include public ownership (the state or Town could decide to develop its land, or sell it to a private party who could develop it) and enrollment in one of the Chapter 61 programs.

Of the several techniques for open space protection discussed below, the most economically desirable ones are those that do not require funding from the Town. The most politically feasible are those that would not reduce the density or range of uses allowed to be developed on privately owned land. The most promising options are those that do not rely entirely on landowners' philanthropic tendencies or desire for tax incentives. The best strategy for the Town as a whole will involve some combination of these mechanisms.

11.3.1 Zoning

To provide an additional level of protection for designated open space, wetlands, and other environmentally sensitive areas, the Town could rezone these areas to a Conservation/Recreation district. This tool should mainly be used to indicate on the zoning map the areas where Shrewsbury wishes to retain open space in perpetuity. It is not possible to zone privately-owned land that would otherwise be developable as Conservation/Recreation since this designation would deprive the landowner of virtually all value on his or her land and amount to a taking.

11.3.2 Public Acquisition or Protection

Public land acquisition is the most effective mechanism for preserving specific parcels. The Town can target the lands that it wishes to protect through a townwide land priority analysis and then pursue outright purchase or the purchase of a conservation restriction with individual landowners. This is the process that was used for the recent land purchases resulting from the \$5 million Proposition 2½ override.

Allocating Town dollars for open space protection is often financially and politically difficult. However, by purchasing vacant parcels that are otherwise available for residential development, the Town ensures that those parcels will not be developed for residential uses. In many communities, the public purchase of open space is actually more cost-effective than allowing land to be developed with residential uses (which costs the community money to provide additional public services). Shrewsbury has also conducted a fiscal impact study to determine whether this is the case in Shrewsbury, as well. This fiscal impact study has been included in the Master Plan as Appendix E.

Since the state legislature passed the Community Preservation Act during the summer of 2000 (Chapter 267 of the Acts of 2000), the Town may now establish a property tax surcharge of up to 3% to help fund open space protection and other activities. The law requires that 10% of the money raised must be used for open space protection, 10% for historic preservation, and 10% for affordable housing. The remaining 70% may be used for any of these three purposes. Massachusetts communities who adopt this measure will also receive state matching funds. Shrewsbury should seriously consider taking advantage of this recent legislation to provide a steady source of income for open space preservation and other important activities.

In addition to Town money, state and federal dollars are available for purchasing open space. Having completed an Open Space and Recreation Plan within the last five years (in 1997), the Town is eligible for several open space-related grants administered by the Division of Conservation Services. Other grants for land protection are also available, and are described in Section 18. The Town should pursue these funding sources to assist in the preservation of open space land.

If the Town wishes to pursue the use of public dollars for open space protection, it should reassemble the Shrewsbury Open Space Committee to lead the effort of creating a list of priority open space parcels and then acquiring or protecting these parcels. If desirable parcels are not

available at present, the Town should establish a standing “conservation fund” that can be tapped at short notice when desirable open space lands are put on the market. This fund could be used to purchase land as well as development rights, conservation restrictions, or options. Bonding is an appropriate way to fund open space protection, since this funding mechanism distributes the cost of this long-term amenity to both present and future taxpayers. Bonding could be used in conjunction with the Community Preservation Act to raise a large sum of money right away which would be re-paid in future years using projected revenues from the Community Preservation Act.

11.3.3 Private Involvement

In addition to pursuing grants and local funding sources, the Town should work with willing partners to protect open space. The Sudbury Valley Trustees, a regional land trust, recently purchased conservation easements for two parcels in the South East quadrant of Town. However, with some initiative on the part of the Town, nonprofit land trusts and conservation organizations can play a larger role in Shrewsbury. One option is to establish a Shrewsbury Land Trust that would accept donations of land and development rights, as well as raise money locally for open space protection efforts.

Another option is to partner with regional organizations on specific projects. Land conservation organizations regularly collaborate with landowners, municipal officials, and local volunteers to protect key parcels of open space. Such efforts might combine several funding sources to purchase the land or its development rights. In time-critical situations, a nonprofit will sometimes “front” the money to buy a piece of land until the town is able to appropriate enough money to reimburse the nonprofit.

One option that might be particularly attractive in Shrewsbury is “limited development” projects, where a land trust purchases a parcel of land, permits and sells one or more development lots to help offset the cost of the purchase, and protects the rest of the land as open space. Limited development projects typically require several willing partners including the land trust, landowner, developer, and Town. Limited development projects have been implemented successfully in both residentially- and commercially-zoned areas.

11.3.4 As Part of New Development

While the Town’s purchase of land and development rights has been an essential component of protecting open space in the Town, this step alone will be insufficient to protect a large portion of the remaining developable land. For example, while the recent \$5 million bond issue resulted in the purchase of almost 300 acres, more than 3,500 acres of unprotected, developable land remain in the Town.

The Town should therefore modify its cluster zoning bylaw so that it becomes a primary mechanism for protecting open space. Given the amount of vacant land remaining in the Rural Residential areas (where adoption of such a bylaw would be the most effective) it might be possible to preserve 500 acres of land through the use of a mandatory cluster zoning provision in this area. Assuming that the Town adopts a competent cluster zoning bylaw, the open space created in this way will carry the same level of protection as land owned by the Conservation Commission or a land trust. See Section 16.3.3 for additional discussion of appropriate modifications to the cluster zoning bylaw.

The Town’s current Rules and Regulations Governing the Subdivision of Land require that 8% of a development’s gross land area be set aside as park land in conventional subdivisions. The Town

should make full use of this provision by requiring that the open space be useable land that helps to form connectivity between adjacent developments and open space areas; that creates natural greenways and long-distance trails; that buffer sensitive features such as intermittent streams; that maintains natural vegetated buffers; or that provides land for neighborhood parks, small nature areas, or tot lots.

11.3.5 Process for Open Space Protection

An effective open space protection program requires that the Town know about potential open space parcels before they are offered for sale on the open market. Currently, Shrewsbury's staff maintains an open space database and monitors several large, privately-held parcels that the Town might be interested in acquiring. These efforts are important and should be continued. In addition, the Town may want to consider establishing a permanent Open Space Committee, which would consist of representatives from Town Boards as well as interested citizens. In addition to pursuing opportunities open space protection, this committee could be charged with advising the Town on the use and management of existing open space lands.

11.4. Active Recreation

11.4.1 Overview

In recent years, the Town's growing population has increased the demand for additional play fields, swimming facilities, and indoor recreational space. These increasing demands are largely generated by population growth. However, they are also generated by more privately-sponsored sports programs initiated by various town sports associations and leagues as well as by more active school intramural and interscholastic sports programs that increasingly require a larger share of scheduled time at the school system's recreational facilities. Although the greatest demand for recreational facilities is generated by children and youth programs, there is also demand for recreational and exercise facilities for adults and seniors.

During the master planning process, many Shrewsbury residents stated that the Town should acquire additional land for active recreation or should develop those lands that it already owns. Citizens at the first public forum specifically identified the need for additional recreational lands south of Route 9—an area of Town they believed is now underserved. Summer-based recreational opportunities were identified to be in short supply, particularly water-based and swimming opportunities.

Fortunately, the Town has anticipated many of these demands and in recent years has had the foresight to acquire additional lands that can be developed for active, as well as passive, recreational purposes. These lands include the South Park Recreation Area on Lake Street (former Scandinavian Athletic Club site) and additional lakefront land adjacent to the Donahue Rowing Center. In addition, the undeveloped Masonic property on Route 140 north of the town center may offer opportunities for additional recreational venues, and the construction of the new High School in the northwest corner of Town will provide new playfields. The private development of new soccer fields by the Youth Soccer Association on land leased at the Glavin Center will further expand Shrewsbury's active recreational opportunities; and a Phase II expansion project for the Maple Avenue play fields is currently being planned. Although many of these anticipated improvement projects are not yet funded by the Town, at least the land has been acquired to allow them to happen when funding becomes available, and studies are underway to identify the best use of these lands.

If the majority of these projects are funded and achieved, the Town is likely to have sufficient *outdoor* recreation facilities to meet current pent-up demand and to accommodate future growth over the next ten to fifteen years. Resident desires for *indoor* community recreational and athletic facilities have not yet been addressed, however. (See Public Facilities chapter for additional discussion on indoor facilities within schools and other indoor recreational facilities.) Beyond the ten year time-frame additional outdoor recreational facilities may be required if the town continues to grow at its current rapid pace. By this time, portions of the landfill site will likely be available for recreational development.

11.4.2 Specific Sites and Projects for Active Recreation

This subsection discusses the Town's current plans and potential options for active recreation lands.

- **South Park Recreation Area/Lake Street (former Scandinavian Athletic Club site):** The Town recently acquired this 60-acre site for the purpose of developing new recreational venues. A master plan for its reuse is now being prepared. Recreational infrastructure proposed for this site include a new and much-needed swimming pool, play fields, picnic areas, and a parking lot to support these uses. It is anticipated that this project will be funded in FY 2003. There has also been discussion about acquiring some of the adjacent SAC parcel in order to construct an indoor Recreation Center. (See discussion below of Indoor Recreation Center.)
- **Maple Avenue Play Fields Expansion/Phase II:** One-half of this 19-acre Maple Avenue property is now developed for a variety of play fields and sports courts. A Phase II expansion program for new soccer play fields, a ball diamond, a supporting parking lot, a walking trail around the perimeter of the property, and a spur of that walking trail to the Senior Center are currently being planned.
- **Senior Center Land/Senior Recreational Exercise Stations:** Outdoor exercise stations for seniors are currently being considered, both immediately adjacent to the Senior Center and along the walking trail spur connecting to the Maple Avenue play fields.
- **Dean Park Renovations and Improvements:** The Town has made a variety of improvements and renovations to Dean Park in recent years, including a new 80-car parking lot and the reconstruction of the tennis courts. Further improvements include a renovation of the play fields and basketball courts, a new irrigation system, a renovation of the picnic pavilions, and a repair of the fitness trail. Many of these improvements are nearly done and other additional renovations are funded in FY 2001. Still other improvements are scheduled in phases over the next few years.

The Town is maintaining an intentional balance between passive open space use and active recreational facilities at Dean Park. As a result, the emphasis here has been on renovation and improvement of existing facilities rather than on building new play fields.

- **Donahue Rowing Center Improvements:** The Town recently acquired lakefront land adjacent to the Rowing Center primarily for open space conservation purposes. However, some of this recently acquired land may be used for a future expansion of the Rowing Center facilities.

- **Reuse Options for the Former Masonic Property:** The former Masonic property on Boylston Street is a mainly wooded parcel that the Town acquired some time ago. The topography of the site is hilly and ledge is found close to the surface. The site provides habitat for deer and other native species. A small portion of the site at the top of the hill is now used for Town water tanks.

Several Town departments have examined the Masonic Property for development or expansion of public facilities. The Parks and Recreation Department has explored options with the assistance of an outside consultant and foresees using the 26-acre southern portion of the property for cemetery expansion use with remaining 50 or so acres reserved for primarily passive recreational uses to preserve the wooded hillside terrain. Such uses would include walking and nature trails and picnic areas. However, it may also include such features as an outdoor amphitheater. Neither the cemetery expansion nor the recreational use of this property has yet been funded.

Other Town departments have considered this property for their own facility expansion purposes. Suggested uses have included a school, a new and enlarged public library, and an indoor recreation center. However, the development of this site, when examined previously, has proven to be a costly option because of the site's sloped and hilly terrain and underlying ledge.

At the master plan forums, some citizens expressed a desire to see the Masonic Property preserved in an undeveloped state, although a few suggested using it for cemetery expansion or other public facilities. Clearly, a master plan and feasibility study for this site, which maintains the priority of this land for recreational or cultural use, should be prepared to determine the future of this Town asset.

- **Glavin Center Soccer Fields:** Shrewsbury's Youth Soccer Association plans to construct five to seven new soccer fields on underutilized land it has leased from the Glavin Center. These soccer fields are expected to be constructed by 2001.
- **New High School Play Fields and Courts:** The new High School that is now under construction will include new play fields (including one that will be lighted for night use), tennis courts and basketball courts. These new fields will primarily be used by the School Department for interscholastic and intramural sports programs. However, if schedule openings are available, the Parks and Recreation Department and various athletic sports leagues or associations may also share these fields. Once the new High School play fields are completed, the current play fields shared between the existing High School and Middle School will become more readily available for Middle School use. As at the new High School play fields, if the scheduling of interscholastic and intramural sports events allow, these fields will also be shared by the Parks and Recreation Department's events and private athletic leagues.
- **Aquatic Facility/Natural Swimming Site Venues:** At present, the town has no public swimming facility. Over the years, the Parks and Recreation Department has examined various pond and lake beach sites for use as natural swimming areas, and an assessment of potential sites for this use was prepared for the Park & Cemetery Commission in 1998. For a variety of reasons, including poor water quality, this assessment concluded that none of the sites examined were viable. As a result of all these analyses, the need for a newly constructed swimming pool was identified. Such a facility is currently being

planned at the South Park Recreation Area on Lake Street to meet the demand for this much-desired activity.

While the new aquatic facility will meet much of the need for swimming facilities, the Town should not give up on finding a suitable beach for Town residents. (See Section 10.1.2 on water quality.) Numerous residents supported the acquisition of Tatasit Beach as a Town beach; parking for this site could be addressed in a variety of ways. Other long-term possibilities include re-opening Jordan Pond for swimming if water quality conditions improve.

- **New Indoor Community Recreation Center.** There has been much discussion about the need for a new indoor community recreation center for children, youth, adults and seniors. At present there is a serious shortage of indoor play, recreation and learning spaces for a variety of activities. These activities include gymnasium space for organized Recreation Department sports programs, exercise and fitness programs, meeting spaces for scout troops, meeting space for arts and crafts programs, and daytime meeting and recreation space for seniors.

Public recreation programs have traditionally shared school facilities. However, there has been growing demand for school-sponsored activities beyond the regular school day, which have usurped previously available space at the schools. Therefore, there is growing demand for indoor community play space dedicated to recreational purposes on weekdays, evenings and weekends. To address these space shortages several options that should be considered:

At the school-aged level, the schools themselves and their mission can be seen to include community center spaces that could be made available after school hours and on weekends, not only to enrolled students, but to the larger community as well. During the summer months for example, a summer playground program is operated by the Recreation Department at the Coolidge School and at the Middle Schools as well as at Dean Park. In addition, school gymnasiums have long been used by the Recreation Department for various programs. Today, however, school programs themselves have expanded to such an extent that the times available to the Recreation Department have greatly diminished. While the YMCA facility planned for construction on Route 20 near the Route 9 intersection will likely provide indoor recreational activities for some Shrewsbury residents, it will be a private facility funded through membership fees. In addition, the site is not centrally located or easily accessible to much of Shrewsbury.

Various sites have also been mentioned as potential locales to construct a community recreation center. These sites include the Scandinavian Athletic Club site, the former Masonic property, and on a portion of the remaining undeveloped land at the Maple Avenue property where the Municipal Offices, Police Station, and Senior Center are now located. Two other Town-owned developed sites offer possibilities to convert existing buildings into a new Recreation Center—the Fire Headquarters and the Public Library—if either of these two existing facilities needs to relocate elsewhere.

While the Town has established the need for a new indoor recreational facility, it has not resolved the issues of what this facility should provide, how big it should be, or where it should be located. These issues should be resolved so that an appropriate site can be selected for such a facility.

- **Landfill Site:** The Town's landfill site is still active and is currently permitted to accept ash residue from the Wheelabrator waste-to-energy plant until the year 2007. The Health Department, however, intends to request an extension of the existing permit beyond 2007. Many Shrewsbury residents view the landfill site as an opportunity in the future to construct new recreational facilities—such as a golf course, play fields, or a park—when the landfill is eventually closed. Development of the landfill for recreational uses will provide new facilities in the underserved southeastern quadrant of the Town.

11.4.3 Coordination and Scheduling

Currently, the School Department, Recreation Department, and privately-sponsored organizations, sport leagues, recreational and extracurricular programs all utilize various Town recreational facilities. However, there is currently no coordinated system for scheduling or prioritizing the use of recreational facilities. It is recommended that a coordinated—if not unified—system of scheduling be established within the Town. Given the present shortage of recreational facilities, coordinated scheduling will be especially critical in the short-term, until the planned new recreational facilities are built.

11.5. Lakefront Overlay District

At the master plan forums, many residents stated that the Town should acquire land along Lake Quinsigamond for public beaches and recreation areas. While this would be one way of gaining public access to the lake area, the Town could also work with the private sector to encourage public access on private lands. Through the creation of an overlay district, the Town can encourage private owners to develop uses that will make the lakefront accessible to everyone.

For example, non-residential areas in and near White City could be redeveloped for entertainment or recreational uses that take advantage of the lakefront with outdoor restaurant seating, marinas, boardwalks or other amenities. Mixed-use developments could offer a variety of activities, such as shopping, dining, or residential units. Within non-residential areas adjacent to the lake, a Lakefront Overlay District could require the provision of specific public amenities at the time that the land is redeveloped, or it could offer incentives such as tax credits or development assistance to property owners to encourage such amenities. Within residentially-zoned areas, public access might be encouraged through a system of incentives linked to density or to the issuance of special permits (for example, for multi-family housing).

12. Economic Development

12.1. Introduction

In recent years, the Town's economic base has grown substantially so that the current jobs-to-residents ratio is now about 1:1. This is due largely to regional economic conditions, the expansion of the Boston metropolitan area, and the growth of the I-495 corridor as a high tech employment center.

Town residents at the master plan forums expressed varying opinions on the issue of economic development. One point that many people seemed to agree on was the fact that with the rising costs of infrastructure within the Town, quality commercial and industrial development would be necessary to continue to maintain the relatively low property taxes for residents. In developing the recommendations for the Town's Land Use Guide Plan, several key points made during the public participation processes were taken into consideration. These include:

- **Maintain Residential Character:** While Shrewsbury has several commercial and industrial districts, most residents seem to regard the Town first and foremost as a residential community. As such, any economic development activities should be compatible with existing neighborhoods and not result in excessive impacts to the Town.
- **Attract Quality Industry:** Residents almost unanimously stated that the Town should focus on attracting high-quality commercial and industrial development as opposed to some of the uses, which have located in Shrewsbury over the years, and are regarded as low-quality. Quality development was defined by many to include clean, light industry as well as office parks and research facilities.
- **Increase Tax Revenue:** As long as commercial development does not necessitate substantial capital expenditures, commercial activities typically generate significantly more money in tax revenues than they cost in terms of their demand for municipal services. Most residents recognize that commercial and industrial development provides net tax revenue that helps to pay for public services and reduces the residential tax burden.
- **Enhance Town's Aesthetic Appeal:** Many felt that the Town should do more to enforce codes that regulate aesthetic impacts of commercial and industrial development. Route 9 and Route 20 were identified as two areas that could benefit substantially from the introduction of aesthetic guidelines such as architectural design review. Adequate buffers in the form of trees and vegetative cover should exist between residential and commercial areas. As it is difficult to make existing developments make significant changes, many changes will be implemented over time as lots are redeveloped.

12.2. Zoning for Appropriate Economic Development

12.2.1 Location and Amount of Business-Zoned Land

The most important step that a community can take to promote desired economic development is to ensure an appropriate quantity and location of commercially- and industrially-zoned sites. A common mistake is to "overzone" for commercial and industrial development—to provide far more land than the market can absorb. Overzoning tends to decrease the value of any particular site, and thus attracts low-quality commercial and industrial development. By contrast, allowing commercial and industrial

development only in areas that are appropriate will encourage higher value uses to occupy those sites and will protect the interests of existing businesses.

Based on the buildout study and an examination of existing vacant commercially- and industrially-zoned sites in Shrewsbury, there is no need to zone additional land for commercial or industrial uses. The Town currently has ample suitable sites for accommodating such development. It is more efficient to target development toward the Town’s existing business-zoned land and to encourage redevelopment of these lands, rather than rezone residential areas to business uses.

However, within the business-zoned areas, it is recommended that the Town change the zoning designation of several parcels to target certain sections of the Town for office-type developments. Specifically, the Land Use Guide Plan recommends the following changes in zoning for business uses:

**Table 12-1
Recommended Business Zoning**

Land Use Category*	Developable Acreage Under Current Zoning	Developable Acreage Under Master Plan
Limited Industrial	581	117
Office Research	78	452
Limited Office Research	36	--
Commercial Business	273	104
Shopping Center	--	40
Limited Business	1	6
Total	969	717

* Note: Categories under the master plan may not be identical to proposed categories under the current zoning; however, analogous categories are shown side-by-side for the purpose of comparison.

The modifications proposed in the Land Use Guide Plan result in a range of locations for prospective office/research developers and tenants to choose from. In general, a larger number of modest-sized sites, distributed widely throughout a community, is usually better than a few very large sites because they offer more choice to employers and better accessibility to employees.

12.2.2 Attracting Specific Industries

While the Land Use Guide Plan and the Implementation chapter provide recommendations for zoning the Town’s business areas to attract the desired mix of uses, the Town may wish to conduct a more detailed study and zoning revisions if it wishes to attract specific industries. One important element to consider is that several industries already have a presence both within the Town and within the region. Many industries tend to gravitate toward areas where their industry already has a presence. This is called a *business cluster* or *industrial cluster*.

Some Massachusetts communities have pursued such clusters by providing zoning, infrastructure and supporting services that are required by specific industries. For example, specific “biotech” zoning areas have been established that allow companies to operate higher-level biohazard laboratories while providing the infrastructure necessary to support these laboratories. If the Town wishes to attract one or more specific industries, it should first identify what these industries are, then identify their specific needs. A regional marketing study could be used for this purpose. Next, the Town should implement specific zoning changes to make its business districts more suitable to the needs of the target industry. Finally, the Town may want to market its vacant sites specifically to this industry (see Section 12.4, below).

Another opportunity to attract specific types of businesses would be to designate part or all of Shrewsbury as an Economic Target Area (ETA). This state designation, allowed by Chapter 23A of the Massachusetts General Laws, provides several benefits including state and local tax incentives. While there is some question as to whether Shrewsbury would qualify for ETA designation on its own, the Town may be able to join with neighboring communities such as Boylston and West Boylston to form a regional ETA.

12.2.3 Making Regulations More Flexible

To encourage developers to build in Shrewsbury's business zones, the Town should streamline its zoning requirements to eliminate unnecessary obstacles to appropriate economic development. This does not mean that the Town should allow environmentally destructive or high-impact developments, but rather that it should allow a certain amount of flexibility so that developers can propose projects that benefit both themselves and the Town.

The Town should consider establishing *Performance Zoning* standards that regulate development according to its impacts without holding it to strict dimensional requirements. This concept could be used to determine the allowed uses within a given district. For example, in the Local Shopping areas, a wide range of business uses should be allowed, but they should be required to adhere to design and aesthetic standards and should not exceed a certain size or traffic generation threshold. Performance Zoning would regulate uses by the impacts they would have on the Town's environment, including impacts on air quality, noise quality, aesthetics, or trip generation.

The Town should also consider providing greater flexibility in its parking requirements. Requiring excess parking not only costs the developer money, it also contributes to water pollution and visual blight, and provides a perverse incentive for people to drive rather than finding alternative means of transportation. Within major developments (e.g., office parks and shopping centers), the Town should not set a strict formula for parking requirements, but should require the developer to justify the proposed number of parking spaces based on the projected number of employees or shoppers, and on the project's ability to incorporate effective transportation demand management strategies.

Finally, the Town should provide greater flexibility in its dimensional requirements, particularly in the Local Shopping areas. For example, current zoning in the Limited Business sections of Route 9 require a 50' front setback. Since many of the business parcels on the south side of Route 9 are only 100' deep, this regulation essentially prohibits redevelopment of these parcels with any economically feasible use. The setback requirement also virtually requires parking to be located in front of the buildings, thus perpetuating the strip commercial appearance of this area.

12.2.4 Local Shopping and Shopping Center Districts

Mixed land use can play a role in offsetting cross-town traffic, lessening residential trip generation, and increasing convenience for local residents and employees. Many residents responded favorably to the idea of having neighborhood stores which residents could access by walking, biking, or driving a short distance. This internalization of trips allows those running local errands to remain on local connectors, not adding congestion to the Town's regional road network. Locating such stores in places where many people already drive (such as work or school) is another way to decrease single-purpose trips by increasing the percentage of "pass-by" trips that access a particular shopping area.

While the merits of neighborhood shopping area are easily apparent, the process of selecting sites for such uses is not. What is regarded as a welcome convenience to one resident (the resident that lives a few doors down) is perceived as a nuisance by another (the one that lives right next door). In addition, much of the residential development that has occurred in the Town in the past 10 to 15 years is not organized in dense pockets that would support such shops.

The Town should rezone several of its smaller commercial districts for Local Shopping uses. These existing shopping districts are within densely populated residential areas (along Maple and Main in the town center; along the western portion of Route 9; and along Route 20 in Edgemere) and currently support a variety of commercial and service uses. Zoning regulations in this district should encourage redevelopment with appropriate uses. It is recommended that the parcel located at the intersection of N. Quinsigamond Ave. and W. Main Street be rezoned for Shopping Center use. This area has a considerable residential population but lacks shopping opportunities. In addition, a shopping center at this site would support the needs of the high school staff and student populations, once that building is completed.

12.2.5 Mixed-Use Development

It has been estimated that on-site services and shopping at office parks can eliminate 20% percent of the vehicle miles traveled by office workers.¹ Mixing uses also encourages commuters to carpool, vanpool, or use transit (if available) since they have less need for a car to run errands. Allowing first floor space for retail and personal service uses within senior residential housing developments can serve a similar function. The Town could even provide density bonuses to encourage these types of mixed-use development.

12.2.6 Design Guidelines

The Town may want to adopt design guidelines to address issues concerning aesthetics and vehicle circulation. Buffer guidelines could identify the extent of green space along commercial developments and would offer developers direction in how to best orient their buildings. Commercial strips can adopt higher standards for parking and curb cut layouts, internal circulation and the inclusion of service roads, sign controls, and landscaping to upgrade the appearance and safety of these areas. These guidelines could encourage developers to link adjacent projects via a shared access road and limit the number and width of curb cuts to both improve pedestrian accessibility and safety and lessen traffic delays.

12.3. Infrastructure

The availability of public infrastructure such as roads, public water, and sewer connections greatly affects the siting of commercial developments. While various on-site wastewater treatment options are available, the current lack of public sewer infrastructure in the Route 20 corridor makes these sites less desirable than sewered sites elsewhere in the region for uses that generate significant wastewater (including office buildings and wet laboratories). In order to attract high-value uses to the Office/Research areas, the Town should target future infrastructure development to these areas. Required infrastructure services include public water, public sewer, and high-speed data and communications services. Consistent with previous Town policies, developers could probably pay for many of the required water and sewer extensions and upgrades. See Section 14.7 for additional discussion of infrastructure planning.

12.4. Organizational Capacity

Currently the staff in the Engineering Department responds to economic development inquiries from potential developers and tenants seeking information about Shrewsbury. In addition, the Town has an Industrial Development Commission that works with existing and potential future businesses within the community and coordinates activities with the Town staff. In order to increase its ability to attract desired businesses to Shrewsbury, the Town should consider increasing the economic development capacity within its own staff. A part-time or full-time economic development specialist could serve several roles:

¹ D. Davidson, "The Role of Site Amenities as Transportation Demand Management Measures," 1995.

- Follow trends and establish contacts within the target industries that Shrewsbury seeks to attract so that the Town can position itself to attract these industries to the Town.
- Conduct targeted marketing of Shrewsbury as a whole based on its attributes that might make it desirable to businesses: e.g., low tax rates, good infrastructure and services, accessibility to the Worcester Airport and the Commuter Rail.
- Conduct targeted marketing of key land parcels within the Town for development or redevelopment by helping landowners prepare informational packages about their land.
- Work with the economic planning staff at the Central Massachusetts Regional Planning Commission (CMRPC) to learn about regional opportunities and to channel potential developers and businesses toward Shrewsbury.
- Serve as the Town's contact with state and neighboring local economic development organizations and initiatives.
- Work with the Shrewsbury Business Association and the Industrial Development Commission on economic development initiatives.
- Provide policy recommendations to the Board of Selectmen.
- Pursue outside funding support for local economic development initiatives.

13. Housing

13.1. Introduction

Residential housing opportunities in Shrewsbury have traditionally been comprised of a variety of options. As an early suburb to Worcester, many multi-family units were developed in the Town during the 1960s and 1970s. Within the past 15 years, however, the development of detached single-family homes has increased substantially while little new multi-family housing has been built. In recent years, most of the newly-constructed single-family homes cost substantially more than many middle income households can afford, and almost all cost more than the Town's median house price. Rising housing costs threaten the Town's identity as an affordable community. The Town's lack of choices in housing has resulted in several potential problems that are likely to worsen if they are not addressed. In particular:

- **Need for Housing for All Demographic Groups Within the Town:** In the past, housing development in Shrewsbury has provided ample opportunities for all its demographic groups, including senior citizens, single persons, and married couples without children. New housing development, however, has been targeted mainly toward upper-income families.
- **Escalation of Housing Costs:** Home prices in Shrewsbury have escalated in recent years as a result of a very strong regional real estate market as well as Shrewsbury's particularly desirable location within commuting distance of major metropolitan areas. As the homes being constructed within the Town are considerably larger than the homes that have traditionally been built there, the sale prices for new homes are significantly higher than the costs of existing homes. The Town's existing housing stock has also appreciated significantly in value, making it difficult for many to find an affordable home in the Town.
- **Comprehensive Permits:** Comprehensive Permits allow developers to circumvent local land use regulations to build housing developments with an affordable housing component, and strip the Town of much of its ability to regulate the density and design of new development. (See below for further discussion.) A municipality is vulnerable to such development if less than 10 percent of their housing stock is considered affordable as determined by state criteria. Shrewsbury has already experienced the construction of a Comprehensive Permit project and the resultant development is largely regarded as being not well conceived.
- **State Policies:** Recent changes in state policy dictated by Executive Order 418 (January 2000) require Massachusetts municipalities to demonstrate that they have established an effective program for creating affordable housing in order for the municipality to be eligible for certain state grant programs.

This section of the Master Plan recommends several strategies for addressing the above needs while also retaining Shrewsbury's character.

13.2. Residential Zoning

Residents at the master plan forums expressed a desire to see developers build a more balanced housing mix in the Town, which includes housing for senior citizens and childless individuals or couples. In addition, these types of housing can provide net tax revenue to the Town because they typically contain few schoolchildren.

In order to accomplish these goals, the Land Use Guide Plan designates an additional 117 acres of land (70 acres of developable land) for multi-family housing. All of this additional land is adjacent to existing multi-family zones, so it will not affect neighborhoods of single-family houses. In the past, the Town has also designated additional sites for multi-family housing as a result of housing developers requesting a zoning change to build such housing. A recent example of this is the parcel of land just south of Route 20 and west of Route 140 which was recently re-zoned to MF-2. This policy of considering zoning changes for multi-family housing on a case-by-case basis has appeared to work well in the past, and could remain unchanged. On the other hand, if Shrewsbury does not designate sufficient land for multi-family housing, it may be more susceptible to successful Comprehensive Permit applications.

Whether multi-family housing is allowed by right, by special permit, and/or only through re-zoning, the Town should adopt specific criteria for the design and approval of multi-family housing that results in development that is acceptable to the community. The review process for multi-family housing should allow considerable flexibility in the layout of a site, resulting in a congregation of dwelling units on one portion of the site and common open space elsewhere on the site. The regulations should allow multi-family housing developments to include accessory ground level retail and personal service uses in order to add a mixed-use component to new residential developments.

Attached “in-law” apartments as well as two-family homes can be an important type of housing for senior citizens or young persons since they can allow multiple generations of a family to live on a single property, while still affording some level of privacy for each living group. Two-family dwellings can add to the Town’s stock of rental units while simultaneously offering an opportunity for homeownership that might not be possible without the income from a second rental unit. Well-designed duplexes could also provide affordable housing. The Town should provide expanded opportunities for the development of new two-family homes and in-law apartments.

13.3. Affordable Housing

13.3.1 Affordable Housing Programs and Regulations

According to the State Department of Housing and Community Development, 5.59% of Shrewsbury’s housing stock is currently affordable. Recognizing the severe shortage of affordable housing within Massachusetts, the Commonwealth has established several regulations and programs aimed at increasing the stock of affordable housing. These state programs (or federal programs administered by the state) provide funding to Commonwealth communities for the purpose of creating affordable housing. These include:

Community Development Block Grants (CDBG): The MA Department of Housing and Community Development (DHCD) receives these funds each year from the federal government. The CDBG grants are intended for cities and towns to conduct community and economic development projects to help low- and moderate-income residents, remove slums and blight, and/or fill a community need. The Housing Development Support Program (HDSP), a component of the CDGB, provides partial financing support to small housing development projects. Typical HDSP projects include housing rehabilitation; limited new construction of residential and mixed use projects; reclamation of abandoned/foreclosed properties; elderly, transitional, and special needs housing; development of mixed-income housing for first-time home-buyers; and conversion of obsolete and under-utilized structures. Municipalities eligible for these programs must have populations under 50,000 and must not already receive CDBG funds from the Department of Housing and Urban Development.

Massachusetts General Law 40b: Chapter 40b of the General Laws attempts to promote the creation of affordable housing by allowing prospective developers of affordable housing to circumvent so-called

“exclusionary zoning.” Under this provision, a prospective developer can submit a single “Comprehensive Permit” application to the Zoning Board of Appeals, which is empowered to grant or deny the application without review from the boards and commissions who would normally review a development proposal. Developments proposed under a Comprehensive Permit are not required to adhere to local zoning bylaws or design standards (except to maintain basic public health and safety). The Town has limited power to deny or condition such applications, unless it has already achieved the goal 10% affordable housing in the town specified in Chapter 40b. For example, courts have ruled that school overcrowding, traffic, and loss of open space are insufficient grounds for denying Comprehensive Permit applications. The definition of affordable housing in Chapter 40b includes only housing that is subsidized by federal or state programs to promote low or moderate-income housing.

Case law related to the application of Chapter 40b suggests that a municipality can “protect itself” against Comprehensive Permits by developing an effective pro-active strategy to create affordable housing, even if the municipality has not met the 10% goal at the time that the Comprehensive Permit application is filed. Such a strategy would probably need to include areas of the town that are zoned to allow multi-family housing, as well as other strategies such as incentives and the donation of suitable sites for building affordable housing.

Local Initiative Program: The Local Initiative Program (LIP) is designed to stimulate the production of affordable home ownership opportunities by fostering cooperation between municipalities and housing developers. The LIP does not receive any state appropriation. This program allows DHCD to provide technical assistance in evaluating sites, selecting developers, reviewing development proposals, determining project feasibility and monitoring compliance with regulations to subsidies. This technical assistance qualifies as a “subsidy” and gives local housing initiatives formal standing within the comprehensive permit process and housing units built under LIP qualify towards a community’s Ch. 40b subsidized housing. While basic aspects of the program – incomes of persons served, minimum quality of housing units provided, fair marketing, and level of profit – are subject to state review, local officials make all decisions related to financing, design, and construction.

Housing Innovations Fund I and II: The Housing Innovation Funds were created to provide housing for special needs populations and tenant owners. Projects that have been funded by HIF include special needs housing for persons with AIDS/HIV, battered women, and clients of the Department of Mental Health and Department of Mental Retardation. DHCD periodically makes HIF funding available to nonprofit developers through a Notice of Funding Availability. Eligible projects may receive a deferred payment loan from HIF. Projects must reserve at least 50 percent of the housing units for occupancy by low-income persons or families. The HIF loan must not exceed 30 percent of the total development cost of the project.

Low Income Housing Tax Credit Program: The Low Income Housing Tax Credit Program (LIHTC) provides a way for developers to raise capital for the construction or acquisition and substantial rehabilitation of housing for low-income persons. Under the federal income tax code, investors in low-income rental housing are permitted to take a credit against taxes owed the federal government. In Massachusetts, DHCD is the allocating agency for tax credits. Both for-profit and nonprofit developers can qualify for the credit, which can be claimed by the investors for 10 years. At least 20% of the units must be reserved for persons with incomes 50% or less than the area median income or at least 40% of the units must be made affordable for persons with incomes 60% or less than the area median income. In addition, the project must be retained as low-income housing for 30 years.

Housing Stabilization Fund Program: The Housing Stabilization Fund Program was created to support comprehensive neighborhood redevelopment efforts. Its three sub-programs include: Neighborhood Restoration Initiative, which provides funding to support affordable rental housing as well as affordable

homeownership; Rehabilitation Initiative, which sets funds aside for the acquisition, rehabilitation, and reuse of distressed, foreclosed, or abandoned properties as affordable housing; and the Soft Second Loan Program, which creates homeownership opportunities for first-time homebuyers by subsidizing mortgages, or providing down payment or closing cost assistance.

HOME Program: Through the HOME Program, a flexible housing block grant is distributed on an entitlement basis to states, larger cities, and consortia of smaller communities. Housing programs covered under HOME include (1) rental housing production and rehabilitation; (2) first-time homebuyer assistance; (3) rehabilitation assistance for homeowners; and (4) tenant-based rental assistance. HOME awards (typically made as loans to eligible recipients) are granted directly to developers.

Shrewsbury Housing Authority: The Town can also add to its affordable housing inventory by purchasing existing houses that fit within the affordable housing criteria as they come on the market. The Shrewsbury Housing Authority, which currently oversees 13 affordable 3-bedroom single-family units within the Town and is in the process of constructing four additional 2-bedroom units, could oversee the purchase and administration of these homes.

13.3.2 Affordable Housing as Part of Private Development Projects

Many Massachusetts communities have established policies to promote the creation of affordable housing as part of new single-family and multi-family housing developments. (Shrewsbury has had such a bylaw in place since 1989.) Two advantages of this system are that affordable housing is well-integrated into the community (it may in fact be visually indistinguishable from nearby market-rate housing), and that the local government is not required to be directly involved in the housing development process. Several possible approaches to encouraging private developers to build affordable housing are outlined below:

- **Incentive-Based Affordable Housing:** So far, Commonwealth communities looking to promote affordable housing have enacted incentive-based systems that require the provision of affordable housing in exchange for zoning relief, an increase in development density or intensity, or other concessions from the town or city. In some communities, such as Newton and Cambridge, the threshold for requiring zoning relief might be quite low, thus ensuring that almost all developments within certain districts are required to provide affordable housing. For example, an incentive based program could identify multi-family housing as a special permit use, then require a certain percentage of affordable units as a condition of granting that permit. Or, a density bonus could be granted in exchange for developing a certain number (or percentage) of affordable units. Incentive-based programs are well accepted by the courts, politically feasible and can also be used as a “sliding scale” to encourage the development of more than 10% affordable housing in new developments.

The Town currently offers an incentive bonus for affordable housing (Section VII-K of the Zoning Bylaw). If the Town hopes to obtain more affordable housing through this mechanism, it should consider modify this regulation to make it more attractive to developers. For example, the permitting process could be streamlined or the affordable housing provisions could be de-coupled from the cluster development provisions, which essentially make the review process twice as complicated.

- **Inclusionary Housing Bylaw:** Another option is establishing an Inclusionary Housing bylaw, which requires that, for all developments above a given size, a certain percentage of the housing units be established as affordable housing. For example, all new developments of at least 10 units could be required to make 10% of their units affordable in perpetuity. No municipality in Massachusetts has such a program, largely because of uncertainty concerning whether Inclusionary Housing is consistent with the state’s zoning enabling legislations (Chapter 40a). While Inclusionary Housing may be

effective at producing affordable housing (since it is mandatory) it is not necessarily accepted by the courts and might be subject to legal challenges or political obstacles.

14. Public Facilities and Services

14.1. Introduction

The Town of Shrewsbury has grown rapidly in recent years and is expected to continue to grow into the foreseeable future. To accommodate that growth and to continue providing a high level of municipal services, the Town has built new municipal facilities such as the Senior Center, has expanded some facilities such as its Police Station, Municipal Office Building, and Library, and has just embarked on a major school expansion program for High School and Middle School grade levels.

Though these recent accomplishments and the townspeople’s willingness to fund them are commendable, much more will need to be done in the future in order to remedy current shortcomings and meet demands from new growth. For example, new elementary schools will be required; new fire station(s) are needed to provide adequate fire protection services; the Library will need to expand to meet increased circulation demands; the Police Headquarters must expand to alleviate space shortages and operational safety issues; water treatment and sewerage capacities may need to be expanded; and new recreational venues are needed.¹

All these improvements will need to be funded. Therefore, extending the forecasting range of the Town’s capital budgeting process will also become more critical to keep anticipated costs in alignment with anticipated growth in local tax revenues, state grants, and the town’s bonding capacity.

Finally, the Town would be wise to continue its land acquisitions program both to provide for future recreational and municipal facilities needs, and to protect the Town against the threat of over-development and undesired growth. Land acquisitions can at first appear costly. However, over the long run, they are usually wise decisions and will be appreciated by Shrewsbury’s coming generations of citizens.

14.2. General Municipal Facilities and Services

- **Richard D. Carney Municipal Office Building:** The Municipal Office Building, renovated and expanded in 1997, is an excellent facility that generally meets Shrewsbury’s needs for municipal administrative office space into the foreseeable future. The Municipal Office Building also offers well-equipped meeting rooms to serve various Boards and Committees. Demand for meeting room spaces continuously increase, however. To accommodate increased demands for meeting spaces, other meeting rooms around town—at the Library, schools, or Senior Center—should be coordinated with the scheduling for meeting spaces at Town Hall. Only if such coordinated scheduling cannot resolve the shortage should an addition be considered in the future.

The Light and Cable Company’s administrative offices, housed at this facility, presently have sufficient space. However, the company continues to offer expanded services, such as Internet access, which require additional administrative space. If additional administrative space, when needed, cannot be accommodated at the Light & Cable Company’s other locations, then space reorganization within the Company’s wing of the building may be required.

The Municipal Office Building is generally accessible to those with mobility and other disabilities. However, certain features, such as counter heights, are not fully compliant with

¹ Active recreational facilities are discussed in Section 11: Open Space and Recreation.

federal and state accessibility laws, regulations and guidelines. Therefore, continuing modifications should be implemented to bring the building into full compliance with these statutory accessibility requirements.

- **Police Department Headquarters:** Police Department Headquarters on Maple Avenue, though renovated and expanded in 1996, is currently overcrowded and operating beyond its design capacity. While the renovations completed in 1996 did alleviate the situation at the time, it did not address all the limitations of the current facility. In addition, staff increases in the past four years have added to the pressure. Additional space is clearly required. Expansion is potentially limited, however, by wetlands that abut the building at its rear. Several options may be available to expand:
 - Option 1: Expand the current Headquarters facility on the site of the adjoining parking lot.
 - Option 2: Reconstruct Headquarters elsewhere on town property at the Maple Avenue municipal campus site.
 - Option 3: Join with the Fire Department to construct a shared Public Safety Building, either at the municipal campus site or elsewhere on other available Town-owned property.

The Town should allocate money to prepare a space needs feasibility study for the Police Department. This study should identify future staffing and program growth and the consequent amount of additional space needed, identify potential building site options, offer schematic design options, and estimate probable construction costs for each option. If such a study recommends constructing a new Headquarters facility at a site other than at the present site, a plan for the reuse of the existing Police Headquarters facility should be considered. One option may be to move the Light & Cable Company to the Police Headquarters site, thereby freeing space at the Municipal Office Building for expanded meeting rooms, storage and additional offices.

- **Police Department Boat House:** A replacement for the dilapidated Boat House on South Quinsigamond Avenue is scheduled for reconstruction in FY 2004 at its present site at a cost of \$175,000.²
- **Fire Department Facilities:** As described in Chapter 6, all three existing fire stations—Headquarters, Station 2/Harrington Avenue, and Station 3/Edgemere—are presently inadequate. Since 1974 there has been no change in the configuration of these buildings or the number of personnel in the Department. In fact, during the past quarter of a century, while Shrewsbury’s population has doubled, there has been an actual reduction in the pieces of fire fighting apparatus available to service the Town. Although the three existing stations have been maintained cosmetically to appear attractive, they all have serious space deficiencies, accessibility deficiencies, and systems deficiencies. In addition, the Edgemere Station is poorly located in the remote SW quadrant of Town to adequately serve the rapidly growing southeast quadrant. As the Town’s population, residential subdivisions, and traffic volumes continue to grow, well located and equipped fire station facilities will become increasingly important to provide proper emergency response times.

Several options are available to meet existing demands and provide for new growth in the future:

² Cited costs are in year 2001 dollars.

- **Option 1:** Construct a new Fire Headquarters at the Maple Street Municipal Campus (possibly in conjunction with a new Police Headquarters at a new consolidated Public Safety Building). Also construct a new Station 3 on town-owned land on at Memorial Drive/Route 140. The relocated Station 3 would better serve both the southwest and the rapidly growing southeast quadrants of town. Consolidate staff and equipment from the existing Headquarters and Station 2/Harrington Avenue at the new Fire Headquarters building on Maple Avenue. Relocate staff from the old Station 3 to the new Station 3 on Memorial Drive. Once this is all accomplished, fire emergency response service would operate from two stations instead of the present three. Emergency response times would be improved, expanded and state-of-the-art space for equipment and staffing will have been provided, and operation savings will have been achieved by the consolidation.

Existing Headquarters, Station 2/Harrington Avenue and Station 3/Edgemere could then all be closed to expedite operational efficiency. If this scenario is pursued, it is probably wise to retain the old Stations 2 and 3 sites to meet future and perhaps now unforeseen municipal space needs. Existing Fire Headquarters in the town center should also be retained in Town ownership and perhaps reused for other Town purposes such as a community center or an indoor recreation center. Alternatively, this site adjacent to the Town Common could be leased to either a private enterprise or a non-profit organization. Because it is located in an historic district, its exterior cannot be substantially altered or expanded.

It is estimated that the construction cost for a new Fire Headquarters (not a Public Safety Building) plus a new Station 3 would cost approximately \$4.5 to \$5 million.

- **Option 2:** Implement Option 1 described above. However, retain Station 2/Harrington Avenue along Route 9 as an operating station to satisfy the neighborhood's wishes for this station to remain open.
- **Option 3:** Investigate the Glavin Center property as an alternative site for a new Fire Headquarters or consolidated Public Safety Building.

The Town should initiate a space and operations feasibility study to test the scenarios described above and possibly others.

- **Public Library:** As described earlier in Section 6, though the Library is in good condition, it now is experiencing significant space shortages to meet the needs of expanding services and programs, particularly for children. As Shrewsbury's population continues to grow, these current space shortages and deficiencies will only be exacerbated. To remedy these and other deficiencies, the Library will need to make improvements to accommodate the growing demands that will be placed on its services and facilities.

Until recently, upon the recommendation of consultants hired by the Library to conduct a space needs assessment study in 1999, the Library had examined an interim solution to address current deficiencies that involved planning for, designing, and funding an approximately \$350,000 Library reconfiguration to provide adequate Children's space and other needed spaces. Recently, however, the Library Board opted to by-pass interim solutions and instead pursue the implementation of a permanent Library expansion that would meet Shrewsbury's library needs for many years to come.

Some alternative permanent improvement options now under consideration include:

- In the intermediate to long range, the consultants recommended an expansion of the Library to twice its present size to meet the demands of future population growth. To plan for this future, the Library should now begin preparing a 20-year plan, which the state will require if Shrewsbury intends to seek state library construction grant funds. This 20-year plan would include an estimate of demand for future library services and circulation, an architectural program to meet that anticipated demand, schematic architectural plans, and cost estimates.

At this point in time, it is not clear that an expansion of this extent could be accommodated at the present Library site. Therefore, alternative site options are being considered, including: 1) Town-owned land near the Municipal Office Building on Maple Avenue, 2) the former Masonic property on Route 140 just north of town center;³ 3) the Glavin Center property on Route 9; and 4) the reuse of the unoccupied HQ building on Route 9 that could be potentially converted to Library use if the town acquired the property.

If the Library is not expanded at its current site and is instead relocated elsewhere, the Town will have to plan for the reuse of the existing Library property. Whether the site is used for a Town facility or leased to a private party, the Town should retain ownership of the land.

- Alternatively, in the long run, the Town could investigate the feasibility of constructing a branch library in another precinct of Town in lieu of or as a complement to a major expansion at the existing Library site. Clearly, a site would have to be identified for such a strategic move and library operations would need to be carefully examined in their entirety to test whether such a split in operations and facilities could be well accommodated by library staff. As a variation to this suggestion, there is a possibility of building a shared branch library facility with a neighboring town, such as Worcester. Such shared facilities are eligible for state library construction grants.

After the 20-year plan is prepared and a suitable site is identified, the Library will need to obtain funds to construct the Library. The Town should pursue a state Library Construction Grant to cover the majority of costs; a local share will also be required.

While the Library's decision to expand at the present site or move to a new site should be based on several factors, one important factor should be the Library's role as an "anchor" public facility in the town center. The Library serves both a functional and a symbolic role in preserving the town center as a center of activity and community for Shrewsbury. Moving the library to a less central location will likely diminish the town center's viability, although it may be possible to find a replacement use for the site that serves the function that the Library now serves.

- **Senior Center/COA Offices:** Since the beginning of 2000, Shrewsbury's seniors enjoy a brand new Senior Center and expanded elderly services provided by the Council on Aging at their new facility on Maple Avenue adjacent to the Municipal Office Building. To further expand programs available to seniors, there is the potential to construct a new hiking trail, in conjunction with the Recreation Department, which would link the Senior Center grounds to the Maple Street

³ The Parks and Recreation Department primarily envision the Masonic property as being maintained for cemetery use and passive recreational use. See Section 11: Open Space and Recreation.

recreation land. This trail could include outdoor exercise stations customized to meet the needs of senior citizens.

- **Highway, Water, & Sewer Departments, South Street Garage & Yard:** The South Street Garage and Yard effectively serve the Highway, Water and Sewer Departments and are generally of sufficient size to meet the demands placed upon them by these Departments. However, the South Street Garage now also hosts vehicles, equipment, work spaces, and supply storage for two other Departments: the Public Building Department, whose facility at the High School is insufficient in size to accommodate all its equipment, and the Parks Department. When these two additional Departments' needs are factored in, insufficient space now exists at the South Street Garage. This current insufficiency of space will only increase in coming years as greater demands are placed on the Parks Department to maintain the new parks, play fields and recreation areas now under development.

While space shortages will likely arise at South Street, the planned relocation of the Public Building Department shops and garage to the new High School site will alleviate some of this pressure, freeing up space for other departments. At that time, the Town should assess these Departments' future vehicle, equipment, workspace and storage needs to determine if an expansion of the South Street Garage is needed. It may prove both necessary and desirable for the Parks Department to develop its own garage and maintenance center at another site to accommodate its greatly expanded mission in the years ahead.

- **Solid Waste Collection, Disposal and Recycling Program/Board of Health:** Shrewsbury's Board of Health provides solid waste collection and trash disposal services for its citizens by contracting with private waste collection and disposal firms. The current waste collection contract expires in 2004 and the current waste disposal contract with Wheelabrator's waste-to-energy plant in Millbury expires in 2007.

As these contracts expire, the Town and Board of Health will issue Requests for Proposals for waste collection and disposal firms to competitively bid on the new collection and disposal contracts. When the contracts are awarded, it is anticipated that collection and disposal fees will dramatically increase compared to the currently contracted prices, which are based on a fixed yearly cost increase for the Town regardless of tonnage. The more new development that has occurred in the Town at the time, the greater the increase in price that will occur when the new contracts are secured. The Town should begin to anticipate these increased prices and budget accordingly in their future operating budget projections.

- **Shrewsbury Light & Cable/Shrewsbury Electric Light Plant (SELP) and Shrewsbury Community Cablevision (SCC):** In general, the space and facilities needs of SELP and SCC are well served at their several existing locations at the Municipal Office Building, the Municipal Drive Garage and Operations Center, and the Parker Road Broadcasting Studio and Head End Facility (former North Shore School Building).

As described in Section 6, the School Department now uses a portion of the Parker Road facility for a preschool center and offices for Special Education. Once the School Department accomplishes some of its current plans for new facilities (e.g. new High School and new second Middle School), then the current School Department's space at Parker Road could relocate, thereby providing expansion space for the future needs of SELP and SCC.

- **Public Buildings Department Shop:** The Public Buildings Department, which now maintains and repairs most of the town’s municipal buildings, will need to increase its staff by 9 to 17 new employees, once the new High School opens in fall 2002. At present, the Department operates from an inadequately sized shop at the High School and must therefore share or borrow space elsewhere, such as at the Highway Department’s South Street Garage. However, when the new High School opens in 2002, the Public Building Department can then utilize the 6,500 square foot garage at the existing High School, now occupied by the School Department, to serve as its new headquarters for storage, repairs and staff. Once this garage is made available, the Public Buildings Department will have sufficient space to meet its facility needs for the foreseeable future.

14.3. Public Schools

As described in Section 6, the Shrewsbury School Department anticipates further rapid increases in student enrollment in the coming decade, particularly at the elementary grade levels. For example, there has been a 48% increase in enrollment over the past ten years in the school system and it is anticipated that enrollment will again increase by 32% over the next eight years. Put another way, by the school year 2008-2009, enrollment will have doubled since the 1990-1991 school year.

In addition, over recent years, school programs and services have rapidly expanded both to meet state-mandated requirements and to maintain a quality school system. These expanded programs range from special education programs to expanded “dawn to dusk” care.

To accommodate these increased enrollments in the short-run, various grade levels have been assigned to different schools where more space was available, the Beal Early Childhood Center has been made to accommodate some first grade classes, the Parker Road preschool (the former North Shore Elementary school) has been renovated to accommodate a consolidated preschool program, and modular classrooms have been added throughout the school system.

To address present-day overcrowding and to accommodate future enrollment growth, the following facilities expansion programs have either been initiated or will need to be pursued in the future:

- **New High School/Second Middle School:** In the long run, to accommodate swelling enrollments at the high school and middle school levels, the town voted to fund a new High School, which is now under construction. It is presently planned to convert the existing High School into a second Middle School when the New High School is opened. When these two major capital improvements are completed, it is anticipated that the facility needs for high school and middle school grade levels will be well met for the coming decade, barring unforeseen major new educational programs mandated by the state.
- **New Elementary Schools.** When the new High School and second Middle School are completed, there still will remain major space shortages at the elementary schools. That shortage is expected to increase dramatically in the future as elementary school enrollments increase. Beyond growing enrollments, additional demands for space may be placed on school facilities in the future. For example, there is increasing demand for meeting spaces for such organizations as scout troops at the schools and a general expectation that schools will serve as neighborhood/ community centers as well. Therefore, it is clear that Shrewsbury will need at least one, and possibly two or more new elementary schools in the next decade based upon current enrollment projections and rising expectation for community meeting space.

To maintain the Town's present concept of neighborhood elementary schools, at least one new elementary school could possibly be located in the rapidly growing northwest Sewall Hill section of Town in the vicinity of the new High School. A specific site would have to be identified and a traffic access/impact study undertaken to test the validity of this locational recommendation.

Yet another new elementary school may also be needed, possibly in the rapidly growing southeast section of Town. Even a third new school may eventually be required to replace the aging Beal Early Childhood Center originally constructed in 1922. Such a replacement may be required either because the Beal Center is aging and out-of-date (it does not meet state standards for classroom size, for example) or because a full day kindergarten program may be mandated in the future, thereby making the Beal Early Childhood Center inadequate.⁴

In summary, to assess the Town's future school facility needs in the detail required to make informed decisions, a space needs assessment study should be undertaken for the kindergarten and elementary grade levels to determine the need for one, two, or even three new elementary schools over the next ten to fifteen years. As a part of this assessment, the feasibility of updating the Beal School to meet current state mandated space requirements should be evaluated. In addition, potential new school sites should be identified and assessed for their suitability for development. Some locales that have already been suggested as potential sites for new schools include the Glavin Center site, the former Masonic property, and the Sewall Hill area. If existing Town-owned sites prove unsuitable for new school needs, the Town may need to undertake a land acquisition program to purchase new sites to meet future school enrollment demands.

14.4. Cemetery

In recent years, as the demand for interments at the Town's cemetery has grown, new burial areas were laid out and offered for sale in 1999 by the Parks and Cemetery Commission. To accommodate long term burial demand, the Parks and Cemetery Commission wants to set aside approximately 26 acres at the southern end of the former Masonic property to provide additional burial areas.

14.5. Capital Facilities Planning and Budgeting

The Town of Shrewsbury maintains a Capital Budget that projects a five year forecast of facilities and equipment needs. Capital needs items include everything from building expansions or new buildings to the implementation of a computer-based Geographic Information System (GIS) and roof and mechanical equipment repair and replacement needs.

As Shrewsbury's population continues to grow and the demand for new municipal facilities and services grows correspondingly, the Town's capital budgeting process should extend its forecasting horizon to seven to ten years. Although the "crystal ball" of budget projections gets more cloudy as the time horizon increases, the complexity of successfully accomplishing projects today requires this lengthened forecasting period. In addition, advance planning is needed so that future projects can "get in line" for state construction grant programs for schools, libraries, or other facilities.

⁴ Though the Beal Center can now accommodate up to five hundred children, it does so in two half-day shifts of 250 children each. If a full day kindergarten program were to be initiated, then clearly the Beal Center could no longer accommodate the demand.

14.6. Municipal Properties

Since new sites may be required for expanded or new municipal facilities, new land acquisitions may be required as well. Often, private properties that may be suitable for municipal needs may come onto the market quite suddenly. Unless the Town has the ability to act quickly to either purchase an option or purchase the land outright, the opportunity may be lost. Therefore, Shrewsbury should consider, by vote of Town Meeting, to establish a standby Land Acquisition Fund so that it is able to act if and when it so chooses.

14.7. Water Supply and Wastewater Disposal

14.7.1 Water Supply

The Town's water demand has grown substantially over the past fifteen years as more and more formerly rural areas of Town have been developed as residential areas. For the past two summers, the Town has been forced to institute water restrictions during the summer months, regulating lawn watering and other summertime water usage.

It is anticipated that the Town will need to seek out new sources of water sometime in the next five to ten years, and Town officials have already begun considering possible well sites from the recent Town open space acquisitions. Currently a consultant⁵ is conducting a study to investigate potential well sites. The Scandinavian Athletic Club parcel has been identified as a potential well site. However, developing a new well will take approximately 10 years.

Another possible solution to increasing the Town's water supply is to explore the possibility of reopening the dormant wells located within the Town. Use of the Oak Street well was discontinued in 1989 due to bacteria problems, and the South Street well has not been used since 1992. The Town could test these wells to determine if the problems that plagued them ten years ago still exist, or if conditions have improved.

The Town should continue to provide water service to most new development in Shrewsbury, particularly in the Office/Research areas. Public water service may not be warranted in the Rural Residential areas, where lower densities and creative site planning might allow on-site water supplies to co-exist with on-site sewage disposal systems in accordance with Title 5 regulations.

14.7.2 Wastewater Disposal

At the request of the state's Department of Environmental Protection (DEP), Shrewsbury is currently preparing a comprehensive wastewater management plan (CWMP) in conjunction with neighboring communities. Specifically, the plan will evaluate the available capacity of the existing facilities to transport and properly treat the wastewater generated within Shrewsbury. The study will also evaluate the ability of the wastewater treatment facility to meet new anticipated treatment limits, especially in regard to phosphorous levels. For the Shrewsbury/Westborough treatment facility to remove phosphorous at the new levels required by the DEP, the estimated capital costs range somewhere between \$12 and \$15 million. This would require the construction of an additional wing/treatment plant. Annual operating cost for this addition would be approximately \$650,000. In addition, the DEP does not know for certain that the additional infrastructure to the plant can even meet the phosphorous levels they hope to establish.

⁵ TATA & Howard, Inc. of Westborough, Massachusetts is conducting this study.

The uncertain outcome of the CWMP makes sewer planning difficult at this point in time. Whatever the outcome of the plan, though, it is likely that Shrewsbury's sewage treatment capacity will be limited and that additional capacity, if available, will come at a high price. Therefore, it is important for the Town to decide how it will allocate this limited capacity to new development. The Land Use Guide Plan can be used to help answer this question. Sewers should be targeted first toward the proposed Office/Research and Shopping Center areas, where wastewater infrastructure is essential for attracting desired economic development. Providing sewers in other areas should be a relatively low priority since the Town does not wish to promote growth in the Suburban Residential areas and sewers are generally not essential in the Limited Industrial or Highway Business areas. Even if there is sufficient capacity, sewers should not be provided in Rural Residential areas, where recommended development densities are lower and centralized wastewater infrastructure is not appropriate. Within the Rural Residential areas, the Town should promote decentralized wastewater treatment technologies. On-site systems can be used for many single-family homes, while shared septic systems with tertiary treatment can be used to treat wastewater from cluster subdivisions and senior housing developments.

Several improvements to the current sewer system have been suggested or recommended. One possible improvement would limit the distance required for the water to travel by installing a sewer line on Route 20 to pipe wastewater to Westborough. Additional pumping stations located in some sections of the Town would also be required. In addition, the Environmental Protection Agency and the DEP are now requiring communities to complete stormwater management plans. Recharging stormwater directly back to the ground, rather than to the sewer system, would significantly reduce sewage flows during wet periods, while also minimizing inter-basin water transfers.

15. Transportation

A master plan typically addresses transportation from the point of view of integrating transportation-related issues into a community’s overall physical planning process. In addition, the master plan suggests townwide policies that a community could adopt to promote transportation-related objectives. In general, a master plan does not focus on recommending roadway projects or improvements that are specific to a certain section of the community.

Over the past few decades, transportation planning has broadened its focus to include not just the building of new roads but also the management and reduction of traffic volumes as well as providing alternative (non-automobile) forms of transportation. Communities have recognized that major new roadway projects almost always carry large economic, environmental, and social costs, and should be treated as a last resort.

During the Master Plan process, the transportation issue raised most frequently pertained to traffic in the town center. Of additional concern were the changing traffic patterns that will result from the new high school and the future development of the Route 20 Corridor. Residents generally agreed upon several strategies for addressing these and other transportation issues within the Town:

- 1. Maximizing the efficiency of existing road infrastructure and building limited new infrastructure where necessary.
- 2. Adopting policies that help to reduce vehicular traffic, and reduce its impacts on existing neighborhoods.
- 3. Improving local and regional public transportation.
- 4. Expanding the local network of pedestrian and bicycle infrastructure.

15.1. Future Build-out

Chapter 1 presented Shrewsbury’s buildout capacity as calculated in a 1999 study sponsored by the state Executive Office of Environmental Affairs. The townwide buildout was projected to be approximately 6,000 new residential units and 15,000,000 square feet of new commercial/industrial space. Most of the new commercial/industrial development would be located either in the northwest corner of the Town (northwest of I-290), along Route 9 (east of Route 140), or along Route 20 and in the southeast corner of the Town. The potential residential development parcels are more scattered but the bigger parcels are along I-290, Main Street, Lake Street and in the southeast corner of the Town.

If Shrewsbury reaches its full build-out potential, traffic volumes within the Town would greatly increase. Based on standard trip generation rates, the new residential development would generate approximately 55,000 vehicle trips per day while the new commercial and industrial development could generate more than 126,000 trips per day. (Existing traffic volumes are presented in Chapter 7.) This amount of development will put a stress on the operations of all roadways, particularly in the town center. Because of the nature of the Shrewsbury roadway network, the town center will attract a disproportionate amount of new residential and commercial/industrial development traffic. Unchecked and unconstrained, the intersection would experience a fourfold increase in traffic flow. Because the capacity of the intersection and the roadways that lead to it would be at capacity long before this full build-out occurred, drivers would begin to shift to roadways and intersections with more carrying capacity. This would mean that more drivers would shift from the arterials to collector roadways and from collector roadways to the local roadway network—resulting in through traffic on local residential streets.

15.2. Jurisdiction Over Major Roadways in Shrewsbury

In order to understand the possibilities and difficulties associated with modifying or upgrading Shrewsbury's major roadways and intersections, it is necessary to know which governmental body owns or controls each roadway.

The Commonwealth of Massachusetts (MassHighway) controls the following roadways:

- Route 70, Clinton Street
- Route 9, Boston Turnpike
- Route 20, Hartford Turnpike
- Interstate 290
- Maple Avenue, from Main Street to Route 9
- Main Street, from Maple Avenue to Northborough Town Line

These roads represent the primary east/west passages within and through Shrewsbury. MassHighway owns and controls all traffic signals on these roads.

Route 140, the primary north/south roadway (also known as Grafton Street and Boylston Street), is Town-owned but state-regulated. Modifications to any traffic controls or establishment of any roadway restrictions would most likely require state approval.

15.3. Road Infrastructure

Recommendations for a few specific areas of townwide importance are discussed below. Other local intersections are discussed in the six District Studies prepared as part of this master plan (see Appendix C).

15.3.1 Town Center

The Route 140/Main Street intersection is probably Shrewsbury's most congested intersection. A study is currently underway to improve this intersection by widening certain approaches (see the Town Center District Study for more information on the plans). Whether or not these current plans are implemented, the Master Plan recommends in general that the Town should seek to improve this intersection through measures other than road widening, which would sacrifice some of the aesthetic charm of the town center and make pedestrian circulation even more difficult than it already is at this location. Instead, the Town should pursue the following policies:

- Improve traffic at the Route 140/Main Street intersection by instituting technologically advanced traffic signals that optimize flow based on time of day, queue lengths, and demand for left-turn movements.
- Reduce the volume of through traffic at this intersection by encouraging or requiring (if possible) commercial through traffic to seek other routes to bypass this intersection. For example, controls could encourage the use of I-190, I-495 and I-290 as alternative north/south routes. Implementing these ideas will require cooperation from regional and state agencies, especially MassHighway.
- Investigate the feasibility of developing off-street parking in the town center to make this area more pedestrian-friendly and more vibrant. Off-street parking could also allow the Town to

eliminate existing on-street parking to create an additional travel lane on Main Street during peak periods.

- Study the feasibility of building a new connector road between Oak Street at Maple Ave. and Main Street (see below).

15.3.2 Route 9

The heavy traffic on Route 9 is both an asset and a liability. The large number of pass-by trips makes this an attractive place for businesses to locate; however, increasing commuter travel also threatens the safety and efficiency of travel on this route. Within this corridor, the Town should:

- Work with the state to build safe on and off ramps at the junction of Routes 9 and 140 and reconstruct the bridge at this location to make this interchange more efficient and safer. The Town may also want to examine traffic safety north of this location along Route 140 where traffic enters and exits Route 140 at several unsignalized intersections including Melody Lane, Lake Street and Old Brook Road.
- In the long term, the Town should consider how it wishes for the western portion of Route 9 to look and function. Current plans by MassHighway to improve the Route 9/Quinsigamond Avenue intersection are intended to speed local and commuter traffic through this bottleneck intersection, but may be incompatible with the neighborhood shopping environment that some have envisioned for this area. Further study is required to identify feasible long-term transportation solutions for this area that balance local wishes with the road's current function as a major commuter route.

15.3.3 Route 140 at I-290

Traffic entering and exiting I-290 from Route 140 must navigate residential traffic entering Route 140 from several sources within a short proximity of the ramps. In addition to safety concerns on Route 140, this condition contributes to back-ups onto side streets such as Rawson Hill Road and Wachusett Avenue. These conditions will probably become worse as new housing is developed on feeder roads. The Town should investigate the possible ramifications of the increasing traffic volumes in this area and work with MassHighway to develop suitable traffic controls.

15.3.4 Potential New Road Projects

As discussed in the introduction to this chapter, constructing new roadway projects is regarded as a last resort option for improving transportation conditions in Shrewsbury. Nevertheless, this section discusses the process that the Town would undertake if it wanted to build new roadway projects and suggests a few projects of townwide importance that the Town might want to consider and study further.

The Process of Planning New Roadway Projects

In planning a new roadway or a bypass route, an origin and destination survey is first conducted to determine how much traffic is regional through traffic and how much is local traffic. The new roadway is then designed to serve primarily regional-to-regional, regional-to-local (local-to-regional) or local-to-local traffic. Usually it will not have the capacity to serve all three demands.

In considering a local bypass route, the question is usually whether or not there will be intermediate intersections with connecting roadways or an unimpeded flow from the origin intersection to the destination intersection.

The capacity of a new roadway is planned for 20 years into the future. Projections of future traffic are based on an annual increase related to population growth (1-2% annually, compounded) plus traffic generated by future developments. A full detailed build-out study of the Town may be needed and used to justify the new roadway. It is important to acquire the right-of-way at the outset.

Any new roadway project is likely to have several types of impacts, and must mitigate these impacts to an acceptable level. These impacts include:

- Environmental (ecological)
- Social
- Economic

Environmental factors include wetlands, noise pollution, endangered species, etc. The best rule is to simply avoid these impacts, although wetlands can be replicated in some cases.

Social factors include impacts on homes and commercial properties. Berms, plantings and noise barriers can mitigate noise and visual impacts. However, a bypass is usually constructed to divert large volumes of traffic from existing routes. Inserting this traffic near existing neighborhoods is certain to raise opposition and possibly defeat an otherwise acceptable project. Safety of children near the bypass is a related problem. To the extent that traffic would be diverted from existing roadways, the new road could affect commercial properties along the existing roadway if these properties rely on heavy traffic to patronize the property (a gas station is a good example)

Economic factors include both the cost of construction and the potential for improving the local economic base.

Once the corridor has been selected, a route is selected that balances the cost of construction against impacts. Seldom is the most economical route also the most acceptable route, and compromises are required. Future or existing development that might be enhanced by more direct access to the new roadway can affect placement of, or access to, the new roadway. The developers may be asked to share in the cost of the design and/or construction of the new roadway.

Any new roadway is the result of a complicated local, state, and possibly even federal, environmental review process. If Federal funding is obtained through the Massachusetts Highway Department, the federal environmental review process will apply. Since most towns cannot afford new roadways, state funding at least is necessary (unless a developer creates the new roadway to access a new development).

A public hearing is held to alert everyone concerned with the project and, hopefully, to build public support. If results are positive and state and/or federal funding is required, Project Initiation forms are prepared and submitted to the MassHighway. Following their approval, the next step is to place the project on the Transportation Improvement Program (TIP) for that region of the state with a schedule for construction in a future year.

MassHighway will usually require that the Town prepare the environmental documents, (overcoming any local controversy), acquire the right-of-way and prepare the final design. State approvals are required at the 25%, 75% and 100% stages of design, with a formal Public Hearing held by MassHighway in the Town following the 25% design approval. After approval of the 100% design, MassHighway will advertise the project and supervise and pay for the construction, assuming state or state/federal funds are involved.

Potential Roadway Improvement Projects

The Master Plan Steering Committee and Town residents discussed numerous potential road improvements and new road segments during the master planning process. Of these, a few with townwide importance to the overall master plan are identified below. Local transportation issues associated with specific sections of the Town are presented in the District Studies for these areas. The Town should study the feasibility of each of the following potential projects in more detail before deciding whether or not to pursue it.

1. Re-opening the section of Cherry Street from Route 20 to Green Street near Route 30. This connection once existed but was discontinued in the 1960s. This segment would provide a direct link to the Commuter Rail station in Grafton. Doing so would facilitate commuting to this station, ease traffic and safety concerns on Green Street (now a major route to the station), and perhaps make the land on Route 20 more valuable by improving its regional accessibility.
2. Build a new connector road beginning at the Oak Street/Maple Avenue intersection and terminating on Main Street between St. John's and Trinity Church, running through the University of Massachusetts property. This road segment could alleviate traffic through the town center originating from or going to I-290, would provide more north-south traffic options, and could alleviate cut-through traffic on Gage Lane, Westmont Street, and Old Mill Road.
3. Route 20 has been identified as a dangerous road because of the lack of turning lanes and acceleration/deceleration lanes, numerous lane drops, and high volumes of commuter traffic and heavy truck traffic. Route 20 will also absorb a disproportionately large share of new traffic in the Town if the residential and particularly the Office/Research areas along this road are developed. As Route 20 becomes more intensively developed, road widening and/or turning lanes may be needed in some places. The Town should begin discussions of how it would like this road to look and function in the future. For example, a few residents suggested that turning Route 20 into a four lane "parkway" divided with a landscaped median and turning lanes. This would address capacity issues while at the same time upgrading this somewhat bleak section of Route 20.

15.3.5 Other Issues

In order to allow neighborhood residents multiple outlets from their streets, the Town should adopt policies that discourage cul-de-sacs, dead ends, or closed loops. In addition, the Town should consider designating certain local streets as scenic roads. This possibility is discussed further in Section 16.6.6.

15.4. Traffic Management Plan

A traffic management plan (TMP) is a comprehensive strategy to reduce the number of vehicles on the road, to reduce the impact of traffic on a community, and to improve traffic operations. A TMP can incorporate several tools including land use planning, site planning, transportation demand management (TDM), and traffic calming. Each of these tools is discussed below.

15.4.1 Land Use Planning

In preparing an effective TMP, it is important to realize that land uses are what generate traffic. People drive because they need to travel from their home to work, school, shopping, or other places. Consequently, it is possible to reduce the number of vehicle trips required and the length of vehicle trips by creating development patterns that encourage these various land uses to locate near one another and to take advantage of this proximity.

The Land Use Guide Plan incorporates this concept in several ways. First, it establishes shopping areas (Local Shopping or Shopping Center) in each section of the Town in order to minimize the amount that residents must drive to run daily errands. Second, it recommends that the Town allow appropriate mixed-use development, which can reduce the need to drive (for example, by providing lunch restaurants within an office park development). Finally, the Land Use Guide Plan reduces the potential for residential development in the more remote portions of the Town, where residents would need to drive to get virtually anywhere.

15.4.2 Site Planning

Effective site planning for new development can minimize traffic impacts and safety problems on main roads that are caused by vehicles entering and exiting individual developments (whether residential or commercial/industrial). Site design guidelines should be adopted that minimize the number of curb cuts providing access to new development, encourage the provision of internal service roads to connect adjacent commercial uses, and provide adequate acceleration and deceleration lanes for traffic entering or exiting the development (this is especially important on Route 9 and Route 20). Some developments in Shrewsbury already have internal connector roads. For example, the parking lots for East Side Mario's, Boston Market and Burger King are all connected at the rear of the property. This type of internal circulation allows vehicles to travel from business to business without using Route 9, thus reducing congestion on this main road.

15.4.3 Transportation Demand Management

Transportation Demand Management (TDM) involves working with the developers and owners of specific developments to encourage or require alternatives to single-occupancy vehicles as a means of transport to and from the development. One standard TDM practice is to require commercial and industrial developments to actively recruit Shrewsbury residents as their employees. Similarly, developers of residential subdivisions could be encouraged or required to actively seek Shrewsbury employees when they market their developments.

TDM can be taken a step further to encourage "live near work" situations where residents are able to walk, bike, or have a very short commute to their workplace. One way to accomplish this is for employees to actively recruit employees from within the local area. For example, numerous apartment and townhouse developments are located within one mile of the large office parks on South Street between Routes 9 and 20.

Other TDM strategies should be required for all new developments. These strategies should include advancement of transit and carpool incentives. With a significant increase in both residential and commercial developments, and a large percentage of new residents working within the Shrewsbury borders, the feasibility of new bus routes, geared towards the specific developments, should be pursued. Annual follow-up accounting should be a part of the strategies, and developers should be responsible for the maintenance of certain walk/bicycle, carpool or public transportation thresholds in their developments. A specific bylaw should require developers to commit to certain TDM strategies or at a minimum to explain why certain strategies cannot be used.¹

¹ Requiring extensive TDM from developers may appear at first to counteract the Town's attempt to attract new economic development (particularly office parks) into the Town by establishing additional regulations. However, many TDM measures provide "quality of life" improvements for employees and may be viewed as assets, not liabilities, by future tenants. One way that the Town might achieve a balance between encouraging TDM and not excessively regulating new development is to promote TDM through incentives such as density bonuses. By doing this, the Town essentially says to the developer, "if you can reduce the traffic impacts of your project, we'll let you build more."

Finally, the Town should carefully review its parking requirements for all types of development to ensure that it is not requiring too much parking. Excess parking creates a perverse incentive to drive. If parking requirements are eliminated entirely (particularly for stand-alone developments such as office parks and big-box stores), developers will provide only as much parking as they think their project will actually require. To the extent that they can encourage users of the new development to walk, bicycle, carpool, or take public transit, they will be able to save money on the construction of parking spaces and possibly increase their overall development program.²

15.4.4 Traffic Calming

Traffic calming measures include a range of strategies to slow down traffic and deterring the use of local residential roads for through traffic. Strategies might include one-way streets, neckdowns or narrow travel lanes, on-street parking, or speed humps. These strategies include ones that are better than those currently employed by the town such as the development of cul-de-sacs and dead-end streets. Traffic calming must be conducted in a comprehensive manner—not piecemeal—otherwise traffic will simply shift from one local street to another. The streets in the vicinity of the town center are one location where the Town might want to begin its traffic calming efforts. Measures should be identified and put in place before the local streets become inundated by through traffic. The Town can also require developers to implement traffic calming measures in new subdivisions.

15.5. Public Transportation

At the master plan forums, many residents expressed interest in strengthening the Town’s public transportation system. This would especially benefit the non-driving population—including the elderly, children, and the disabled—as well as contribute to transportation demand management possibilities described earlier by offering residents other transportation options. Suggestions from residents included establishing a bus route or shuttles to the new Grafton commuter rail station and as well as a townwide paratransit shuttle bus. Additional improvements to the commuter station would consist of expanding the Park and Ride lot, which often reaches full capacity, forcing commuters to park their vehicles on the road outside the lot. In addition, the Town currently has no “official” bus stops; riders stand along the road and flag down the bus. Establishing proper bus stops with available route, fare, and schedule information would be a major improvement over the existing situation.

Recently the Worcester Regional Transit Authority (WRTA) has discussed improving the way that the Authority allocates resources to suburban towns. This local bus service could be a major asset for Shrewsbury residents and employees. As shown in Table 7-3 in Section 7.5, 50% of Shrewsbury employees live in either Shrewsbury or Worcester, while 56% of Shrewsbury residents work in either Shrewsbury or Worcester. Many of these local commutes could be accomplished by bus if appropriate routes were provided. Potential changes include creating new routes to provide service to Route 9 or other shopping areas, instituting a Dial-A-Ride system, and providing improved intratown bus service. The Town should work with WRTA to develop a public transit system that best serves the needs of the Town’s residents and the needs of the Town’s transportation network.

As shown in Table 7-3 in Section 7.5, relatively few Shrewsbury residents work in Boston or other communities along the Worcester Commuter Rail line, and relatively few Shrewsbury employees live in other communities along this line. Nevertheless, a shuttle from the Commuter Rail station to major places of employment, timed to coordinate with train arrivals and departures, could be an asset to businesses in

² In suburban locations, parking requirements are often the limiting factor that determines the maximum floor-area ratio that a developer can build on a given site.

the Town by providing transportation options that could be utilized by employees as well as business travelers visiting Shrewsbury workplaces who might not want to drive.

15.6. Pedestrian and Bicycle Transportation

Many residents at the forums suggested that improving the non-vehicular travel network in the Town would substantially improve residents' access to goods and services, recreation facilities, or even to their friend's house.

15.6.1 Pedestrian Facilities

While some areas of the Town are sparsely populated or characterized by narrow or high-speed roads—making non-automotive methods of travel seem unsafe and/or unlikely—many areas of Shrewsbury have been developed at a medium density that is conducive to walking. Some of the areas where residents have requested that sidewalks be constructed or improved are listed below:

1. Route 9 at Sterling, Svenson, and Maple
2. West Main Street
3. Prospect Street
4. South Quinsigamond Ave. near Lake Street and Arrowwood Drive
5. North Quinsigamond Ave.
6. Holden Street
7. Gulf Street
8. Spring Street
9. By St. John's Prep./High School
10. Route 9 to Borders Book Store
11. Floral Street School area
12. South side of Lake Street and Howe Ave.
13. Colonial Drive neighborhood

While residents identified many road segments as being appropriate for the construction of sidewalks, it is not possible for the Town to develop all of these at once, nor would it be prudent. While residents may feel that sidewalks constructed in their neighborhood would definitely be utilized by themselves and their neighbors, the Town should conduct a more in-depth survey of the suggested areas—looking at existing densities, land uses, the presence of transit stops, presence of recreational facilities, and the presence of schools—in identifying the sidewalk links that would best promote access in the Town.

In conjunction with the construction of sidewalks, the Town would also have to provide pedestrian facilities at intersections including crosswalks, pedestrian signalization, limited vehicular curb cuts and driveways, and handicapped-accessible ramps. The Town should also consider improving the pedestrian-friendliness of sidewalks, particularly in the town center and along the western portion of Route 9, by buffering the sidewalk from the roadway by a landscaped strip or even a row of parked vehicles. Route 9 at Harrington Avenue is an example of an intersection that needs improved pedestrian facilities, as is the Route 140/Main Street intersection, where many Library patrons have difficulty crossing the street.

To fund sidewalk construction, the Town may look to several different funding mechanisms, aside from their own capital-programming budget. These include:

- **Special Assessment:** To finance capital projects that directly benefit specific properties or neighborhoods, the Town may consider the use of special assessments. Since they are levied on property, special assessments are similar to property taxes except that they are specifically designed

to recover part or all of the cost of an improvement that directly benefits an individual property or group of properties. Special assessments are based on formulas that relate the landowner fee to the services or benefits received, and could be targeted to specific neighborhoods that decide they wish to fund sidewalks in their neighborhood.

- **ISTEA/TEA-21:** In many states federal money from the Intermodal Surface Transportation Efficiency Act has been used for the construction of sidewalks, multi-modal, and beautification projects. However, current funding for such projects in Massachusetts is very tight. A project would have to receive considerable political support and majority backing, meet all applicable design guidelines, and tie into safety improvements and/or multi-modal projects to be potentially considered for funding.

15.6.2 Bicycle Routes and Multi-Use Trails

The Town's only existing off-road trail is associated with Dean Park. No on-road bicycle routes presently exist in the Town. During the master planning process, a number of residents expressed the need for a town-wide bicycle route and for the Town's roads to safely accommodate cyclists. Residents also requested that a multi-purpose bike/hike trail be constructed. Created for recreational purposes, this linked greenway could provide residents with a safe off-road path for transportation and recreational purposes.

The Town's efforts regarding trails and bicycle routes were initiated prior to the start of the Master Plan. In their *Northeast Subregion Inter-Community Trail Connection Feasibility Study* (September 2000), the Central Massachusetts Regional Planning Commission (CMRPC) conducted a feasibility study of constructing off-road trails and on-road bicycle routes. This report advanced ideas initiated by the Town in their February 2000 consultant-prepared report, *Town-Wide Trail System and Master Plan*.

It was recommended that the Town should pursue utilizing the New England Power Company's (NEPC's) easement that runs north-south to the west of Route 140 become an official Town-sanctioned trail. The Town would have to complete some paperwork, put in an official request with NEPC, and then decide how to develop the trail (e.g., paved or unpaved).

It was also recommended that the Town pursue establishing on-road bicycle routes along Route 140, Maple Street, Grove Street, Floral Street, Walnut Street, and Bumblebee Circle. An off-road bicycle route could also be constructed adjacent to the I-290 segment that runs through Shrewsbury, within the highway right-of-way, thus linking the Slocum Meadow Nature Preserve to Worcester.

Bicycle facilities and multi-use trails can be integrated into new developments, particularly new subdivisions. Standards in the Town's Rules and Regulations Governing the Subdivision of Land can require developers to establish new pedestrian and bicycle connections to abutting streets and properties when it is appropriate.

Chapter 4

Implementation Plan



Shrewsbury Master Plan

April 2001

16. Implementation: Regulatory Policies

Local land use regulations—which include the Zoning Bylaw, the Rules and Regulations Governing the Subdivision of Land, and portions of the General Bylaw—are the primary factor in determining how Shrewsbury will grow and develop in the future. This section discusses changes to these land use regulations that will be required to implement the Master Plan.

The Town’s Zoning Bylaw is authorized under Chapter 40A of the Massachusetts General Laws. Any changes to the Zoning Bylaw or Zoning Map require a two-thirds affirmatory vote of Town Meeting after a public hearing by the Planning Board. The Rules and Regulations Governing the Subdivision of Land are authorized under Chapter 41, Section 81Q of the General Laws, and may be modified by the Planning Board in accordance with the requirements of this Section. The General Bylaw includes a variety of provisions, procedures, and regulations related to the governance of the Town, and may be modified by a majority vote of Town Meeting.

16.1. Zoning Bylaw Language and Structure

Shrewsbury’s current Zoning Bylaw is presented in ten sections, and is generally clear and straightforward. However, most of the Bylaw text was written in 1967, and could benefit from certain updates and improvements. The following changes are recommended to make the Bylaw clearer and more consistent:

- 1. Definitions:** Precise definitions are needed to ensure fair and uniform enforcement of the Bylaw, and to protect the Town from those who may challenge enforcement decisions. The Definitions section could benefit from some new definitions and improvement of existing definitions. For example, the definition of “home occupation” should be updated to include home office-type situations made possible by personal computers and the Internet. In addition, the Town may wish to limit home occupations to those uses that do not exceed certain thresholds in terms of their impact on the neighborhood (e.g., number of persons employed or number of vehicle trips generated per day). The term “bed and breakfast” should be defined as a use distinguishable from other transient lodging facilities defined in the Bylaw. The definition for “parking” should not make reference to “open space,” which is specifically defined not to include paved parking areas. Other definition changes may be warranted following a comprehensive review of this section.
- 2. Organization:** Portions of the Zoning Bylaw could use improvement in terms of organization. Consistent use of numbering, lettering, indentation, and heading styles to delineate sections and subsections of the Bylaw will help make the Bylaw easier to read, understand and enforce. Section V of the Bylaw requires the most attention in this regard.
- 3. Parking Requirements:** The Town should carefully review its existing off-street parking requirements (Section VI-D) and consider reducing these requirements in order to reduce the aesthetic and environmental impacts of excess parking. Current parking requirements may be particularly excessive for restaurant and retail uses, and for certain residential uses. The Town’s current parking “reserve” provisions are a step in the right direction. The reserve provisions allow developers to propose up to 25% less parking than would typically be required provided that land is set aside to build this parking in the future, if it becomes necessary. However, additional provisions should be examined to minimize excess parking. For example, within the Office/Research areas, developers should be allowed (or perhaps even encouraged with incentives) to build less parking if they can demonstrate that a percentage of their workers will use alternative forms of transportation such as carpooling, public transit, walking or biking.

4. **Nonconforming Structures:** The Town should review its provisions pertaining to the expansion of nonconforming structures so as to minimize unnecessary appeals while still protecting neighborhoods from detrimental changes.

16.2. New Zoning Map & Zoning Districts

Section 3 of the existing Zoning Bylaw divides the Town into fourteen different zoning districts. The extent of each zoning district is shown on the Zoning Map.

In order for the Land Use Guide Plan (Figure 9-1) to become official Town policy that will determine future land use in Shrewsbury, the Town's Zoning Bylaw must be modified to reflect this Guide Plan. This will require revising the Zoning Map and establishing new use and dimensional requirements for the new zoning districts.

The Proposed Zoning Map is shown as Figure 16-1. This map is very similar to the Land Use Guide Plan with the exception that some of the lands shown as Conservation/Recreation in the Guide Plan are zoned for residential or business use on the Proposed Zoning Map. This is because some of the lands proposed for Conservation/Recreation use are still privately owned and cannot be zoned Conservation/Recreation until these lands are protected through a land purchase or other agreement with the landowner.

The Proposed Zoning Map includes eleven zoning districts:

- Conservation/Recreation
- Rural Residential
- Suburban Residential 2
- Suburban Residential 1
- Multi-Family Residential
- Local Shopping
- Shopping Center
- Highway Business
- Office/Research
- Limited Industrial
- Public/Semi-Public

The use and dimensional requirements for each of these eleven districts is discussed below.

16.2.1 Summary of Recommended Uses in Each District

Table 16-1 summarizes the recommended uses in each of the eleven new zoning districts based on input from the public and the Master Plan Steering Committee. This table is color-coded, with each district's color in the table corresponding to its color on the Proposed Zoning Map. The recommended uses shown in this table are generalized; that is, there are fewer use categories than in the current Zoning Bylaw and the table tends to lump similar categories together. Recommended uses for each zoning district will need to be discussed and developed in more detail when the Town prepares the actual Zoning Bylaw text revisions to bring before Town Meeting.

**Table 16-1
Recommended Uses in Each Zoning District (Generalized)**

Use Category	USE ✓ = Allowed SP = Allowed by Special Permit x = Prohibited	Rural Residential	Suburban Residential 2	Suburban Residential 1	Multi-Family Residential	Local Shopping	Shopping Center	Highway Business	Office Research	Limited Industrial	Public/Semi-Public
		Residential Uses	One-family dwelling	✓	✓	✓	✓	✓	x	x	x
	Two-family dwelling	SP	SP	✓	✓	✓	x	x	x	x	x
	In-law apartments	✓	✓	✓	✓	✓	x	x	x	x	x
	Over-55 housing	SP	SP	SP	✓	x	x	x	x	x	x
	Assisted living, nursing home	x	x	x	SP	x	x	x	x	x	x
	Multi-family housing ¹	x	x	x	SP	x	x	x	x	x	x
Business Uses	Small retail/service businesses ²	x	x	x	x	✓	✓	✓	x ³	✓	x ³
	Large retail/service businesses ⁴	x	x	x	x	x	✓	✓	x	✓	x
	Banks, ATMs	x	x	x	x	✓	✓	✓	x ³	✓	x ³
	Restaurants (except drive-thru)	x	x	x	x	✓	✓	✓	x ³	✓	x ³
	Drive-thru restaurants	x	x	x	x	x	x	SP	x	SP	x
	Hotels, motels, inns	x	x	x	x	x	x	✓	SP	✓	x
	Bed & breakfasts	x	x	x	x	✓	x	✓	x	✓	x
	Commercial recreation	x	x	x	x	x	x	✓	x	✓	x
	Equipment/vehicle sales	x	x	x	x	x	x	SP	x	✓	x
Building materials sales	x	x	x	x	x	x	SP	x	✓	x	
Research & Office Uses	Small professional offices	x	x	x	x	✓	✓	✓	✓	✓	✓
	Large prof. offices/office park	x	x	x	x	x	x	✓	✓	✓	✓
	Research laboratories	x	x	x	x	x	x	✓	✓	✓	✓
	Research and development facilities	x	x	x	x	x	x	✓	✓	✓	✓
Industrial & Automotive Uses	Gasoline stations	x	x	x	x	x	x	SP	x	SP	x
	Garage & repair shops	x	x	x	x	x	x	x	x	SP	x
	Trucking terminals; warehouses; Distribution centers	x	x	x	x	x	x	x	x	SP	x
	Light industrial uses	x	x	x	x	x	x	SP	x	✓	x
	Contractor & storage yards	x	x	x	x	x	x	SP	x	✓	x
	Manufacturing	x	x	x	x	x	x	x	x	SP	x

¹ Housing for 3 or more families (such as condominiums or apartments), but not senior citizen housing or retirement communities, which are included in a separate category.

² Includes retail stores, banks, gift shops, dry cleaners, etc. The Town should define a threshold for “small” that is based on the size of the building (square feet) as well as potential impacts (e.g., traffic).

³ Not allowed except as part of a mixed-use development (see “Accessory and Mixed Used,” below).

⁴ Includes retail and service businesses that exceed the size and/or impact thresholds established for “small retail/service businesses.”

Use Category	USE ✓ = Allowed SP = Allowed by Special Permit x = Prohibited	Rural Residential	Suburban Residential 2	Suburban Residential 1	Multi-Family Residential	Local Shopping	Shopping Center	Highway Business	Office Research	Limited Industrial	Public/Semi-Public
		Institutional and Other Uses	Schools, educational facilities	✓	✓	✓	✓	✓	SP	SP	SP
Churches	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Hospitals; health care facilities	x		x	x	x	x	SP	✓	✓	✓	✓
Conservation	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Agriculture	✓		✓	x	x	x	x	✓	✓	✓	✓
Outdoor recreation ⁵	✓		✓	✓	SP	SP	SP	SP	SP	SP	✓
Cemeteries	SP		SP	SP	x	x	x	x	x	x	SP
Adult Uses	x		x	x	x	x	x	SP ⁶	x	x	x
Accessory & Mixed Uses	Home occupations	✓	✓	✓	✓	✓	x	x	x	x	x
	Domestic accessory buildings ⁷	✓	✓	✓	✓	✓	x	x	x	x	x
	One or more dwelling units	x	x	x	x	SP	x	x	x	x	x
	Restaurants, cafeterias, etc.	SP ⁸	SP ⁸	SP ⁸	SP ⁸	✓	✓	✓	✓	✓	SP
	Small retail/service businesses	SP ⁸	SP ⁸	SP ⁸	SP ⁸	✓	✓	✓	✓	✓	SP
	Banks, ATMs	SP ⁸	SP ⁸	SP ⁸	SP ⁸	✓	✓	✓	✓	✓	SP

⁵ Includes camps, country clubs, golf courses, playfields, etc.

⁶ Subject to the conditions outlined in the existing Zoning Bylaw.

⁷ Garages, sheds, etc.

⁸ Allowed by special permit only within over-55 housing communities, nursing homes, assisted living facilities, and multi-family housing developments.

16.2.2 Summary of Recommended Intensity in Each District

Current intensity requirements for Shrewsbury’s zoning districts are contained in Table II of the Zoning Bylaw and specify minimum requirements for lot size, frontage, setbacks, and open space as well as maximum requirements for lot coverage and height. When preparing revised intensity requirements for the new zoning districts, the Town should consider the following guidelines for each district:

- **Conservation/Recreation:** Since development is not allowed in these areas, intensity requirements are not applicable.
- **Rural Residential:** This district should require a larger minimum lot size than the current Rural and Residence districts that it replaces—in the range of one acre per dwelling unit. Frontage and yard setback requirements should be flexible, and a significant amount of open space should be encouraged or required, in order to promote more environmentally-sensitive development. For over-55 housing (allowed by special permit), a higher overall number of dwelling units should be allowed, providing that significant open space is set aside.
- **Suburban Residential 2:** The intensity requirements in this district should be similar to the existing requirements for the Residence A district. For over-55 housing (allowed by special permit), a higher overall number of dwelling units should be allowed, providing that significant open space is set aside.

- **Suburban Residential 1:** The intensity requirements in this district should be similar to the existing requirements for the Residence B-1 and B-2 districts. For over-55 housing (allowed by special permit), a higher overall number of dwelling units should be allowed, providing that significant open space is set aside. Some have suggested that the Town limit the size of houses that could be built on the smaller lots within this district. This could be accomplished by establishing a maximum Floor-Area Ratio (FAR) for the district.¹
- **Multi-Family Residential:** The intensity requirements in this district should be similar to the existing requirements for the Multi-Family Residential districts.
- **Local Shopping:** This district should allow more flexibility than the existing Limited Business district. Minimum lot size should be less than 12,500 square feet, and front and side yard requirements should be eliminated so that buildings can abut the sidewalk and each other (thus creating a pedestrian-oriented street). Requirements for lot coverage and open space should also be flexible.
- **Shopping Center:** The intensity requirements in this district should be similar to the existing requirements for the Commercial-Business district, with a few exceptions. Maximum lot coverage should be 50% to allow for the development of high-value uses. The front yard setback should be reduced from 75 feet to perhaps 25 feet so that buildings can be placed closer to the street (perhaps with a 25' landscaped buffer), with parking located to the side or rear of the building.
- **Highway Business:** The intensity requirements in this district should be similar to the existing requirements for the Commercial-Business district. The zoning should require a vegetated buffer between this district and adjacent residential districts to minimize visual and other impacts.
- **Office/Research:** The intensity requirements for this district should establish a maximum allowed Floor-Area Ratio (FAR).¹ Incentives should allow for a higher FAR if the developer implements meaningful Transportation Demand Management strategies (see Section 15) or provides protected open space in appropriate off-site locations (see Section 16.3.4). The zoning should also require a vegetated buffer between this district and adjacent residential districts to minimize visual and other impacts. The intensity regulations for this district must be carefully crafted; the Town may first want to consult the zoning of other communities that have attracted the types of office and research uses for which this district is intended.
- **Limited Industrial:** The intensity requirements in this district should be similar to the existing requirements for the Limited Industrial district. The zoning should require a vegetated buffer between this district and adjacent residential districts to minimize visual and other impacts.
- **Public/Semi-Public:** The intensity requirements in this district should be similar to the existing requirements for the Limited Office-Research district.

¹ FAR equals the square footage of the building(s) on a site divided by the area of that site. For example, a 60,000 square foot building on a 120,000 square foot site would have a FAR of 0.5.

16.3. Growth Management

As mentioned in Section 9.4.1 a multi-pronged strategy will be required for managing growth in Shrewsbury if the Town wishes to prevent overdevelopment. Aspects of the growth management program that can be achieved through zoning regulations are discussed below.

16.3.1 Controlling the Rate of Growth

Several techniques are available for controlling the rate of residential growth in a community. Development moratoria are the strictest policy, and call for a halt on development during a specified period of time. Moratoria may not be used unless there is a compelling reason to enact the moratorium, and, even then, long-standing moratoria that unreasonably delay development have been regarded as “takings” by the Supreme Court and are thus unconstitutional.² For these reasons moratoria are not recommended as a growth management strategy in Shrewsbury.

Some fast growing communities have enacted a limit on the number of residential building permits that can be issued each year townwide. In practice these policies have limited usefulness for several reasons. First, court decisions have ruled that the building permit cap must be at least as large as the average rate of building permit issuance over the past years—so the effect on a town’s growth rate is limited. Even so, a townwide limit on building permits may be perceived by landowners and developers as arbitrary or unfair, and may unduly harm small builders without effectively stopping mega-developments. At best, such policies will slow growth, not stop growth or reduce a town’s ultimate buildout capacity. A better approach to preventing mega-developments from taking a town by surprise is to adopt a “Phased Development” bylaw that requires that large subdivisions be built in phases over several years. Shrewsbury has already incorporated a Phased Development process into its Subdivision Rules and Regulations.

In general, the Town should focus less on limiting the rate of growth—the real estate market will determine that to a large extent—and more on establishing a pro-active land use plan so that development, when it occurs, represents a positive change for the Town. The following policies are aimed at accomplishing this.

16.3.2 Controlling the Density of Development

Reducing the allowed density of residential development will reduce Shrewsbury’s overall buildout capacity, and is recommended within the Rural Residential areas. Historically, Massachusetts communities intent on reducing their buildout capacity have enacted large lot residential zoning (1-3 acres per dwelling unit). While accomplishing their desired purpose of reducing buildout capacity, large lot zoning regulations have also served to accelerate the loss of open space, reduce housing affordability, and perpetuate sprawl. For these reasons, it is recommended that Shrewsbury increase the minimum lot size in the Rural Residential areas only in conjunction with policies that both preserve open space and assist in providing affordable housing.

In the Suburban Residential areas, increasing the minimum lot size is not warranted because these areas are generally less environmentally sensitive and are served by good road, water, and sewer infrastructure in the vicinity. In addition, most of the undeveloped SR areas are adjacent to neighborhoods that have already been developed at medium densities.

² Compelling reasons for adopting a moratorium that have been found valid by the courts usually involve delaying development until specific identified standards providing for the health, welfare, and safety of the public, such as adequate infrastructure or school facilities, have been met.

16.3.3 Clustering Residential Development

Clustering is a tool that shifts development onto the portion of a proposed development site that is most suitable for development while permanently protecting areas where development is less appropriate, such as steep slopes, wetlands, woodlands, floodplains, viewsheds, historically or culturally significant areas, or important habitat. These areas are then set aside as open space and protected through a conservation easement. If done effectively, clustering results in significant protected open spaces, the maintenance of ecological values on the site, reduced impervious surface, lower development costs, and improved aesthetics. The illustrations on the following page show how a clustered subdivision differs from a conventional subdivision. Clustering may be used for new subdivisions of single-family homes or for multi-family housing or retirement communities.

Shrewsbury already has a cluster zoning bylaw that has been used several times, resulting in about 200 acres of protected open space. Within the Rural Residential areas, where a large portion of the remaining developable residentially-zoned land is located, the Town has the greatest opportunity to preserve rural character, open space, and natural resources. If these resources are to be protected, cluster developments will need to play a major role, since the Town will not be able to afford the purchase of all or even most potentially developable land.

Shrewsbury's existing cluster bylaw has been successful insofar as developers have built cluster developments in the Town. (Numerous other communities have adopted cluster bylaws, only to have them remain unused because they fail to provide developers with adequate incentives to use them.) Nevertheless, Shrewsbury's cluster bylaw could stand to be improved in several ways. In particular:

- 1. Open Space Requirements:** One criticism of Shrewsbury's existing cluster bylaw is that the open space created in new cluster developments consists of scraps of land that are not very useful for recreation, wildlife habitat, or other values. This situation could be improved by modifying subsection 8 of the cluster bylaw ("Common Land") to require that the open space consist of contiguous parcels of land that have the maximum value for wildlife habitat, aquifer recharge, riparian protection, scenic value, historic/cultural value, or providing a connection to adjacent open space. In addition, the bylaw should require open space to be provided in the form of one or more contiguous open spaces, not several small fragments of land. Finally, the amount of wetland that can count toward the open space requirement should be reduced from 50% to 25% or less, since this is land that could not be built upon anyway.
- 2. Density Bonuses:** Some people familiar with Shrewsbury's current cluster bylaw have suggested that the 25% density bonus that is now allowed for cluster developments is excessive and works against the Town's attempt to manage and control growth. While a 25% bonus may indeed be excessive, many communities have found that providing some amount of density bonus is an effective way of promoting cluster developments over conventional subdivisions. Now that clustering may be allowed as of right, however, one disincentive to clustering can be removed (i.e., the need to obtain a special permit), and bonuses may no longer be necessary (see #3, below). In any case, the Town should carefully consider how to structure its cluster bonus system in order to promote clustering of new development without unnecessarily increasing the allowed density.³
- 3. Review and Permitting Procedure for Cluster Developments:** Historically, cluster developments could only be allowed by special permit. Recent state legislation (Chapter 148 of the Acts of 2000),

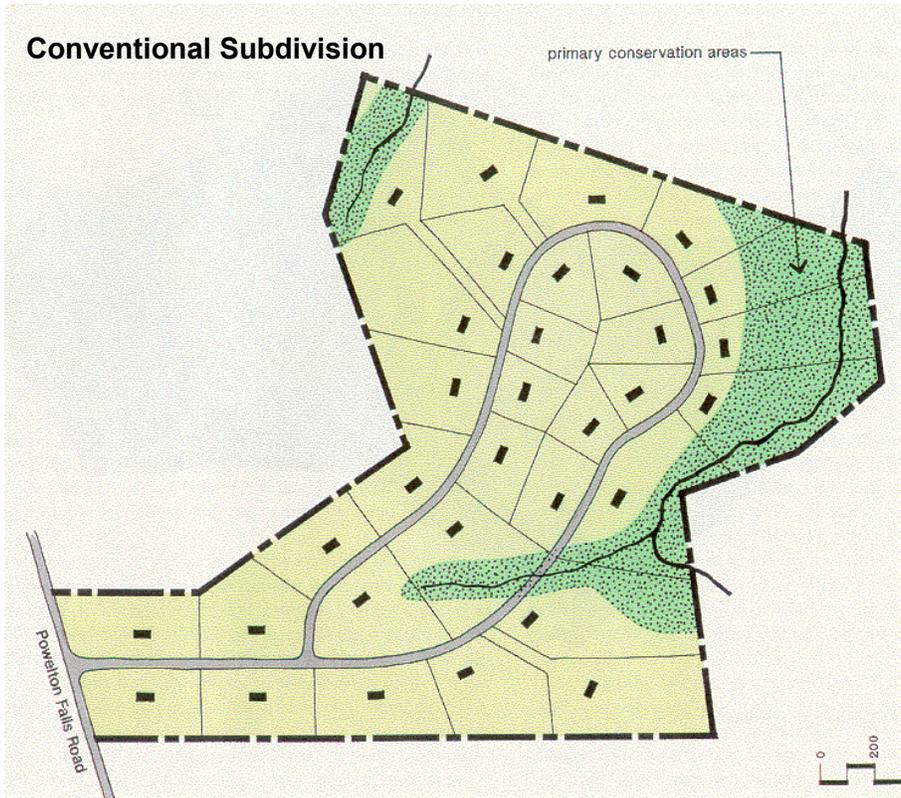
³ One option may be to utilize the 25% density bonus only in the Rural Residential district, where the Master Plan proposes that the minimum lot size be increased. In this scenario, the effect of the zoning change on landowners and developers would be lessened for those individuals who chose to build cluster developments, while the overall buildout potential in the Rural Residential district would be reduced.

however, specifically authorizes municipalities to allow cluster developments as-of-right. Doing so removes some of the permitting uncertainties associated with this type of development, which currently function as a major obstacle to its effective use.

Now that this legislation has passed, Shrewsbury should consider allowing cluster developments by right in the Rural Residential district (and perhaps even making conventional subdivisions a special permit use). If cluster developments are allowed as of right, the Planning Board will still retain considerable control over their design through their site plan review procedures.

Another alternative is to allow the Planning Board to choose between a conventional and a cluster subdivision plan based on the appropriateness of each plan to the site in question. Under this system, a developer proposing any major subdivision (e.g., 5 lots or more) would be required to submit two plans: one for a conventional subdivision and one for a cluster subdivision. This requirement allows both the developer and the Planning Board to evaluate the pros and cons of each design while the subdivision is still in the preliminary design stage. Based on its review of the preliminary plans, the Planning Board would then recommend that the developer design either the conventional or the cluster subdivision.

Finally, the Planning Board could gain additional input into the siting and layout of the open space areas by requiring, at the beginning of the subdivision review process, the submission of an “Environmental Constraints and Opportunities Plan” which shows important natural, cultural and scenic features and analyzes the site’s relation to adjacent land (e.g., potential for linkages or public access). The developer’s designers and the Planning Board would then discuss this plan at a pre-submission conference to identify important criteria for site design (such as preservation of view corridors, wildlife habitat, or prime aquifer recharge areas). Following this conference, the developer would submit two preliminary plans as described in the previous paragraph.



Conservation Subdivision Design

These diagrams compare conventional subdivision layout to Conservation design for an actual 82-acre site containing several environmental and scenic features including riparian forest, a wildflower meadow, and a scenic grassy knoll. The conventional subdivision, at the top, divides the entire parcel into 32 private houselots, consuming all the open space with the exception of wetlands. The Conservation Subdivision, at the bottom, also provides 32 houselots, but groups them together in order to set aside significant site features, such as meadows, roadside views, specimen trees, and a public trail system.



Source: Randall Arendt, *Conservation Design for Subdivisions*, Island Press, 1996.

16.3.4 Other Growth Management Measures

Two other tools for managing growth and protecting open space may be appropriate to Shrewsbury's situation, although neither has a significant track record of success in Massachusetts.

Transfer of Development Rights

Transfer of Development Rights (TDR) is a system that allows landowners in rural areas targeted for open space protection (called "sending districts") to separate the development rights from their property and sell those rights to property owners or developers in designated areas where higher-density development is appropriate ("receiving districts"). These purchased development rights can then be used to increase the amount of development that can be built on the site in the receiving district. As a result of TDR, the overall amount of development allowed community-wide would remain more or less the same, but this development could be shifted from more rural or environmentally sensitive areas (where it would have a large negative impact) to infill or redevelopment sites (where it would have a positive impact). In its typical application, TDR is fairly complicated, requires the cooperation of multiple parties, and may be difficult or time-consuming to administer.

However, a simplified version of this concept could be used in Shrewsbury in order to promote simultaneously two of the Town's objectives: protecting open space and promoting high-value commercial development. Under this system, a developer proposing an office park within the Office/Research district, for example, could be allowed to take an FAR bonus if the developer agreed to purchase or otherwise protect a certain amount of priority open space (e.g., unprotected land shown as Conservation/Recreation, or land within the Rural Residential district). The use of these provisions would be voluntary, although the Town could encourage their use. If the Town wishes to pursue this type of system, which would probably be the first of its kind in Massachusetts, it should seek the advice of a planning consultant or zoning expert for assistance.

Concurrency

One approach to minimizing the effect of new development on public facilities and infrastructure budgets is to adopt so-called "concurrency" laws that require developers to demonstrate that facilities and services will be available to serve any new project at the time that the project comes online. Shrewsbury already uses this type of system to some extent—for example, by requiring developers to construct, at their expense, any new sewer and water infrastructure that is needed to service the development. However, with the potential for sewer and water capacity limitations looming in the future, the Town may want to take this system a step further to prioritize sections of the Town for water and sewer service so that new residential development in the more rural areas of the community does not prevent infill and redevelopment from occurring because of inadequate water and sewer capacity.

16.4. Project Design and Review Provisions

During the Master Plan process, Shrewsbury residents emphasized the importance of requiring new development to be environmentally and aesthetically compatible with the Town's existing characteristics. For this reason, it is important that the Town have a fair but rigorous site planning process for all new development over a certain size threshold within both the residential and commercial districts.

Shrewsbury currently has provisions for Site Plan Review and Site Plan Approval (Section VI-F of the Zoning Bylaw). These provisions apply to most significant new developments other than residential subdivisions. The Planning Board can regulate the design and layout of subdivisions through its subdivision review process. The Site Plan Review/Approval provisions address the following issues:

- Conformance with the Zoning Bylaw
- Vehicular and pedestrian movement
- Parking and loading
- Site planning (grading, lighting, utilities, etc.)
- Landscaping
- Stormwater management
- Groundwater protection
- The potential for nuisances caused by the development
- Impact on traffic, public services, and municipal finances

While the Site Plan Review/Approval Bylaw appears to be fairly comprehensive, a few changes and additions are suggested to strengthen the Bylaw, improve the quality of new development, and minimize the potential for challenges and lawsuits related to design review. In particular:

- **Name:** It is suggested that the project review and approval process be a comprehensive review that addresses site planning, architecture, transportation and other issues. For this reason, “Development Review” is probably a more suitable name than the current name “Site Plan Approval.”
- **Impact Studies:** Subsection (g) should be more specific about the types of impact studies that are required, particularly for traffic impact studies. For a large development, such as an office park or a shopping center, the traffic study should address the following issues:
 - Study area
 - Existing traffic operations and build-year traffic operations
 - Project-generated daily and peak hour traffic volumes
 - Project impact on traffic operations (level of service, etc.)
 - Access and egress
 - Pedestrian and bicycle circulation
 - Transportation demand management
 - Proposed mitigation

Architectural Review: Based on input provided during the Master Plan process, many residents want to improve the quality of new buildings within the Town. Architectural review could apply townwide, or only within certain areas or districts, such as the historic town center or the Local Shopping districts. The purpose of design review is not to require that all buildings in Shrewsbury look alike, but to ensure that areas as a whole are developed in a consistent style that is attractive, functional, and pedestrian-oriented.

The architectural review provisions should be specific enough so that the review does not appear “arbitrary and capricious.” On the other hand, standards should not be so specific that they may be challenged as exceeding a municipality’s legitimate police power as exercised through zoning. Appropriate architectural standards might relate to:

- Bulk and massing
- Building materials
- Roof style (e.g., no flat roofs in certain area)
- Colors, decorations, signage
- Pedestrian-friendly façade (e.g., no blank walls adjacent to sidewalks)

- Compatibility with nearby structures
- Setbacks from adjacent properties and the street

Many communities that have adopted an architectural review process have created a volunteer review board specifically to administer this process. The board often consists of local professionals familiar with architecture, design, or historic preservation. The developer would make one or more presentations to this board, perhaps resulting in modifications to the design. Ultimately, the review board would make a recommendation to the Planning Board as to whether the proposed development satisfies the requirements of the architectural component of the Development Review Bylaw.

- **Required Mitigation:** Subsection (h) of the Bylaw should specifically authorize the Planning Board to make Site Plan Approval contingent upon the inclusion of appropriate on-site and/or off-site mitigation measures.

16.5. Affordable Housing

Shrewsbury should promote affordable housing both for the benefit of its existing residents (some of whom might otherwise not be able to afford to live in the community) and because of state mandates (such as Chapter 40b and Executive Order 418) that penalize communities that have an insufficient amount of affordable housing. Implementation options for affordable housing are presented in Section 13.3 of this Master Plan.

16.6. Natural and Cultural Resource Protection

16.6.1 Aquifer Protection Overlay District

The Town should carefully review its Aquifer Protection Overlay District Bylaw, particularly the section pertaining to special permit uses (subsection 5). See Section 10.1.3 of the Master Plan for additional discussion of this topic.

16.6.2 Local Wetlands Protection Bylaw

A local wetlands protection bylaw is recommended in Shrewsbury as a way to provide additional protection for the Town's wetlands as well as greater local control over the review of projects in or near wetlands. See Section 10.1.1 of the Master Plan for guidelines on the content of the bylaw.

16.6.3 Ridgeline and Hillside Bylaw

As Shrewsbury becomes increasingly built up, developers have begun to build on more marginal lands such as steep slopes. The development of steep slopes can result in negative environmental impacts both during and after the construction of a new project—particularly erosion and runoff. In addition, the development of hillsides, if not sensitively planned, may create significant visual impacts by replacing scenic ridgelines with a series of buildings.

One way of addressing these potential problems is to establish a Ridgeline and Hillside Overlay District and a corresponding bylaw that governs activities within this district. The district could apply to all areas of steep slopes (e.g. 15% or greater) as well as ridgelines (defined by their elevation relative to surrounding landforms). Effective ridgeline and hillside bylaws commonly provide for additional design standards and an additional level of review for activities proposed within the overlay district such as new construction, significant additions to existing structures, and earth moving activities. These provisions might include:

- Requirements to retain natural vegetation⁴
- Stormwater management standards (this is appropriate to adopt townwide, as discussed below)
- Standards for slope stabilization and erosion control
- Site planning guidelines that require new buildings to be sited within the treeline and below the crest of a ridge in order to minimize visual impacts
- Building design guidelines that require prominent or highly visible structures to blend into the natural landscape through the use of appropriate building materials, colors, and massing

As an alternative to adopting a hillside overlay district as part of the Zoning Bylaw—a process which requires Town Meeting approval—many of the same protections could be achieved through a modification of the Rules and Regulations Governing the Subdivision of Land, which can be amended by an action of the Planning Board.

16.6.4 Lakefront Overlay District

A lakefront overlay district could help Shrewsbury make better use of its lakefront and, over time, to increase the amount of public access to the lakefront. Since the vast majority of the lakefront is in private ownership and is already developed, the overlay district will need to focus on setting appropriate guidelines for redevelopment as well as establishing incentives that guide the use of private property. Additional guidelines for the content of this bylaw are provided in Section 11.5.

16.6.5 Stormwater Management Bylaw

Townwide stormwater management standards can be adopted in order to reduce the amount of nonpoint source pollution emanating from new development while at the same time increasing groundwater infiltration. These objectives are particularly important in Shrewsbury’s wellhead protection areas and in the immediate watershed areas of its ponds, lakes, and streams. Local stormwater management standards should apply to all new development over a certain size threshold (e.g., ¼-acre of altered land) and should address the removal of suspended solids, stormwater infiltration, and peak discharge rates.

The state Department of Environmental Protection’s (DEP’s) current Stormwater Management Policy is a good model that Shrewsbury could adopt locally as a General Bylaw, with a few modifications such as the addition of documentation requirements and review procedures. Most of DEP’s standards are “performance standards,” and therefore allow the engineer to select the most cost-effective technology or practice to achieve the given standard. The Planning Board would be the most logical body to administer a local stormwater management bylaw.

16.6.6 Scenic Roadways Bylaw

Chapter 40, Section 15C of the Massachusetts General Laws authorizes municipalities to designate any road within the community, other than a numbered route or a state highway, as a “scenic road.” After a road has been designated as a scenic road, any repair, maintenance, reconstruction or paving work cannot result in the cutting or removal of trees or destroying of stone walls without prior written consent from the Planning Board and a public hearing. The scenic roads designation applies only to work within the road right-of-way, and does not affect the use of land abutting the roadway. In order to protect the scenic quality of land outside the right-of-way, Shrewsbury would need to adopt a corridor protection overlay

⁴ Some communities require a certain percentage of the natural vegetation to be retained on a site depending on the steepness of the site. For example, 25% of the natural vegetation must be retained if the slope exceeds 10%, 40% if the slope exceeds 15%, 55% if the slope exceeds 20%, 70% if the slope exceeds 25%, 85% if the slope exceeds 30%. Clearcutting would be prohibited anywhere in the hillside overlay district.

district that extends a specified distance from the road centerline. Many Massachusetts communities have adopted scenic road designations pursuant to Chapter 40, Section 15C, but very few have adopted corridor overlay districts to protect scenic quality.

Certain roads in the more rural section of Shrewsbury may be appropriate for scenic road designation, such as Green Street, Brook Street, and portions of Walnut Street. Before designating a scenic road, however, the Town should consider whether significant upgrades or widening may be required in the future. If so, scenic road designation is probably inappropriate since it will make future road improvements much more difficult to accomplish.

Even for roads that the Town may need to upgrade in the future, scenic qualities can be preserved by establishing local standards for roadway reconstruction. These standards might require, for example, that stone walls that are taken down to widen a road must be replaced in a fashion similar to the original wall, and that trees that are in the way of road widening projects be moved if possible or otherwise replaced with the same species of tree.

16.7. Subdivision Rules and Regulations

The layout of new residential subdivisions is controlled in large part by the Rules and Regulations Governing the Subdivision of Land. During the Master Plan process, participants offered some suggestions to improve subdivision design in Shrewsbury such as:

- Minimizing the number of cul-de-sacs in order to increase road connectivity and pedestrian accessibility.
- Encouraging roadway width that is in keeping with the character of the surrounding streets and not excessively wide.

The Planning Board has the authority to modify the Rules and Regulations Governing the Subdivision of Land, and is the body that would implement such changes.

16.8. Administration and Enforcement

Administration and enforcement of zoning regulations is an essential component of overall land use planning. Based on input provided by Planning Board members and by the Building Inspector, the following Bylaw changes would be beneficial in terms of improving the administration and enforcement of the Bylaw:

1. Provide for the non-criminal disposition of Bylaw violations similar to those recently adopted by the Town Meeting pertaining to violations of other town bylaws and regulations.
2. Allow the expansion of nonconforming single family and two family dwellings without requiring the issuance of a special permit by the Zoning Board of Appeals, providing that the structure conforms to a set, acceptable percentage of the minimum setback requirement. This would greatly reduce homeowners' time and expense as well as the time demands on the ZBA in situations where no significant zoning issues are raised.
3. Consider hiring a zoning administrator, as provided for in Chapter 40A, Section 13, to decide certain zoning appeals, such as minor dimensional variances.

17. Implementation: Public Investments and Other Steps

17.1. Public Facilities and Services Guidelines

Based on the Town's forecasted continuing growth and current service demands still unmet, Shrewsbury over the next ten to fifteen years will need to continue to invest in additional public services and facilities and possible land acquisitions. The most pressing needs are additional schools, public safety facilities, and an expanded network of water and sewer infrastructure. These potential investments have been documented in Section 14 of this Plan. Such expansion of services will require the expenditure of additional capital investments as well as on-going annual investments in increased payrolls and operations to staff and maintain these new services and facilities.

As is the case in almost any needs assessments, demand for services and facilities will exceed the available resources in any given year to provide for them. Therefore, the key to providing required new services is reaching a consensus on *priorities*: identifying what is most essential to the community's health, safety and well-being and then funding those essentials first. For example, are schools or a community center most important to meet Shrewsbury's most pressing needs? Establishing priorities does not diminish the importance of any one potential project. It simply identifies what must be accomplished first given that resources are always limited.

In the process of preparing this Master Plan, it has become evident that there are sometimes competing interests or advocates for the same resources or properties, such as the Masonic Property or the eventual reuse of the landfill site. Using the example of the Masonic Property, for instance, there have been at least four potentially competing uses identified for this property: conserved open space, an active recreational park, an expanded cemetery, and a new library facility (or a combination of one or more of these uses).

Such potential conflicts focus the issue of priorities. For instance, consideration of the cemetery option for this site raises the fundamental question of whether the Town wants to remain in the cemetery business in the years to come? This is a question that has not been explicitly asked nor answered. Therefore, it will be up to the Town's Selectmen, Town Meeting members, Finance Committee, and Town Manager to answer such fundamental questions such as this one. Once these questions are answered, these groups will need to weigh competing interests to reach a consensus on priorities for the next several years.

17.1.1 Guidelines for Establishing Priorities

To help the Town's various decision-making bodies agree upon priorities, the following guidelines may prove useful. They may serve as a checklist against which all facility demands are compared and weighed so that priorities may be established and capital budgets established.

Fund Capital Facilities of Long-term Value with Long Term Funding Mechanisms

Capital facilities with expected lives of fifteen years or longer should be funded by long-term bonds. Long term capital improvements serve not just Shrewsbury's current population, but its future residents as well. Therefore, it is only fair for future beneficiaries to share the costs as well. Facility improvements or repairs with expected lives of no longer than five to ten years should be funded from annual appropriations or one-time appropriations.

Rank Priorities In Accordance With the Town's Most Pressing Needs

In general, categories of priorities may be classified into the following three groupings: Fundamental Needs (1st priority), Enhanced Quality of Life (2nd priority), and Enrichments (3rd priority). Placement

of services or facilities into the second or third category does not negate their ultimate importance to the community. In fact, without the services listed in these latter two categories, Shrewsbury's quality of life attributes would be severely diminished. These categories simply clarify the priority of sequencing Town investments. In general, services in the first category should be adequately provided for before additional investments are placed in the second or third categories.

Of course, priorities must be established *within* categories as well as *between* categories. For instance, though both the Police Department and Fire Department (both Public Safety services) are in need of improved facilities, the Police Headquarters were expanded in recent years while Fire Department facilities have not been significantly improved in 25 years. Therefore, priority may be given first to Fire Department facilities to enable them to provide better fire protection to Shrewsbury's rapidly growing population.

Based on discussions with the Town Manager, the Town's current priorities are roughly as follows:

- **Primary or Core Services & Facilities – Fundamental**
 - Public Safety (including police and fire protection)
 - Education
 - Public Works
 - Solid Waste Collection & Disposal

- **Secondary Services & Facilities – Enhanced Quality of Life**
 - Cultural Facilities / Libraries
 - Recreational Facilities
 - Cemetery
 - Conserved or Protected Open Space Properties

- **Elective Services & Facilities – Enrichments**
 - Entertainment and Cable TV
 - Museums

There may be exceptions to these priorities. For instance, if a service can be provided on a financially self-sustaining basis—through voluntary user fees or private fund-raising efforts, for example—then its provision should be considered, even if it is not ranked in the primary or even secondary priority category.

Prioritize Projects Where Options Will be Foreclosed if Action is Not Taken in a Timely Manner

Some decisions are critical in terms of their timeliness. For instance, when private or institutionally owned properties that the Town has considered for acquisition go on the market, the Town must decide quickly whether it wants to acquire them. If it does not act quickly, it may forever lose the opportunity to acquire the property.

Conversely, some decisions can be postponed because the a lack of an immediate decision does not foreclose options. For instance, using the example of the Masonic Property once again, the decision to use this land for either cemetery use, a library site, or permanently protected open space can be deferred until later since the land is already town-owned, and therefore protected, and its future use is entirely under Town control. Consequently, the possibility of using this property for any or all of these potential future uses is not jeopardized by threats of unwanted private development, for example.

Utilize a Decision Tree: Consider that Actions Have Subsequent Consequences

Often, actions taken on one matter either allow or foreclose subsequent decisions and options, particularly where there is competition for limited resources or available sites. A decision tree is a diagrammatic decision-making tool where the alternative consequences of any one action are diagrammed so that subsequent alternative consequences can be considered from the outset.

Using but one example, there has been discussion of creating a Community Center at the Beal School. However, to realize this option, a new Early Childhood Center would have to be constructed or relocated elsewhere first so that the Beal School could then become available for Community Center use. Therefore, the decision to construct a Community Center at the Beal School presupposes the relocation of the Early Childhood Center to another site.

Therefore, potential capital funding decisions should be outlined on a decision tree, at least conceptually, so that subsequent consequences—particularly those future options that are then enabled or foreclosed—are identified and understood.

17.1.2 Next Steps

Shrewsbury has an ambitious capital improvement program ahead of it that must be implemented over the next five to ten years. The Town has a sound capital budgeting process in place to anticipate and then fund needed improvements. However, as stated above, priorities must be established, particularly for properties where there are competing interests. Such need for prioritization should be explicitly acknowledged and debated in a comprehensive manner so that a consensus can be crafted and specific capital decisions can then be made within the context of this broader consensus. As the Town moves forward on many of these initiatives, the Town may wish to explicitly incorporate the above guidelines into their decision-making process and trust in the wisdom of today's decision-makers, as well as future ones, to meet citizens' needs and expectations.

17.2. Transportation

Several of the transportation recommendations, such as land use planning and Transportation Demand Management in new developments, can be implemented through changes to the Zoning Bylaw. Section 15.4.3 provides more information on how such a bylaw could be written.

Many of the transportation-related recommendations will require additional study to assess the project's feasibility and cost and then to develop the best design or system for the project. To this end, the Road Commissioners should compile and prioritize a list of roads that require additional analysis, and study these roads as funds become available. Based on this Master Plan, the following transportation studies may be a high priority:

- Parking demand and availability in the town center, and best solutions for providing additional parking
- Improving local transit services (study in conjunction with WRTA)
- Re-opening the Cherry Street connector from Route 20 to Grafton
- Building a new connector road from Maple Avenue to Main Street
- Transportation study for Route 20 (study in conjunction with MassHighway)

A townwide program of traffic calming and traffic management should be developed and implemented over a period of several years. Most likely, the DPW would lead this effort, with input from the Planning Board, other Town departments, and business and neighborhood groups. The Town may want to consider

hiring a designated coordinator for traffic management, pedestrian, bicycle, and transit projects in Shrewsbury.

17.3. Local Improvements/District Studies

Many of the issues identified in the six District Studies can be addressed through a combination of regulatory changes, public investments, and partnerships with private landowners and businesses. Based on the information presented in the District Studies, the Town's professional staff as well as the Planning Board should identify specific steps to accomplish the desired changes within each of the districts.

18. Implementation Tools

This section discusses a range of tools that Shrewsbury can use to assist in implementing the Master Plan. These tools include sources for grant funding, matching funds, technical assistance, and other resources. Please note that some of these sources change from time to time as funding is appropriated or eliminated, or for other reasons.

18.1. Tools for Protecting Open Space and Natural and Cultural Resources

18.1.1 Grants for Open Space and Passive Recreation

Massachusetts Self-Help Program

The Self-Help Program has assisted municipal conservation commissions in acquiring land for conservation of natural resources and passive outdoor recreation purposes since 1961. The intent is to preserve lands and waters in their natural state. Self-Help funds also protect areas containing unique natural, historical or cultural features or water resources. Compatible passive outdoor recreational use such as hiking or bird watching are encouraged and access by the general public is required.

This state program pays for the acquisition of land or a partial interest (such as a conservation restriction), and associated acquisition costs such as appraisal reports and closing costs. The cost of development of passive recreational facilities on land acquired with Self-Help monies must be absorbed by the municipality, and such development must be reviewed by the Division of Conservation Services. Self-help grants provide communities with 52% to 70% reimbursement for the total project cost, up to a maximum grant of \$500,000. In the past, the deadline for applications has been June 1 of each year.

Contact: Jennifer Soper, Division of Conservation Services, 617-727-1552.

Greenways and Trails Demonstration Grants Program

This program provides grants to support greenway projects and trail networks that connect existing open space. Projects eligible for funding include greenway and trail planning, mapping and resource assessment; greenway related public education and outreach; and greenway and trail management, maintenance and expansion. The grant program provides awards of \$1,000 - \$5,000 for projects within a single community, and up to \$10,000 for projects that are regional or multi-town. Grants are awarded to municipalities, non-profits and regional planning agencies.

Contact: Jennifer Howard, Greenways Coordinator, Department of Environmental Management, Office of Natural Resources, 413-586-8706.

National Recreational Trails Act Grant Program

The National Recreational Trails Act (NRTA) and the Intermodal Surface Transportation Act (ISTEA) of 1991 provide for the transfer of fuel tax revenue generated by the use of off-highway vehicles and in backcountry camping, to a statewide grant program. These grants, administered by the Department of Environmental Management, provide funding to private organizations, government agencies and municipalities for trail projects.

Grants may be targeted toward construction of new trails or acquisition of land or easement for trails, maintenance of existing trails, development of trail-side and trail-head facilities, water trails, and other projects. At least 50% of the project cost must derive from other sources; grant amounts, not including the match, may range from \$1,000 to \$20,000.

Contact: Peter Brandenburg, Department of Environmental Management, Forests & Parks, 617-973-8740.

18.1.2 Grants for Natural Resource Protection

Lake and Pond Grant Program

The Lake and Pond Grant Program awards grants for the protection, preservation and enhancement of public lakes and ponds in the Commonwealth. A key goal of the program is to promote a holistic approach to lake management that is based on sound scientific principles and emphasizes the integrated use of watershed management, in-lake management, pollution prevention and education to provide long-term solutions to lake problems. A maximum grant of \$10,000 is available to eligible applicants on a 50/50 cost sharing basis. In the past, applications have been due on December 31 of each year.

Contact: Steve Asen, Department of Environmental Management, 617-626-1353.

Flood Management Grants

Authorized by the National Flood Insurance Reform Act of 1994, the Flood Mitigation Assistance (FMA) program makes cost-share grants available on a pre-disaster basis for flood mitigation planning and other floodplain projects, such as property acquisition, relocation of residents living in floodplains, and retrofitting of existing structures within a floodplain. Flood hazard mitigation plans, approved by the state and FEMA, are a prerequisite for receiving FMA project grants. Communities must contribute up to 25% of the cost for the planning and project grants with an FMA match of 75%. Annual application process is in the spring.

Contact: Department of Environmental Management, Hazard Mitigation Program, 617-973-8700.

Rivers and Harbors Grant Program

This grant program is administered by the Department of Environmental Management's Office of Waterways to address problems on coastal and inland waterways, lakes and great ponds. Projects funded under the program include channel and harbor dredging; pier, wharf, bulkhead, seawall, revetment and jetty repairs; coastal erosion control and beach nourishment; inland flood control; river cleanup and streambank stabilization, and other water-related projects. The grants require a 25% local match for dredging, and 50% for all other types of projects. Because there are practical limits to funding, projects requiring less than \$300,000 in state funds are preferred. The program also provides matching funds for the local cost share of U.S. Army Corps of Engineers projects within the Commonwealth.

Contact: Department of Environmental Management, Office of Waterways, 781-740-1600.

Heritage Tree Care Grant Program

This federally funded program offers competitive grants to communities with advanced tree care programs wishing to protect and enhance large or unique "heritage trees" located on public property or easements. In order to be designated a "heritage tree," the tree must have a diameter greater than 32 inches, be designated a champion in size for its species in Massachusetts, or have documented historic significance to the community or state. Awards are typically in the range of \$2,000 per project to support the work of certified arborists for the precise pruning, cabling, mulching and other restorative care for significant elder trees.

Contact: Department of Environmental Management, 617-973-8700.

Forest Stewardship Planning and Project Grants for Town Forestlands

The Massachusetts Forest Stewardship Program seeks to encourage landowners to practice long-term guardianship through the development of a management plan for their woodlands. Recognizing both the ecological and social values of our forests, the program is designed to improve wildlife habitat and forest aesthetics, to protect soil and water resources, and to increase the potential for high-quality wood products. In order to further these goals, grants are awarded to public and private organizations in two categories: 1) for the preparation of 10-year forest management plans and demonstration areas on town owned woodland. 2) for professional training and technical support to the forestry community for delivery of the stewardship message. Most grants range from \$1,500 to \$2,000.

Contact: Susan Campbell, Forest Stewardship Program, 413-256-1201.

Mass ReLeaf Grant Program

The MASS ReLeaf grant program is designed to foster partnerships between business, government and nonprofit groups to raise money for the planting and care of public trees. Since 1989, the program has raised more than \$2 million through various corporate-giving and federal campaigns, leveraged over \$2.5 million of in-kind services, and planted more than 12,000 trees. The goals of the program are to help communities purchase trees to be planted for energy conservation, screening, community gateway or parking lot enhancement, or to offset urban pollution; to expand and engage a network of community leaders, government officials and corporate partners through educational and promotional events and projects; and to assure long-term tree survival by emphasizing proper tree selection, planting, aftercare and maintenance.

Contact: Edith Makra, Department of Environmental Management, 617-973-8700.

18.1.3 Programs for Historic Resource Protection

Historic Landscape Preservation Grant Program

The Historic Landscape Preservation Grant Program is a state-funded competitive grant program established in 1997 to support the preservation and restoration of historic landscapes listed or, in certain instances, eligible for listing on the State or National Register of Historic Places. Many municipal landscapes across the state are over a century old and continue to suffer from deferred maintenance, intrusive additions and limited ability of municipalities to fund rehabilitation projects.

Municipalities may apply for grants for work related to inventory and planning of historic resources; construction projects (rehabilitation, restoration, etc.); preservation maintenance; and public education and stewardship. The grant amount is up to \$50,000 per year per project for planning, inventory, education and stewardship projects, and up to \$100,000 per year for construction or preservation maintenance projects. Municipalities must provide a cash match of 30-48% of the total project cost. In the past, the deadline for applications has been May 15 of each year.

Contact: Katy Lacy, Department of Environmental Management, Office of Historic Resources, 617-626-1379.

Preservation Restrictions

Preservation Restrictions are authorized by Chapter 184, Sections 31-33 of the General Laws, and protect historic and archaeological properties from changes that may be inappropriate. A Preservation Restriction (easement) on a property restricts present and future owners from altering a specified portion of that building, structure, or site. A restriction can run for a few years or in perpetuity and may be included as

part of the property deed. Preservation restrictions can be donated or purchased by a government body or private preservation organization and are enforced by the holder of the restriction. Charitable donations of easements on historical buildings or archaeological sites may qualify for federal income tax deductions.

Contact: Massachusetts Historical Commission, 617-727-8470.

Survey and Planning Grants

Survey and Planning Grants provide 50 percent matching federal funds for the preparation of community surveys, preservation plans, preparation of historic district studies and legislation, archaeological surveys, nominations to the National Register, and educational preservation programs. Eligible applicants are local historical commissions, Certified Local Governments, local and state agencies, educational institutions, and private organizations.

Contact: Massachusetts Historical Commission, 617-727-8470.

18.2. User Fees and Impact Fees

User fees and impact fees are mechanisms that allow a community to recapture costs associated with providing municipal services. These fees are typically imposed at the time that a community grants approval for new development, or when existing development is provided with new public infrastructure. User fees and impact fees are somewhat complicated legally. While some of the legal issues are summarized below, a fuller and more detailed review would be required by Shrewsbury's Town Council if the Town wished to pursue either option.

18.2.1 User Fees

Constrained by the limitations of Proposition 2½, voter resistance to increased taxes and reductions in federal assistance, local governments in Massachusetts are exploring alternative funding sources and mechanisms to pay for the impacts of new development. User fees are fees imposed for goods and services that a governmental body provides, and have been used extensively in Massachusetts.

User fees are not feasible for all municipal services, but have been used successfully for services such as refuse collection and/or disposal, water service, sewer service, and recreation. In Shrewsbury, user fees are currently in place for municipal water, sewer, electricity and Cable TV services.

User fees must relate the purpose and the magnitude of the fee to the nature of the service that is being provided to the user. Otherwise, the fees may be subject to legal challenge on the basis that they are, in fact, disguised taxes. In general, the Massachusetts courts have deferred to the municipality's characterization of user fees as such. However, the true nature of a user fee must be determined by its operational effect.

If the Town wishes to consider establishing additional user fees in the future (such as fees for the collection and disposal of trash and recycling), it should consult its Town Council to ascertain that the Town has authority to implement such fees. Many fees have limits set by state law. However, recent state legislation has broadened municipal options by increasing fee limits or allowing local officials to set fees and charges (see The Review Fees Statute, Chapter 593 of the Acts of 1989).

18.2.2 Impact Fees

Impact fees are normally established in order to compensate a municipality for the cost of providing specific services to accommodate new development. Whereas with user fees the payer of the fee must

receive benefits or services for which the fee is earmarked (e.g., sewer service or trash collection), impact fees are usually paid by a developer for the aggregate impact of a new development, even though not all of the residents of the new development will necessarily use all the services that the impact fee is intended to fund (e.g., schools). Impact fees can apply either to all as-of-right development (i.e., no minimum thresholds), or to development above a specific threshold in connection with the granting of a discretionary special permit, where, in effect, some density or incentive is offered in return for the developer providing a public benefit (which could be the “in kind” payment of a fee). The first approach of requiring impact fees for all new developments is almost certainly not authorized in Massachusetts under current state law.

The second approach appears to have some authority under Chapter 40a of the General Laws, although there are no clear statutory or case law guidelines on which to base a legal defense. Several Massachusetts municipalities require some form of “in kind” exaction from developers who are granted a special permit for their project. The basis for these exactions is Section 9 of Chapter 40a, which provides that special permits may authorize increases in density or intensity of use provided that the applicant, as a condition of the special permits, provides certain amenities, including “certain open space, housing for persons of low or moderate income, traffic or pedestrian improvements, installation of solar energy systems, protection for solar access, or other amenities.” However, Massachusetts courts have not considered or approved local bylaws that require the payment of fees, rather than the provision of actual “amenities,” in the context of this language.

While Massachusetts has not yet adopted direct statutory authority to create such an impact fee system, other states, such as Florida, have widely used impact fees. Based on the Florida model, a system of impact fees, were it to be implemented in Shrewsbury in the future, should include the following:

- The municipality should establish a capital budget program that justifies the need for the specific improvement(s) in question (e.g., school, road, park, etc.) and the realistic cost for the improvement(s).
- The municipality should develop a fair and reasonable cost allocation method to share the costs equitably.
- The municipality should establish a separate or so-called “enterprise” fund to hold the fees until spent.
- The municipality should build the facility or improvement necessitated by the development within a reasonable time (say, five years) or return the funds to the developer.

Shrewsbury should not necessarily adopt an impact fee system based on the above principles. Several pieces of legislation related to impact fees have recently been considered by the Massachusetts legislature, and similar legislation is likely to be considered again. The Town of Groton recently filed legislation to allow impact fees. If and when one of these proposals becomes law, Shrewsbury would have the authority to adopt an impact fee system which would be legally defensible.

Appendix A Demographic Profile

Population

Much of the following information comes from the 1990 U.S. Census. Estimates for 1998 and forecasts are based upon town-level research provided by the Central Massachusetts Regional Planning Commission. Although the focus is on Shrewsbury, data on adjacent communities and regional groups is included for comparative purposes, so that a sense of Shrewsbury's role in the region is provided. Shrewsbury is a part of the Central Massachusetts Regional Planning Commission (CMRPC), which also includes Auburn, Barre, Berlin, Blackstone, Boylston, Brookfield, Charlton, Douglas, Dudley, East Brookfield, Grafton, Hardwick, Holden, Hopedale, Leicester, Mendon, Millbury, Millville, New Braintree, North Brookfield, Northborough, Northbridge, Oakham, Oxford, Paxton, Princeton, Rutland, Shrewsbury, Southbridge, Spencer, Sturbridge, Sutton, Upton, Uxbridge, Warren, Webster, West Boylston, West Brookfield, Westborough, and Worcester.

Size and Growth

The 1998 population in Shrewsbury, as estimated by the Census Bureau, was 27,791 people, showing an increase of 3,645 people since 1990, an increase of more than 15%. The CMRPC region grew by 16,140 residents, from 482,436 in 1990 to 498,576 in 1998. This corresponds to an increase of 3.3%.

The Population forecasts included herein are from CMRPC's *2020 Growth Strategy for Central Massachusetts Report*, completed in 2000. The CMRPC methodology for developing population forecasts for the Central Massachusetts communities included:

**Table A-1
Population Projections for Town of Shrewsbury (2000 - 2020)**

	Shrewsbury	% Change	CMRPC Region	% Change
2000	29,034	-	517,954	-
2010	30,050	3.5	545,067	5.2
2020	30,812	2.5	567,215	4.1

Sources: CMRPC

Households

The number of households in Shrewsbury increased from 9,302 in 1990 to 11,668 in 2000, an increase of 25.4% in this period, compared to an overall population growth of 20.2%. The number of persons per household is expected to continue to decline in the town, mirroring state and national trends. In 1990, the average household size in Shrewsbury was 2.57, as compared to 2.58 for the state and 2.63 for the nation.

Table A-2
Household Projections for Town of Shrewsbury (1990 - 2020)

	Households	Persons Per Household	% Change in Households	Yearly Avg. Increase Households
1990	9,302	2.57		
2000	11,668	2.48	25.4	237
2010	12,323	2.44	5.6	66
2020	12,899	2.39	4.7	58

Sources: U.S. Census, CMRPC.

In 1990 approximately 6,536, or 70.3%, of the town's households consisted of families. By far the majority of family households, 5,588 or 85.5%, were married-couple families. The remainder were divided between male-headed families (3.8%) and female-headed families (10.7%). The proportion of non-family households in Shrewsbury represented 29.7% of total households. The majority of these (2,287 households) consisted of single-householders living alone, and of these, 917 households, or 9.9% of total households, consisted of a single householder 65 years and over living alone.

Income Distribution

The median household income in Shrewsbury in 1990 was \$44,248. This figure is about 24% higher than the 1990 median household income for Worcester County, which was \$35,774 and 20% higher than the state median income of \$36,952.

Of the persons for whom poverty status was determined, the number of persons in 1989 whose household income was below the poverty level was 902 persons, or 3.8%. The percentage of persons known to living below the poverty level in Shrewsbury was considerably lower than the comparable figure for Massachusetts (8.9%). Income and poverty statistics are not regularly updated by government agencies; more recent figures will not be available until the next U.S. decennial Census is released.

Table A-3
Income Distribution - 1990

	Households	%
Less than \$10,000	819	8.7
\$10,000 - \$24,999	1,487	15.9
\$25,000 - \$49,999	2,936	31.3
\$50,000 - \$99,999	3,233	34.5
\$100,000 or more	895	9.6

Source: U.S. Census

Age Characteristics

The most substantial population growth has been among older age groups. There was an increase of 27% in the number of residents in the 45 to 64 year old age range from 1980 to 1990, while the 30 to 44 year old age group increased by 23%. Although there was an increase in overall population, there was

decrease of 13% in the 15 to 19 year old age cohort, while the number of children under the age of 15 also declined slightly. There was a 31% increase in persons 65 and over between 1980 and 1990.

According to population forecasts (MISER, 1999), the number of persons aged 45 and older is expected to grow by more than 80% by the year 2010, while the numbers of children and teenagers are expected to grow substantially as well. This suggests that Shrewsbury can expect to see an influx of young families over the next decade, while the numbers of young adults will actually decline.

**Table A-4
Age Distribution 1990**

	Persons	%
Under 5	1,491	6.2
5-17	3,841	15.8
18-20	835	3.5
21-24	1,259	5.2
25-44	8,203	34.0
45-64	5,145	21.3
65 & over	3,372	14.0
Total	24,146	100.0

Sources: U.S. Census

Other Social Characteristics

The educational attainment of residents in Shrewsbury is higher than both the State average and the Worcester County average for completing college. Approximately 35% of Shrewsbury residents over the age of 25 have a bachelor's degree or higher. (See Table A5.)

**Table A-5
Educational Attainment (1990)**

	Persons 25 years and over	% Completed High School	% Completed 4 Years College	% Completed 4+ Years College
Shrewsbury	16,721	24.3	20.8	15.8
Worcester Co.	457,888	30.7	14.1	8.2
Massachusetts	3,962,223	29.7	16.6	10.6

Source: 1990 U.S. Census

Appendix B Business Profile

The U.S. Census Bureau recently released the 1997 Economic Census, which is useful in identifying the specific industries in Town and their relative significance. One method of evaluating significance is to identify the share of employment that a certain sub-industry represents within a community. Other factors can also be revealing, such as the annual sales or receipts of the industry, the annual payroll, and the average wage being paid to employees in that industry or sub-industry. See Tables B-1 through B-5 for these summaries.¹

**Table B-1
Retail Establishments**

Retail Type	Number of Establishments	Sales (\$1,000)	Annual Payroll (\$1,000)	Number of Paid Employees	Average Wage
Motor vehicle and parts dealers	20	\$28,189	\$3,339	127	\$26,291
Furniture and home furnishings	6	\$26,663	\$1,790	175	\$10,229
Electronics and appliance stores	5	\$15,336	\$1,074	33	\$32,545
Building material and garden equipment and supplies	9	\$89,523	\$7,797	406	\$19,204
Food and beverage stores	16	\$59,511	\$6,269	479	\$13,088
Health and personal care stores	9	\$17,125	\$1,828	134	\$13,642
Gasoline stations	8	\$38,288	\$1,302	74	\$17,595
Clothing and clothing accessories	17	\$17,725	\$1,791	267	\$6,708
Sporting goods, hobby, books, and music	9	\$13,060	\$1,800	147	\$12,245
General merchandise	1	WH ²	WH	250-499 ³	NA ⁴
Miscellaneous retailers	18	WH	WH	100-249	NA
Nonstore retailers	4	WH	WH	0-19	NA
Total	122	\$406,525	\$36,809	2,380	\$15,466

Source: U.S. Census Bureau. Economic Census, 1997.

¹ The industry breakdowns in this U.S. Census information are not directly comparable to the employment information presented in Table 4-4, which is provided by the Massachusetts Division of Employment and Training. Nevertheless, the information is useful in identifying sub-industry information on wages, employment, and number of establishments.

² Information has been withheld to avoid disclosing data of individual companies.

³ Where information has been withheld, employee estimate ranges are provided.

⁴ Not available or not comparable.

**Table B-2
Wholesale Trade Establishments**

Wholesale Type	Number of Establishments	Sales (\$1,000)	Annual Payroll (\$1,000)	Number of Paid Employees	Average Wage
Durable Goods	41	WH	WH	250-499	NA
Hardware & plumbing & heating equipment & supplies wholesale	7	\$11,582	\$1,318	33	\$39,939
Nondurable Goods	10	WH	WH	20-99	NA
Wholesale Trade Sector Total	58	\$144,458	\$13,507	388	\$34,812

Source: U.S. Census Bureau. Economic Census, 1997.

**Table B-3
Selected Service Industry Establishments**

Industry Type	Number of Establishments	Receipts (\$1,000)	Annual Payroll (\$1,000)	Total Paid Employees¹	Average Wage
Administrative & Support Services	27	\$11,873	\$5,481	187	\$29,310
Arts, Entertainment, and Recreation	9	\$4,994	\$998	111	\$8,991
Healthcare and Social Assistance	46	\$37,268	\$14,744	618	\$23,858
<i>Ambulatory Health Care Services*</i>	<i>37</i>	<i>\$22,180</i>	<i>\$7,644</i>	<i>219</i>	<i>\$34,904</i>
Educational Services	6	\$5,560	\$929	69	\$13,464
Broadcasting and Telecommunications	6	\$10,106	\$2,312	61	\$37,902
Real Estate and Rental and Leasing	26	\$19,200	\$4,110	115	\$35,739
<i>Real Estate</i>	<i>21</i>	<i>\$13,994</i>	<i>\$2,761</i>	<i>75</i>	<i>\$36,813</i>
<i>Rental and Leasing Services</i>	<i>5</i>	<i>\$5,206</i>	<i>\$1,349</i>	<i>40</i>	<i>\$33,725</i>
Accommodation and Foodservices	50	WH	WH	WH	NA
<i>Accommodation</i>	<i>2</i>	<i>WH</i>	<i>WH</i>	<i>20-99</i>	<i>NA</i>
<i>Foodservices</i>	<i>48</i>	<i>\$26,936</i>	<i>\$7,813</i>	<i>783</i>	<i>\$9,978</i>
Other Services	49	\$12,772	\$3,315	198	\$16,742
<i>Repair and Maintenance</i>	<i>22</i>	<i>\$8,736</i>	<i>\$2,268</i>	<i>114</i>	<i>\$19,895</i>
<i>Personal and Laundry Services</i>	<i>27</i>	<i>\$4,036</i>	<i>\$1,047</i>	<i>84</i>	<i>\$12,464</i>

* Italicized lines are subsets of the preceding items.

Source: U.S. Census Bureau. Economic Census, 1997.

Overall, employees working at one of Shrewsbury's 39 manufacturing establishments were paid an average of \$49,050. The 734 production workers employed at these establishments averaged considerably less, making approximately \$21,857. The overall annual payroll for the manufacturing sector is the highest of all sectors at \$102.7 million. The retail sector was second at \$36.8 million.

Based on information provided by the U.S. Census, the best-paying positions within the Town are in the professional, scientific, and technical service sector. The 571 employees within this sector were paid an average of \$51,088. However, these numbers are slightly skewed by several particularly well-paying sub-industries. Those employed in computer systems design were paid an average of \$66,000 while those employed in management, scientific and technical consulting made an average of \$111,125.

**Table B-4
Manufacturing Establishments**

Industry Type	Number of Establishments	Number with 20 or more Employees	Total Employment	Annual Payroll (\$1,000)	Average Wage
All Employees					
Manufacturing (Total)	39	11	2,094	\$102,710	\$49,050
<i>Computer and Electronic Mfg.</i>	4	2	1000-2499	WH	NA
Production Workers Only					
Manufacturing (Total)	39	11	734	\$16,043	\$21,857
<i>Computer and Electronic Mfg.</i>	4	2	WH	WH	NA

Source: U.S. Census Bureau. Economic Census, 1997.

**Table B-5
Professional, Scientific, and Technical Service Establishments**

Industry Type	Number of Establishments	Receipts (\$1,000)	Annual Payroll (\$1,000)	Total Paid Employees	Average Wage
Professional, Scientific, and Technical Services	571	\$30,312	\$16,348	320	\$51,088
<i>Architectural, Engineering and Related Services</i>	10	\$7,264	\$3,951	113	\$34,965
<i>Specialized Design Services</i>	3	WH	WH	0-19	NA
<i>Computer Systems Design and Related Services</i>	21	\$13,972	\$9,306	141	\$66,000
<i>Management, Scientific, and Technical Consulting</i>	6	\$2,890	\$889	8	\$111,125

Appendix C

District Study Transcriptions

As part of the Master Plan, six District Studies were prepared in order to focus attention on specific parts of Shrewsbury where planning issues needed to be addressed at a finer scale. These areas included:

- Route 9 West of Maple Ave.
- Route 9 East of Maple Ave.
- Route 20
- The Town Center
- The Lake Quinsigamond Shoreline
- Northwest Shrewsbury.

The District Studies highlight important issues in each district such as aesthetics, mix of uses, vacant land or buildings, traffic safety, and pedestrian safety. The Studies do not make specific recommendations, but instead are intended to highlight issues and opportunities so that the Town can develop short-term and long-term steps to improve each of the districts.

Each of the District Studies consisted of:

- an annotated map and aerial photograph of the study area
- photos and text with information on specific sites in the study area
- analyses of zoning, transportation and other factors relevant in the district

In order to provide the needed level of detail, most of these studies were printed at a scale of 1"=200', so that the studies are too large to include in the Master Plan document. However, this appendix provides transcriptions of the text that is contained in each of the District Studies.

1. Summary of the Town Center District Study

This brief report provides a transcription and summary of the Town Center District Study. The Town Center District Study consists of:

- an annotated map and aerial photograph of the study area
- photos and text with information on specific sites in the study area
- analyses of zoning, transportation and other factors relevant in the district

In order to provide the needed level of detail, the district studies were prepared on large boards. These district studies can be reviewed, upon request, at the Town's Engineering Department. While examining these boards is the best way to read and understand the district studies, for the sake of convenience, the text from the Town Center District Study is also transcribed below. For text that references a specific point on the map, the location of this reference is indicated in parentheses.

Snapshot of the Issues & Opportunities

1. Village vs. suburban "feel" for town center
2. Traffic congestion
3. Pedestrian safety and pedestrian amenities
4. Mix of uses/allowed uses
5. Location and amount of parking
6. Zoning
7. Aesthetics

Zoning Analysis

The Limited Business district allows a range of uses with a minimum lot size of 12,500 square feet, minimum frontage of 100 feet, and minimum front, side and rear setbacks of 15 feet. Allowed residential uses within the Limited Business district include single-family dwellings, boarding houses, and in-law apartments. Allowed institutional uses include public and parochial schools, playgrounds, churches, parish houses, museums, nursing homes, assisted living residences, medical buildings, charitable institutions, and non-profit research laboratories. Allowed business uses include retail stores and service establishments, gift shops, offices, banks, limited access banking machines, and eat-in restaurants. Allowed research and industrial uses include printing or publishing establishments.

The range of uses allowed in the Limited Business district is not necessarily conducive to establishing a village commercial area. For example, uses such as medical buildings and large retail stores would be out of character with much of the town center. Conversely, bed and breakfast establishments, which already exist in the town center, are not allowed. In terms of dimensional requirements, addition flexibility might be beneficial in promoting village-style development. For example, the 15' setback requirement essentially prohibits buildings from abutting the sidewalk. The lack of setback is one of the defining characteristics of the prominent brick building on the southwest corner of Main Street and Route 140.

Traffic and Circulation

The Route 140/Main Street intersection is probably the worst traffic bottleneck in Shrewsbury. In addition to local traffic, these roads (particularly Route 140) carry large amounts of regional traffic including truck traffic. During the Master Plan process, some citizens have suggested constructing a bypass to reduce

congestion at this intersection. However, this would be expensive and would create environmental and neighborhood impacts.

As an alternative to constructing a bypass, the Town has hired Beta Engineering to prepare an intersection improvement plan. The current proposal is to widen the intersection to provide an additional approach lane on Route 140 southbound and on Main Street westbound. Each of these approaches would then have dedicated right-turn, left-turn, and through travel lanes. In addition to these improvements, new signal timing would be implemented to allow a left-turn-only signal phase. In order to widen the intersection, land would need to be taken from the town common as well as the grassy area in front of the library. The Town has reviewed these preliminary plans with MassHighway, who will need to approve and fund the final design and construction.

Alternative Futures for the Town Center

Shrewsbury's existing town center is a combination of pedestrian-oriented village-style development and auto-oriented suburban-style development.

Shrewsbury's current town center contains two different styles of development. At the heart of the town center (along Main Street between Maple Avenue and Route 140), small shops and the town common create a village feel. Elsewhere, particularly along Maple Avenue, development is more characteristic of a suburban strip.

In the future, Shrewsbury can direct development more toward one style or the other through its zoning regulations (see above) and other Town policies and public investments. For example, zoning regulations aimed at promoting village-style development might establish a maximum setback distance, prohibit auto-oriented uses, and require design review. Public investment to support village-style development might include providing an off-street municipal parking lot, sidewalk improvements, and streetscape improvements. To further enhance village-style development, improvements to the Town Common, Library area, and areas adjacent to the Town Center roadways should be supported. These improvements may include, for example, ornamental lighting, landscaping, and similar village-style street furniture.

Photo #1a (small shops in the town center): Elements of pedestrian-oriented village-style development include small building setbacks (or none at all), a mix of small retail and service establishments, and parking either on the street or behind the building.

Photo #1b (businesses along Maple Avenue): Elements of auto-oriented suburban-style development include larger building setbacks and parking in front of the building. Pedestrians must navigate curb cuts and parking lots to reach the building.

Photos

#2a (sidewalk on Main Street near Colton Lane) and 2b (sidewalk on Maple Avenue): A safe and attractive sidewalk is essential for making the town center pedestrian friendly. The sidewalk on the left (on Main Street) clearly delineates the pedestrian area while the sidewalk on the right (on Maple Avenue) does not.

#3a (Mobil station on Maple Avenue) and #3b (Texaco station on Maple Avenue): Streetscape improvements by individual business owners go a long way toward improving the appearance of a street as viewed by drivers or pedestrians. The Mobil station (top photo) provides a well-defined concrete sidewalk delineated by landscaped islands. At the Texaco station down the street (bottom photo) the

sidewalk is not clearly differentiated from the roadway. Wide curb cuts make walking dangerous, and there is no landscaping to offer visual relief.

#4a (Boylston Street along the town common) and #4b (Maple Avenue near Empire Dry Cleaners): Within the heart of the town center, utility lines have been buried underground, creating an attractive and uncluttered appearance (top photo). Overhead utility lines remain on portions of the streets feeding into the town center -- Route 140, Maple Avenue and Main Street (bottom photo).

#5 (View down Chase Terrace from Main Street): Residential dwellings on Chase Terrace directly abut commercial uses along Main Street. In addition, the Limited Business zone extends several hundred feet back from Main Street -- well into this residential area. This zoning invites incompatible uses as well as conflicts among residents, landowners, businesses, and developers.

#6 (Vacant lot on Main Street): This vacant lot, located in the heart of the Town Center, currently contains some parking spaces and the remains of a demolished building. While the parking on this site serves an important function for area businesses, the lot creates a significant “gap” in the town center streetscape. The parcel is privately owned, and the Town is not aware of any current redevelopment plans for the site.

#7 (Sumner House Bed and Breakfast adjacent to the town common): This Bed and Breakfast establishment located near the Town Common is an historic house that helps define the character of the town center. Regulations in the Limited Business district allow boarding or rooming houses for up to four guests, provided that the house is also occupied as a private residence. However, other inns or B&Bs are not allowed.

#8 (Entrance to UMass Medical parking lot from Main Street): The large parking lot for this medical building creates a major gap in an otherwise intact streetscape of small stores, houses and professional offices.

Text

#A (Intersection of Route 140 and Main Street): Many residents have identified pedestrian safety at the Route 140/Main Street intersection as being a problem, particularly because of turning traffic. Library patrons who park at the Medical Center across the street during off-hours must cross this intersection to reach the library.

#B (Shrewsbury Public Library): Although the Library is in good condition, it is experiencing significant space shortages to meet the needs of expanding services and programs, particularly for children. As a result of these shortages, the Library no longer meets state requirements for required seats per capita of population. Also, its parking lot is often inadequate to meet parking demand.

To remedy these and other deficiencies, the Library will need to make improvements both to satisfy immediate needs and to plan for its long term future. Consultants hired by the Library in 1999 to conduct a space needs assessment study recommended the following:

- In the short-run (3-5 years), to address some of the Library’s current deficiencies, the Library should plan for, design and seek funding for approximately \$350,000 to reconfigure the current Library space to provide adequate children’s service space and other needed spaces.
- In the intermediate to long range, the consultants recommended an expansion of the Library to twice its present size to meet the demands of future population growth. It is not clear that an

addition of this size is feasible at the present Library site. Therefore, alternative site options may have to be explored as well, including constructing a branch library in another precinct of town in lieu of or as a complement to a major expansion at the existing Library site. If the Library is not expanded at its current site and is instead relocated elsewhere, the town will have to plan for the reuse of the existing Library property. As an example, it could perhaps be converted for a needed indoor recreation / community center, or alternatively, leased to private enterprise. In either case, the Town could retain ownership of the land.

#C (Masonic Property off of Main Street and Prospect Street): The Town of Shrewsbury owns the Masonic Property, a 74-acre piece of land located between Boylston and Prospect Streets. The Town has not yet planned the use of this land. During the Master Plan process, some citizens suggested that the land should be developed with active recreational facilities, while others suggested that it should be reserved for future expansion for the cemetery. Many, however, would like to see the land left in its natural state.

2. Summary of the Route 9 West District Study

This brief report provides a transcription and summary of the Route 9 West District Study. The Route 9 West District Study consists of:

- an annotated map and aerial photograph of the study area
- photos and text with information on specific sites in the study area
- analyses of zoning, transportation and other factors relevant in the district

In order to provide the needed level of detail, the district studies were prepared on large boards, which can be reviewed, upon request, at the Engineering Department offices in Town Hall. Examining these boards is the best way to read and understand the district studies. However, for the sake of convenience, the text from the Route 9 West District Study is also transcribed below. For text that references a specific point on the map, the location of this reference is indicated in parentheses.

Snapshot of the Issues & Opportunities

1. Excessive curb cuts create traffic hazards
2. Retail vacancies
3. Inconsistent signage
4. Pedestrian unfriendly
5. Lakefront design & access
6. Aesthetics (including landscaping)
7. Depth of business zoning
8. Interface between business & residential areas

Alternative Futures for Route 9 West

Auto-oriented shopping centers or a “Main Street” shopping district? Shrewsbury must choose one of two different visions for Route 9 West:

- The first option, shown on the left, involves creating a downtown shopping street with pleasant sidewalks, slower traffic, and parking at the rear of buildings. In order to achieve this option, the Town will need to reduce setback requirements, require parking to be located beside or behind buildings, and encourage smaller-scale and mixed-use development.

- The second option, shown on the right, is to create an auto-oriented shopping area following the model of recent developments that are relatively attractive (such as Quinsigamond Plaza). As redevelopment occurs, this option could create a “greener” and more manageable district. However, it would not be pedestrian friendly and it would feel more like a highway business zone than a downtown shopping street. Current zoning regulations with 50’ and 75’ setbacks in the LB and CB districts, respectively, will create this type of pattern over time if no zoning changes are made.

Main Street Shopping District

Photo (small shops on south side of Route 9): A “Main Street” shopping district would include shops close to the street, with parking around the back, hidden from view. In this photo, store windows abut the sidewalk, providing visual interest for pedestrians. Business owners are encouraged to contribute to the streetscape by planting flowers and providing other amenities such as awnings or benches.

Photo (row of shops in the town center): Over time, a “Main Street” approach could begin to look more like this row of buildings in the town center. On the deeper CB-zoned parcels, larger retailers could be

allowed, providing they respected the district character by creating an attractive street edge and locating parking behind the building.

Auto-Oriented Shopping Centers

Photo (Quinsigamond Plaza): Design, landscaping, signage and curb cut standards have dramatically improved the quality of new development along Route 9. If the Town pursued the auto-oriented approach, new development might look something like this in the deeper CB-zoned areas.

Photo (CVS on Route 9 at Harrington): The CB district requires a 75' front setback for new development. This pattern is convenient for drivers; however, pedestrians must navigate a sea of parking to reach the store. The large parking lot, though softened by landscaping, makes walking in the area unappealing.

Photos

#1 (Burger King on Route 9): Fences between adjacent properties discourage pedestrian movement. Creating pedestrian and vehicular connections between nearby stores could help to ease traffic congestion and make Route 9 more pedestrian friendly.

#2 (Quinsigamond Plaza): Design, landscaping, signage and curb cut standards have dramatically improved the quality of new development along Route 9. If the Town pursued the auto-oriented approach, new development might look something like this in the deeper CB-zoned areas.

#3 (Quinsigamond Plaza): A single entrance/exit is provided to Quinsigamond Plaza. Internal circulation distributes vehicles to the parking areas. This design minimizes traffic conflicts on Route 9 and maximizes safety. Contrast with older shopping centers such as Fairlawn Plaza.

#4 (Route 9 at Lakeview): Vehicles exiting this parking lot are required to back directly onto Route 9 or its shoulder, creating an unsafe condition for through traffic. This situation should be rectified, and avoided in all new developments.

#5 (CVS on Route 9 at Harrington): The CB district requires a 75' front setback for new development. This pattern is convenient for drivers; however, pedestrians must navigate a sea of parking to reach the store. The large parking lot, though softened by landscaping, makes walking in the area unappealing.

#6 (Route 9 at Harrington): A wide intersection, no crosswalk, and no pedestrian signalization make walking in this area a dangerous and unpleasant endeavor.

#7 (Ground Round on Route 9 at Harrington): Shrewsbury's zoning requires one parking space per 150 square feet of retail space, and three spaces per four restaurant seats. This is more than is typically recommended, and appears to be excessive for many businesses in Shrewsbury. Excess parking creates visual blight and water pollution, and precludes better and higher-value uses of the land.

#8 (Route 9 east of Maple Ave.): Because of its location, the parcel on the northeast corner of Route 9 and Maple Avenue functions as a "gateway" to the Route 9 west shopping district. Currently this gateway consists of trailer parking and a large billboard--an ugly welcome to Shrewsbury's main shopping district.

#9 (Route 9 at Edgewater Ave.): Residences abut commercial buildings with little or no buffering in several parts of the Route 9 West area, particularly the LB district, where commercial parcels are shallow.

#10 (Route 9 at Edgewater Ave.): Several elements contribute to the bleakness of this older commercial strip. These include a poorly delineated parking area with no landscaping and no differentiation in materials for the sidewalk.

#11 (Route 9 west of Plainfield): The parking lot and sidewalk are a continuous mass of asphalt, differentiated only by striping. As a result, vehicles hang over the sidewalk, making it very narrow in places. A more pedestrian-friendly design would utilize different materials for the sidewalk and separate it from the parking lot by a landscaped strip. In addition, note that the sidewalk is close to speeding cars on Route 9, contributing further to pedestrian unfriendliness. Again, landscaping, or even a row of parked cars, provides a welcome buffer between the street and the sidewalk.

#12 (White City West): Inconsistent signage contributes to visual clutter on this stretch of Route 9. Compare the eclectic White City signage to the more visually unified signage at Quinsigamond Plaza (photo 2, at left).

#13 (White City West): White City West is serviced from the western side of the building; as a result the plaza “turns its back” on the lake with Dumpsters and loading docks. Public lake access is unavailable from this site.

Text

#A (East Side Mario’s restaurant on Route 9 at the White City Bridge): Outdoor dining at East Side Mario’s overlooks Lake Quinsigamond. The Town may want to promote additional waterfront restaurants and other establishments that offer public access to the lakefront.

#B (Behind Burger King and Boston Market): Parking lots for East Side Mario’s, Boston Market and Burger King are all connected at the rear of the property. This type of “internal circulation” allows vehicles to travel from business to business without using Route 9, thus reducing congestion on this main road.

#C (Route 9 at Elm Street): This site is planned to be used for a Subaru dealership. Vehicle sales establishments create a “highway business” look and feel that is incompatible with other uses in the area.

#D (Bailey Road): The established residential neighborhood on Bailey Road and Elm Street is zoned Commercial Business. This zoning invites incompatible uses as well as conflicts among residents, landowners, businesses, and developers.

#E (Fairlawn Plaza): Multiple curb cuts provide access to Fairlawn Plaza from Maple Avenue. Large, closely-spaced curb cuts such as these create dangerous traffic conditions both on Maple Avenue and within the parking lot. Contrast with the single access point to Quinsigamond Plaza, which is safer and more attractive.

#F (small shops on south side of Route 9): Current zoning regulations require a 50’ front setback in LB districts along Route 9. Since many of the business parcels on the south side of Route 9 are only 100’ deep, this regulation essentially prohibits redevelopment of these parcels with any economically feasible use. The setback requirement also virtually requires parking to be located in front of the buildings, thus perpetuating the strip commercial appearance of this area.

#G (small shops on south side of Route 9): Numerous residences are located within the Limited Business district, a pattern which invites additional conflicts between residential and commercial uses. Any attempt

to deepen commercial uses in the LB district over time would likely be thwarted by the small (and shallow) parcels, few of which are in common ownership.

#H (White City Plaza): Buildings and parking at White City West and White City East are laid out in a confusing pattern. The large unlandscaped parking fields create a bleak appearance.

#I (Route 9 at South Quinsigamond Avenue): MassHighway plans to widen Route 9 at the intersection with South Quinsigamond Avenue would take a portion of the White City West parking lot. This, in turn, would place the cinema closer than 75' to the roadway, making it a nonconforming use.

#J (White City Plaza): Vacancies continue to plague both White City West and White City East. Cherry and Webb, CVS, and Bradlees are all former tenants that have either closed or relocated.

3. Summary of the Route 9 East District Study

This brief report provides a transcription and summary of the Route 9 East District Study. The Route 9 East District Study consists of:

- an annotated map and aerial photograph of the study area
- photos and text with information on specific sites in the study area
- analyses of zoning, transportation and other factors relevant in the district

In order to provide the needed level of detail, the district studies were prepared on large boards, which can be reviewed, upon request, at the Engineering Department in the Town Hall. Examining these boards is the best way to read and understand the district studies. However, for the sake of convenience, the text from the Route 9 East District Study is also transcribed below. For text that references a specific point on the map, the location of this reference is indicated in parentheses.

Snapshot of the Issues & Opportunities

1. Transportation safety
2. Aesthetics
3. Making the best use of available land
4. Zoning for the desired mix of uses

Zoning Depths

The Commercial Business and Limited Industrial districts in the Route 9 corridor are generally deep enough to accommodate a wide variety of developments. The 600' CB district is deep enough to accommodate a large "big box" type retail store, such as the Stop & Shop and Staples, both of which are in a 600'-deep district. Large office buildings require about 1000' of depth (Compaq is about 800' deep from South Street and Quantum is 1000' deep from Chestnut Street), and could fit in most of the LI districts. Zoning depths in the Route 9 East corridor are generally constrained by abutting residential neighborhoods and other developed uses.

Transportation Issues and Opportunities

1. CURB CUTS & SHARED ACCESS POINTS. Excessive and poorly defined curb cuts are not as much of a problem in Route 9 East as elsewhere in Shrewsbury. New developments should provide internal connections to adjacent areas to minimize the amount of vehicles exiting and entering Route 9. The internal connection between Stop & Shop and Staples is a good model.
2. ACCELERATION/DECELERATION LANES: Because Route 9 East is a high-speed road, vehicles must be given sufficient room to slow down and speed up when accessing land along Route 9. In several places there are no lanes provided for this to occur, and shoulders are too narrow to safely serve this function.
3. AN ACCESS ROAD? A local access road that parallels Route 9 to service businesses along the highway is probably infeasible given the steep topography directly adjacent to portions of the road.

Parcels with Significant Development or Redevelopment Potential

1. NW corner of Route 9 & Oak Street. Parcel 33-43. Steep topography adjacent to Route 9 may limit access and development.

2. Glavin Center. Parcel 33-82. Owned by the Commonwealth. Despite steep topography and possibly wetlands, there still appears to be significant development potential.
3. Site of former HQ next to Staples. Parcel 34-24-1. Needs new tenant.
4. SE corner of Routes 9 & 140. Parcel 34-41. Chapter 61A. Partially wet.
5. Several lots. Parcels 34-76-x. Very steep topography and access difficulty may render these parcels undevelopable.
6. LI-zoned Parcel 34-45.
7. CB-zoned Parcel 34-50-1. Chapter 61A. Stream on site.
8. Parcel 35-40, just east of Yorkshire Terrace. Dropoff from road may make access difficult.
9. NW corner of Route 9 & South Street. Parcel 34-77. Forested; very steep.
10. Edge of Compaq site. Part of Parcel 35-39.
11. Part of Quantum site. Parcel 35-36.
12. SW corner of Route 9 & Chestnut Street. Parcels 35-30-x. Chapter 61A land.
13. Forested Parcel 35-8.
14. East of Shrewsbury Commons, LI-zoned. Parcels 36-31-1 and 36-31-5.
15. NW corner of Route 9 & Walnut Street. Parcel 36-16.
16. SW corner of Route 9 & Walnut Street. Parcel 36-27. Appears flat and developable.
17. Walnut Street across from Christmas Tree Shops lower parking lot. Parcel 36-61. Hilly, forested.
18. North of Route 9 at Northborough border. Parcel 36-19.
19. SE corner of Route 20 & Walnut Street. Parcel 36-50.

Photos

#1 (Glavin Center): This vacant site on the south side of Route 9 is part of the Glavin Center, owned by the Commonwealth. Although portions of the site are steep and one corner appears to be wetland, there is significant development potential here.

#2 (Imperial Village): Turning into and out of this apartment complex is dangerous because there are no acceleration or deceleration lanes approaching the driveway. As a result, vehicles must slow to 10-15 mph to make this turn, on a roadway where typical speeds are 45-65 mph.

#3 (Staples/Stop & Shop Plaza): The vegetation on the right of the photo screens this shopping center from Route 9, creating a pleasant green edge along the roadway. Landscaped islands within the parking lot would improve its appearance and create a more orderly circulation pattern. One good feature of this shopping center is the internal connector road to the Stop & Shop plaza, as well as a single shared access point from Route 9. This connection allows shoppers to go from store to store without going onto Route 9.

#4 (West of Yorkshire Terrace Apartments): The vacant parcel on the left side of this photo is located just west of the Yorkshire Terrace Apartments on the south side of Route 9. One reason that this site remains undeveloped might be the steep dropoff from Route 9 to this site, which makes access to this site difficult. Several other vacant sites along Route 9 East are similarly constrained by topography.

#5 (EZ Mini Storage on Route 9): Development regulations in the Commercial Business districts require a 75' front setback and a 15' landscaped strip adjacent to the roadway. Based on these regulations, the site layout of new development along CB-zoned sections of Route 9 can be expected to look something like this site. Route 9 East might benefit from architectural design review: contrast the utilitarian design of EZ Mini Storage to the more attractive building behind it, which uses higher-quality materials and has a pitched roof.

#6 (Olde Shrewsbury Village): The Christmas Tree Shops plaza is an attractively-designed shopping center. Design elements that contribute to this impression include interesting architectural design (with ornamental features such as the cupolas), extensive landscaping, and parking that is screened so as to emphasize the buildings.

#7 (Northwest corner of Route 20 and Walnut Street): The wide curb cut to this industrial site creates a hazardous condition by allowing vehicles to enter and leave this parking lot at high speeds in virtually any direction. The densely-planted vegetated strip, is only about 20 feet deep, but nevertheless effectively screens this development from Route 20.

#8 (south side of Route 20 across from Rainbow Motel): This yard for building and landscaping materials is unscreened and presents an eyesore for travelers on Route 20.

Text

#A (adjacent to Ragsdale KIA): If the Town hopes to encourage the expansion of office and R&D uses in this area, then Limited Industrial zoning might be more appropriate than Commercial Business zoning. LI zoning would reserve this land for such uses by prohibiting retail development.

4. Summary of the Route 20 District Study

This brief report provides a transcription and summary of the Route 20 District Study. The Route 20 District Study consists of:

- an annotated map and aerial photograph of the study area
- photos and text with information on specific sites in the study area
- analyses of zoning, transportation and other factors relevant in the district

In order to provide the needed level of detail, the district studies were prepared on large boards, which can be reviewed, upon request, at the Engineering Department offices in Town Hall. Examining these boards is the best way to read and understand the district studies. However, for the sake of convenience, the text from the Route 20 District Study is also transcribed below. For text that references a specific point on the map, the location of this reference is indicated in parentheses.

Snapshot of the Issues & Opportunities

1. How to bring in higher-value uses
2. Mix of uses in each district
3. Aesthetics
4. Road safety
5. Residential/business interfaces
6. Infrastructure services

Zoning Analysis

Mix of Allowed Uses: The Route 20 corridor contains three different business zones: Limited Business, Commercial Business, and Limited Industrial. The zoning districts are fairly specific, which is generally good because it targets each area for a specific type of use. For example, residential development is prohibited in the LI district, which not only prevents conflicts between residential and business uses, but also reserves LI-zoned land for industrial and office developments. Most types of retail development are also prohibited from the LI district, which, again, helps to reserve land for office and manufacturing uses. While targeted zoning is generally appropriate in the Route 20 corridor, some have suggested that a small amount of retail or restaurant development be allowed in or near major office or industrial developments, such as the Compaq/Quantum area on South Street. This would allow workers to buy food and run errands from their workplace without needing to drive long distances.

Depth of Zoning Districts: The depth of a zoning district can affect what types of uses are able to locate there. Shallow depths can preclude large manufacturing or warehousing facilities, as well as campus-style office or R&D parks. The LI district on the north side of Route 20 ranges from 1000 to 1500' deep, and is deep enough to accommodate virtually any use allowed in the district. The CB district south of Route 20 is 600' deep in most places, narrowing to 400' around Route 140. The Edgemere Drive-in is about 1500' deep. The CB district could accommodate a retail shopping center such as Quinsigamond Plaza as well as a variety of manufacturing, office, trucking and industrial uses. A campus-style office park or industrial park probably could not fit in the 600' deep section of the CB district.

Route 20 Corridor Infrastructure

Existing services: Currently, public water service is available throughout much of the Route 20 corridor, while public sewer service is limited to a few locations. Water lines run along Route 20 from the

Worcester line to Grafton Street and from the eastern intersection of Stoney Hill Road to Walnut Street. Water service in the Route 20 corridor is provided mainly to residential developments including Edgemere and the Hills Farms Estates subdivision. Sewer service in the Route 20 corridor is limited to a few major developments, including the Olde Shrewsbury Village, Shrewsbury Commons, the landfill, Hills Farms Industrial Park, the Hills Farms Estates subdivision, and Edgemere (nearing completion).

Identified needs: The availability of public water and sewer infrastructure affects the types of development that are likely to be attracted to specific area. Areas without such infrastructure are more likely to attract uses that generate little wastewater. In Shrewsbury these have included trucking terminals, automotive uses, contractors' yards, and non water-intensive manufacturing. Office buildings generate more wastewater per square foot of building, as do certain types of manufacturing, research, and laboratory facilities. While various on-site wastewater treatment options are available, the lack of public sewer infrastructure in the Route 20 corridor will make these sites less desirable than sewered sites elsewhere in the region. At Master Plan meetings, businesspeople and residents have also suggested that high-speed data and telecommunications infrastructure should be provided in the Route 20 corridor to attract office and high-technology developments.

Route 20 Corridor Traffic Safety

Capacity: At Master Plan public meetings, residents who use Route 20 have identified current capacity problems on Route 20, as evidenced by slow-moving traffic, excessive delays at stoplights, and difficulty turning onto Route 20 during peak hours. If the large amount of commercially- and industrially-zoned land in the Route 20 corridor is built out, these conditions will become considerably worse. For example, the current average daily traffic (ADT) volume on Route 20 is about 18,000 vehicles per day. If the business-zoned land within the Route 20 corridor is fully built out, the new development has the potential to generate on the order of 40,000 - 50,000 new ADT. (See the Master Plan for additional information.) And this figure does not include new trips from residential development or background growth associated with trips to and from other regional destinations. These projections suggest that the Town should seriously examine programs to encourage alternative forms of transportation, as well as improvements to Route 20.

Turning Traffic and Other Safety Issues: Residents have identified other safety concerns along Route 20. As traffic volumes on this roadway have increased, making turns onto and off of Route 20 has become increasingly difficult and dangerous. Turning onto Route 20 from business driveways and at unsignalized intersections is reported to be difficult, especially at peak hours. Similarly, turning from Route 20 into such streets and driveways creates a hazard when traffic must stop in the middle of the street while waiting to make a left turn. Adding dedicated or shared left- turn lanes in certain areas is one possible solution to this problem. Residents also pointed out that the lane patterns on Route 20 frequently change, which is dangerous and confusing for drivers. For example, some portions of Route 20 eastbound are two lanes while other portions are a single lane. Traffic must merge each time there is a "lane drop."

Photos

#1 (Route 20 at Worcester border): Wide curb cuts create confusion as to where vehicles are supposed to enter and exit this parking lot, and allows vehicles to enter the lot at relatively high speeds. This situation creates an accident hazard both within the parking lot and on Route 20, and renders this stretch of Route 20 unsafe for pedestrians.

#2 (Edgemere Sears Plaza): Sears Plaza could benefit from redevelopment, including facade improvements and landscaping around the parking lot. The Plaza backs onto Flint Pond, and residents

have suggested that any redevelopment should take advantage of this scenic resource. Again, note that the wide curb cuts encourage vehicles to enter the parking lot at high speeds, creating a hazardous condition.

#3 (Dunkin Donuts on Route 20 at Lincoln Way): Zoning in the Limited Business district, where this Dunkin Donuts is located, requires a 50' front setback and a 15' wide continuous landscaped strip adjacent to the road. The setback requirement promotes a "highway business" look, although landscaping softens the appearance somewhat. Over time, new commercial development in the LB and CB districts along Route 20 can be expected to look something like this.

#4 (Northeast corner of Route 20 and Lake Street): This is one of many low-value commercial and industrial uses along Route 20 that may be suitable for redevelopment. In general, unscreened storage of vehicles or equipment creates visual blight. Landscaping required as part of site plan approval (which is triggered for non-residential uses which require 20 or more parking spaces) should help to alleviate such eyesores in the future.

#5 (East side of Route 140, north of Route 20): This new business park located on Route 140 provides a relatively small amount of gross square footage given the size of the site. Inefficient use of the land results from a deep wooded frontage strip (part of this may be wetlands), excessive paved areas, and single-story construction. Higher-density office/industrial development resulting from more efficient use of this site would generate more benefits for the Town in terms of tax revenue and employment, and could be encouraged through the zoning bylaw and the Site Plan Approval process.

#6 (North side of Route 20): Many of the automotive uses along Route 20 utilize only the frontage of parcels that extend back several hundred feet from the roadway. However, the backlands, many of which are developable, remain generally inaccessible as long as these low-value uses remain along the road frontage.

#7 (Hills Farms Industrial Park): The Hills Farms Industrial Park consists of several buildings that provide office, light manufacturing, and shipping facilities for numerous businesses.

#8 (Cherry Street at Joyce Circle): This house on Joyce Circle, off of Cherry Street, abuts a trucking terminal with no effective buffering or screening. Setback and screening requirements that encourage the retention of natural vegetation could prevent such situations from occurring elsewhere along the Route 20 corridor where business-zoned areas abut residentially-zoned areas.

#9 (CCX trucking terminal across from the landfill): The CCX trucking terminal is more attractive than other trucking facilities along Route 20 because the trailer yard is set back from the highway behind the CCX offices and a large front lawn (pictured here).

#10 (Route 20 west of South Street): This industrial facility on Route 20 is an eyesore because truck parking and trailer loading functions are located in the front of the building. Contrast this design with that of the CCX terminal (photo #9), where the relatively attractive lawn and building are visible from Route 20, while the trucking functions are more hidden.

#11 (Nations Rent on Route 20 east of South Street): Zoning in the Commercial Business district requires a 75-foot front setback and a 15-foot wide landscaped buffer strip between the roadway and the parking area. Based on these requirements, new development in the CB-zoned sections of Route 20 will look something like the businesses in this picture.

Text

#A (Edgemere Drive-in): The Edgemere Drive-in theater, which was recently vacated, is a 35+ acre parcel that is zoned Commercial Business. According to the Town, Home Depot has proposed to build a distribution center on this site. Given this site's flat topography and good access to the Masspike, the Town may be able to attract a higher-value use than this. Depending on the Town's objectives, limited Industrial zoning might also be more appropriate than CB.

#B (Purinton Street): The Rural B zoning in this area is appropriate given the primarily residential character of this area, as well as steep topography adjacent to Route 20 which would make high-intensity development difficult.

#C (Route 20 at Grafton Street): The lack of turning lanes and acceleration/deceleration lanes along Route 20 makes for dangerous conditions in some places, given the high speed of traffic, numerous trucks, and significant amount of traffic turning onto or off of Route 20. The Route 20/Grafton Street intersection is one such location. As Route 20 becomes more intensively developed, selective road widening and right or left turn lanes may be needed in some places.

#D (Hills Farms Estate subdivision): The new subdivision on Stoney Hill Road is one of the few locations in the Route 20 corridor serviced by municipal sewer. Sewering here facilitated the development of a cluster subdivision with smaller lots and protected open space. However, as the Town approaches possible limitations on its ability to provide additional sewer service, it should carefully evaluate where sewer should be provided in the Route 20 corridor. Targeted installation of sewers could help to promote certain uses, such as office and research & development.

#E (Cherry Street south of Route 20): Cherry Street once connected Route 20 to Green Street at the Grafton border, but was discontinued beyond this point in the 1960s. Some have suggested re-opening and upgrading Cherry Street to provide a direct link to the Commuter Rail station in Grafton. Doing so would facilitate commuting to this station, ease traffic and safety concerns on Green Street (now a major route to the station), and perhaps make the land on Route 20 more valuable by improving its regional accessibility.

#F (Landfill): The landfill, owned by the Town of Shrewsbury, accepts ash from the regional waste combustion facility in Millbury. The current disposal contract will run until the landfill reaches capacity, probably about 2011. At this point, the Town will be able to cap the landfill and develop the capped portions. The landfill is currently zoned Rural B and Commercial Business. This zoning may need to be modified as the landfill capping date draws nearer, depending on the Town's plans for the land.

#G (South side of Route 20 near Walnut Street): Numerous residential dwellings as well as undeveloped residentially-zoned land abut the Commercial Business district on the south side of Route 20. Zoning regulations for this district require a 50-foot setback from residential properties. A formal requirement for screening or natural vegetation within this setback would provide additional assurance that the residential properties in this area will not be adversely affected by nearby commercial development.

5. Summary of the Lake Quinsigamond Shoreline District Study

This brief report provides a transcription and summary of the Lake Quinsigamond Shoreline District Study. The Lake Quinsigamond Shoreline District Study consists of:

- an annotated map and aerial photograph of the study area
- photos and text with information on specific sites in the study area
- analyses of zoning, water quality and other factors relevant in the district

In order to provide the needed level of detail, the district studies were prepared on large boards, which can be reviewed, upon request, at the Engineering Department in Town Hall. Examining these boards is the best way to read and understand the district studies. However, for the sake of convenience, the text from the Lake Quinsigamond Shoreline District Study is also transcribed below. For text that references a specific point on the map, the location of this reference is indicated in parentheses.

Snapshot of the Issues & Opportunities

1. Public access to the lakefront
2. Availability of lakefront recreation opportunities
3. Design of lakefront development
4. Redevelopment opportunities
5. Lake water quality

Zoning Analysis

Summary of Existing Zoning

The Lake Quinsigamond shoreline (the land west of North/South Quinsigamond Avenue) contains the following zoning districts:

- The Rural B district, located along portions of North Quinsigamond Avenue, allows residential development with a minimum lot size of 20,000 square feet.
- The Residence B-2 district, located along most of South Quinsigamond Avenue and a small portion of North Quinsigamond Avenue, allows residential development with a minimum lot size of 12,500 square feet.
- The MF-1 district, located in areas of existing multi-family housing along North and South Quinsigamond Avenue, allows multi-family townhouse-type apartments and multi-family garden-type apartments, both by special permit.
- The Commercial Business district, located on both sides of Route 9 in the White City area, allows residential dwellings, a wide range of retail and service business, certain institutions, and certain other uses.
- The Limited Business district, located along both sides of Route 20 in the Edgemere area, allows residential dwellings, institutional uses, and business uses including retail stores and service establishments, offices, banks, and eat-in restaurants.

Zoning Options for the Lakefront

At the master plan forums, many residents stated that the Town should acquire land along Lake Quinsigamond for public beaches and recreation areas. While this is one way of gaining public access to the lake, the Town could also work with the private sector to encourage public access on private lands. Through the creation of a Lakefront Overlay District, the Town can encourage private owners to develop uses that will take advantage of the lake as a resource and will make the lakefront accessible to everyone.

For example, existing commercial properties in the White City area could be redeveloped for retail, entertainment or recreational uses that take advantage of the lakefront with outdoor restaurant seating, marinas, boardwalks or other amenities. Mixed-use developments in this area could offer a variety of activities, such as shopping, dining, or residential units. Within non-residential areas adjacent to the lake, a Lakefront Overlay District could require the landowner to provide public access and/or specific public amenities at the time that the land is redeveloped, or it could offer incentives such as tax credits, density bonuses, or development assistance to property owners to encourage such amenities. Within residentially-zoned areas, public access might be encouraged through a system of incentives linked to density or to the issuance of special permits (for example, for multi-family housing).

Water Quality in Lake Quinsigamond

Water quality problems in Lake Quinsigamond and Flint Pond result in large part from runoff from the surrounding areas which contains nitrogen, phosphorous, and other biological and chemical contaminants. Nitrogen and phosphorous are plant nutrients and promote the growth of aquatic weeds, which are a nuisance to swimmers and boaters. In addition, water quality problems pose an ongoing threat to Lake Quinsigamond's beaches.

One major source of pollution—failing septic systems—is being addressed by the recent addition of sewers in the Edgemere neighborhood and the proposed sewerage of the Oakland Avenue area off of West Main Street. Over time, these projects will likely result in an improvement of lake water quality, although the retention of plant nutrients and pollutants in the sediment means that this process may be gradual. In addition, the Lake Quinsigamond Commission is planning to conduct winter drawdowns in Lake Quinsigamond and Flint Pond in the coming years in order to control weed growth.

In order to improve water quality further, the Town will need to establish a program that addresses sources of “nonpoint source pollution” such as runoff from roads, parking lots, lawns, and other developed areas. More detailed information on this topic is provided in the Master Plan.

Lake Quinsigamond Public Access Points

1. This small parcel owned by the Conservation Commission provides lake access and an unpaved parking area. The area is used for fishing, among other activities. See photo 1.
2. Corazzini Boat Ramp, located at 239 North Quinsigamond Avenue, provides a boat launching area and a large parking area. Donahue Rowing Center, located at 237 North Quinsigamond Avenue, includes a function room and public rental space for storing rowing shells.
3. The Town recently acquired this parcel south of the rowing center for conservation land.
4. Sunset Beach, located at the end of Old Faith Road, is privately owned but open to the public on a membership basis. See photo 6.
5. Oak Island consists of two parcels of land: a small, state-owned parcel that provides a boat launch and parking area; and a small Town-owned parcel that is undeveloped.

Photos

#1 (Town-owned land at the northern tip of Lake Quinsigamond): This small parcel of land at the northern tip of Lake Quinsigamond is accessible from Holden Street and serves as a local fishing spot. The small size of this parcel, as well as the proliferation of aquatic weeds in this area, probably makes this an inappropriate location to create a public beach.

#2 (Aquatic weeds at the northern end of Lake Quinsigamond): See the “Water Quality in Lake Quinsigamond” discussion above.

#3 (Stair down to Lake Quinsigamond at the White City Bridge): Two stairways down to Lake Quinsigamond from Route 9 (one on either side of the road) are a reminder of days past, when the public could easily access the lake from this location. Currently both stairways dead-end in a patch of overgrown vegetation. The lakefront property in this area is all privately owned (see photos 4 and 5).

#4 (Parking lot behind East Side Mario's and Boston Market on Route 9 near the White City Bridge): Lakefront property in the Route 9 shopping area is underutilized in terms of taking advantage of the lake as a resource. This large parking area for East Side Mario's, Boston Market, and Burger King, which is rarely full, contributes visual blight and water pollution to the lakeshore.

#5 (Behind White City West): This photo is taken looking south in the area behind the cinemas at White City West. The Lake Quinsigamond shoreline is located about 50 feet to the right. White City West has located its loading and trash disposal operations on the lake side of the property, thus effectively turning its back on the lake and cutting off public access to the shoreline.

#6 (Sunset Beach): Sunset Beach, which is privately-owned but open to the public on a membership basis, is Shrewsbury's only publicly-accessible swimming beach. An assessment of potential beach sites in Shrewsbury that was prepared in 1998 examined the possibility of the Town purchasing this site for a public beach. One obstacle to this scenario is that the beach is relatively inaccessible and might face neighborhood opposition to the increased traffic that a public beach could generate.

#7 (Oak Island Boat Ramp): This boat ramp on Oak Island off of Route 20 is owned by the state and provides access to Flint Pond. The property is quite small and probably has insufficient room for a public beach. However, the Town owns a parcel of vacant land directly adjacent to this site. Excessive weed growth is a problem in Flint Pond for swimmers and boaters alike.

Text

#A (Tatasit Beach): Tatasit Beach is a privately owned parcel of land that contains a vacant building as well as a beach area. A walkway connects Tatasit Beach to Plum Island. Since the land is currently underutilized, many Shrewsbury residents at the master plan public forums suggested that the Town purchase the land for a public beach. This site appears to be one of the most promising locations for Shrewsbury to establish a public beach.

#B (Stoneland Road off of South Quinsigamond Avenue): Stoneland Road is one of several public rights-of-way off of South Quinsigamond Avenue that terminate at the water's edge, thus potentially providing public access to the lake for pedestrians. However, here, as in most of the locations where a public right-of-way goes down to the water, adjacent landowners have treated the right-of-way as private property and have closed off lake access to the public.

6. Summary of the Northwest Shrewsbury District Study

This brief report provides a transcription and summary of the Northwest Shrewsbury District Study. The Northwest Shrewsbury District Study consists of:

- an annotated map and aerial photograph of the study area
- photos and text with information on specific sites in the study area
- analyses of zoning, transportation and other factors relevant in the district

In order to provide the needed level of detail, the district studies were prepared on large boards, which can be reviewed, upon request, at the Engineering Department offices in Town Hall. Examining these boards is the best way to read and understand the district studies. However, for the sake of convenience, the text from the Northwest Shrewsbury District Study is also transcribed below. For text that references a specific point on the map, the location of this reference is indicated in parentheses.

Snapshot of the Issues & Opportunities

1. Aquifer protection
2. New residential development
3. New commercial and industrial development
4. Impact of the new high school
5. Transportation
6. Public access to water bodies

Protecting Shrewsbury's Aquifers

Existing Aquifer Protections

Shrewsbury added the Aquifer Protection Overlay District (APOD) to its Zoning Bylaw in 1988 to protect the Town's aquifers and aquifer recharge areas from contamination. The map below shows the three APOD designations. Zone 1, shown in green, includes land within a 400-foot radius of an existing or potential municipal well site, and prohibits most forms of development. Zone 2, shown in light gray, is the area of land that directly recharges existing or potential municipal wells under normal pumping conditions. Zone 3, shown in dark gray, includes land, which contributes surface water and/or groundwater to Zone 2 and/or Zone 1.

Within Zone 2 and Zone 3, the APOD regulations restrict land uses that could contaminate the aquifer, such as the use and manufacture of hazardous materials and automotive-related businesses. In order to maximize aquifer recharge, the regulations also limit impervious coverage to 30%, except by special permit.

Potential Threats to the Aquifer

Aquifer contamination typically results from land uses within the aquifer recharge areas. Spills of toxic materials, petroleum products, and other contaminants can quickly enter the groundwater if they occur over porous sand and gravel deposits. For example, in the early 1990s, the toxic chemical TCE was discovered in the Town's water supply. Given the presence of a trucking operation within the aquifer recharge area (see photo below), the Town is vigilant about sampling for VOCs (volatile organic compounds) and other pollutants. "Nonpoint source pollution," which includes polluted runoff from roads, parking lots, lawns and other areas, can also contaminate an aquifer, and is much harder to trace and eliminate. Nonpoint source pollution typically increases as an area becomes more developed with residential and business uses.

Analysis of Existing Aquifer Protections

In general, the APOD regulations offer good protection for the Town's groundwater sources. However, because several potentially damaging uses are allowed within the APOD by special permit, the effectiveness of the APOD regulations hinges upon the administration of these special permit provisions. Eliminating these special permit provisions would increase the certainty that the aquifer will be protected in the future, but may also unnecessarily limit the development of certain sites within the APOD.

In general, aquifer protection is not compatible with intensive development in northwest Shrewsbury. Even "clean" land uses such as office buildings may be damaging to the aquifer because added impervious surfaces will impede groundwater infiltration while contributing nonpoint source pollution. Several large undeveloped parcels of land in this area are now zoned for Limited Industrial or Commercial Business use. If the Town limits these developments to 30% impervious coverage, the sites will likely attract low-value business uses. On the other hand, if the Town allows greater amounts of impervious coverage by special permit, the aquifer will be jeopardized. Therefore, the Town may wish to consider zoning the Zone 2 and Zone 3 recharge areas for non-business uses.

Zoning Analysis

Northwest Shrewsbury contains the following zoning districts:

- Rural A, Rural B, and Residence A which all allow residential development with a minimum lot size of 20,000 square feet.
- Residence B-2 allows residential development with a minimum lot size of 12,500 square feet.
- The Limited Industrial district allows research laboratories, office buildings, and light industries such as contractors' yards and storage yards, trucking terminals and warehouses, and distribution centers and plants. Residential uses are not allowed in the LI district.
- The Commercial Business district allows residential dwellings, a wide range of retail and service business, certain institutions, and certain other uses.
- The Office-Research district allows research and industrial uses including photographic, medical, scientific, and research laboratories; research and development in the pharmaceutical, biotechnology, and biomedical fields; and business and professional offices. No residential uses are allowed.

Large Developable Parcels

1. Parcels 7-1, 7-1-1, and 13-70-2. These parcels are located between Holden Street and the Worcester border and are zoned Limited Industrial. All are within the Zone 2 Aquifer Protection Overlay District (APOD) and contain some wetlands.
2. Parcel 7-2. This large parcel adjacent to Boylston and West Boylston is wooded and very steep, with some boulders and/or rock outcroppings. Zoning is Limited Industrial with a Zone 3 APOD overlay. It appears that site access from Holden Street would be very difficult due to the steep slopes.
3. Parcel 7-41. Currently used for the Worcester Sand and Gravel operation. Zoning is Commercial Business with a Zone 2 APOD overlay.
4. Part of Parcel 21-1. Shrewsbury recently purchased this portion of the former Worcester Rifle Range property.
5. Parcels 9-1 and 9-12. These sites are zoned Rural B and contains wetlands as well as perennial and intermittent streams.
6. Parcel 9-3-10. The western half of this parcel is zoned Rural B while the eastern half is zoned Office-Research. The parcel is held in common ownership with the parcel to the east. The owner has expressed interest in building an over-55 residential community on the site as well as an access road from Route 140 to Gulf Street.

7. Parcel 4-1. This parcel is zoned Office-Research and is held in common ownership with the parcel to the west. The owner has expressed interest in building an office park or other commercial development on the site. Access from Route 140 may prove challenging given the proximity of the I-290 ramps, which are located directly south of the site.

8. Parcels 9-13, 9-22 and 10-1. These parcels are zoned Residence A. Large portions of this area are characterized by steep slopes.

High School Transportation Impacts & Issues

The new high school now under construction will draw additional traffic to northwest Shrewsbury. The high school is designed to accommodate approximately 1,700 students and 225 faculty and staff. As part of the design and environmental review process for the high school, the Town hired a consultant to prepare a traffic impact study.

According to the traffic study, the new high school will have minimal impact on all thirteen intersections that were studied, except the Main Street/Holden Street/N. Quinsigamond Ave. intersection. However, traffic delays will be satisfactorily mitigated through off-site improvements that alter the lane configuration and signal timing at this intersection. (Intersections are typically studied in transportation impact studies rather than roadway segments because traffic bottlenecks almost always occur at intersections.)

For a while it was undecided how the Cypress Avenue entrance to the high school would function. Options discussed included opening this entrance permanently, opening this entrance for special events only, or keeping the entrance entirely closed to the public (but open to emergency vehicles). Finally, the School Committee voted to have it operate as a permanently open entrance, providing full access to the new high school. After ongoing discussions, including several public meetings well-attended by area residents, it was determined that having only one permanent access road to the high school would be insufficient given the number of people that would require access to the high school.

Although the Cypress Avenue entrance will now be open to the public, providing additional access to the high school, several potential difficulties exist. The traffic study estimates that only 16% of all school-related traffic would use this route (amounting to 135 vehicle trips during the morning peak hour and 88 trips during the afternoon peak hour). However, traffic would be required to travel on narrow and potentially dangerous streets such as Gulf Street and Boylston Circle to reach this entrance. The traffic study expressed concern about inexperienced high school drivers navigating these roads if they opt to use the Cypress Avenue entrance.

The study noted that few pedestrian accommodations exist near the high school, except on Holden Street and Main Street to the west of the site. Sidewalks do not exist on Sewall Street or Gulf Street, both of which are narrow and would be dangerous for pedestrians. As a result, the study estimated that only 2% of students would walk to school.

Photos

#1 (Worcester Sand and Gravel): The Worcester Sand and Gravel Company conducts an earth processing operation at this large site adjacent to Holden Street and Clinton Street. The site is also a significant recharge area for Shrewsbury's most productive aquifers.

#2 (Old vehicles parked at Worcester Sand and Gravel): See text "for Protecting Shrewsbury's Aquifers," above.

#3 (Gateway from Boylston to Shrewsbury along Route 70): Low-value commercial uses along Route 70 characterize the gateway from Boylston into Shrewsbury. Redevelopment of this area with higher-value uses may be restricted by the need to protect the groundwater aquifer.

#4 (Southern end of Newton Pond): The Conservation Commission owns a few small parcels of land at the southern end of Newton Pond. Despite the lack of public beaches within Shrewsbury, the Town does not appear to have seriously considered providing a designated public access point to Newton Pond. Most of the Newton Pond shoreline is in private ownership, although several sections along the western shoreline remain undeveloped.

#5 (Access road from Cypress Avenue to the new high school): See “High School Transportation Impacts & Issues” discussion above.

#6 (Gulf Street): Gulf Street is a narrow (20-24’ wide), curvy road with stone walls, trees and telephone poles directly adjacent to the travelway. As a result, the road has limited sight distances and can often be dangerous.

#7 (Cul-de-sac on Tory Lane): This excessively large cul-de-sac is typical of some newer subdivisions within the Town, which are often “over-engineered.” Over-engineering can result from inflexible zoning and subdivision control regulations or from an ineffective design review process. Excess pavement not only wastes money, but also increases runoff and water pollution and can significantly alter the character of a formerly rural area.

#8 (Wachusett Circle): As prime developable land within Shrewsbury has been consumed in recent years, more and more new development has occurred on sites that are steep, rocky, or have other environmental constraints. Much of the developable land in northwest Shrewsbury is characterized by steep slopes. Unless the Town has effective development regulations and is vigilant about enforcement, development of such sites often results in erosion, water pollution, and other environmental problems both during construction and following completion of the development.

#9 (Boylston Circle): This street, like Gulf Street, Sewall Street, and a few other streets in northwest Shrewsbury, is characterized by stone walls, large trees, and a relatively narrow travelway which help to impart a rural character. Widening these roads or installing sidewalks would likely destroy these character-defining features. One option for preserving the character of these roads is to implement a Scenic Roadways bylaw, which restricts the alteration of scenic features within the road right-of-way.

Appendix D

Master Plan Subcommittee Reports

During the Master Plan process, the Master Plan Steering Committee formed four subcommittees to address particular topics. These subcommittees reviewed and commented on the draft Master Plan recommendations and advised the consultant team on the preparation of the final report. The reports from each of the subcommittees are provided below.

1. Residential/Housing Subcommittee Report

Subcommittee Members: George Bergstrom, Charles Giacoppe, Kathleen Keohane, Christopher Mehne, Mary Wilson

Introduction

The main issue of concern raised by the public at meetings and in discussions is the rapid growth of residential development. Other issues are the lack of affordable housing for the elderly and young home buyers. The improvement of existing residential neighborhoods by adding sidewalks and limiting the use of cul-de-sacs has also been discussed.

After much discussion, the subcommittee has concluded (as have the Steering Committee's consultants) that limiting residential housing growth through the use of a moratorium or limiting the number of building permits is not a realistic plan, for both legal and practical reasons. Instead, we have focused on various alternatives for revamping Shrewsbury's existing bylaws relating to residential development. We have also discussed other areas that might be investigated by the town to limit or control residential growth without eliminating it entirely.

Although the possibility of increasing the minimum lot size requirement in residential zones was also discussed, recent history indicates that it would be difficult to pass such a zoning change at town meeting due to the "super-majority" (2/3 vote) requirement. The last time this bylaw amendment was suggested, it brought an avalanche of "protective" subdivision plan filings, covering many if not most of the remaining residential building lots in town. This is counter to what this subcommittee, and most citizens of Shrewsbury, believe to be in the best interests of the town.

The following are the suggestions that we believe merit further discussion, and might reasonably be implemented in the near future, to impose reasonable controls on residential growth.

Recommendations

We believe that consideration of the following by the Steering Committee for inclusion in the Master Plan is warranted:

1. Encourage the Conservation Commission to develop and propose a **wetlands bylaw** that will restrict or limit residential construction in wetlands "buffer" areas.
2. Encourage the development of a **hillside bylaw** that will restrict and control residential construction in hilly areas of town, thereby minimizing the risks of surface water and groundwater contamination (from road salt, nutrients and other runoff materials), erosion, sedimentation, unsafe roads and instability of existing building foundations.

3. Encourage cluster residential developments and duplexes as a means of promoting lower cost housing and maximizing the open space component of new subdivisions.
4. Consider adding a *lot coverage* requirement to the zoning bylaw that will restrict the size of homes that can be built on house lots to a certain percentage of the lot area. This restriction, combined with existing setback and height restrictions, would have the effect of limiting the construction of large houses on small lots.
5. Change existing zoning bylaws to make it less difficult for property owners to add second floors to their existing houses (this could be accomplished by allowing such additions by special permit rather than by variance). The intended result of such an amendment would be to encourage such additions as an alternative to new construction.
6. Consolidate the current residential zoning districts into fewer districts in order to encourage the development of affordable housing throughout Shrewsbury.
7. Eliminate or severely limit the development of cul-de-sacs in new residential subdivisions in order to reduce the overall number of buildable house lots and to reduce traffic congestion.
8. Encourage the construction and maintenance of sidewalks in all residential areas where heavy traffic conditions exist, including neighborhoods near schools and other public buildings.
9. Discourage any planning to allow small stores in residential neighborhoods.
10. Encourage the development of small stores, small offices and “bed and breakfasts” in the center of town and other areas presently zoned for commercial use.

Conclusion

The majority of land left to be built upon in Shrewsbury contains, or is affected by, wetlands, ledge and/or hilly terrain. One of the objectives of the foregoing recommendations is to attempt to limit growth in these sensitive areas. We believe that one of the major objectives of the new Master Plan should be to encourage the town to find ways to reasonably control, rather than prohibit, future residential growth.

2. Business Subcommittee Report

Subcommittee Members: Tony Thomas, Pat Convery, Sandy McManus, Nick Shah, Kathy Copeland, Melanie McGee, Jim Grosso

- I. Office/Research – The entire town map was reviewed by the subcommittee with Office/Research zones the focus. The subcommittee is prepared to recommend to the full committee the following:
 - A. The Old Bee Plastics plant on Route 9 between Oak Street and Lake Street should be rezoned Office/Research as shown on the map.
 - B. The zoning recommended for the corner of South Street and Route 9 N should be changed from shopping center to 1/3 neighborhood business and 2/3 office/research.

- C. The area shown on the map from South Street to Route 20, then southwest to Cherry Street should clearly indicate by the yellow shading all areas where houses exist and extend the pink Office/Research area southwest to Cherry Street.
- D. In the northeast part of town, east of Route 140, make sure pink Office/Research doesn't infringe on the yellow shaded residential district.
- E. The old Edgemere Drive-in should be rezoned from Limited Industrial to Office/Research.
- F. The areas shown on the map as Office/Research at the gravel pit in the northwest end of town and at the Route 140/290 interchange are okay.

II. Limited Industrial

- A. The areas shown on the map are okay, but we should consider improving the aesthetics of this type of zoning. Items to consider are:
 - 1. Requiring a certain green space between the street or abutting property and the industrial use.
 - 2. Placing restrictions on tree cutting.
 - 3. Placing conditions on certain operations and hours of operations.
- B. Stronger Zoning Bylaw enforcement should be considered. Consider such tools as:
 - 1. Escalating fines for violations.
 - 2. More effective construction permit enforcement.
 - 3. Three strikes and out for repeat offenders.

III. Neighborhood Shopping Areas – The subcommittee could not reach consensus on this type of zone and decided to ask the public at the November 14th meeting for their input.

IV. Forbidden Uses in Business Zones – The subcommittee discussed what uses should be forbidden in business zones and agreed on the following:

Any business or industry use that would increase traffic by some percentage to be determined; or exceeds the capacity of the street or intersection; or exceeds capacity of the infrastructure of the area, e.g., water/sewer, police/fire, etc.

V. Infrastructure – The one caveat that forms the foundation of any future plan for development is the state of the infrastructure. The town must include water/sewer installation along the length of Route 20 if the new zones are to become a reality. A comprehensive plan to improve streets and add sidewalks in critical areas of Town must be included in any Master Plan.

3. Transportation Subcommittee Report

Subcommittee Members: Mark Harris, Edward Holland, Marcia Pereira, Alan Asadoorian

This Subcommittee has met to discuss the many comments made by the public through open meetings and written communications since the start of the Master Plan process regarding the impact of current traffic conditions on the Town of Shrewsbury as well as the perceived impact of the future development and/or redevelopment of the Town as a whole. The most frequently addressed issue presented to the Steering Committee and this Subcommittee is the traffic at the Town Center. Of additional concern are the changing traffic patterns that will result from the new High School and the future development of the Route 20 Corridor.

This Subcommittee attempted to look at the future of the Town while being sensitive to the goals of the Master Plan Steering Committee which include maintaining the quality of life and aesthetic appeal of the Town while promoting the economic growth required to maintain the relative affordability of life in Shrewsbury. In the short time available to us we decided to establish a holistic approach to the future rather than attempt to study and propose specific modifications or additions to the Town's streets and roads. However, we do provide some ideas and thoughts for further consideration and digestion by the appropriate Departments and Boards in considering future development.

Our overall recommendation is to avoid reconstruction of the Town Center and other neighborhoods to accommodate a traffic load at relatively limited times, but rather to promote north/south traffic through Town in ways that will not unnecessarily burden existing neighborhoods, and by limiting, or eliminating where possible, heavy commercial through traffic from the Town Center. Additionally, because Shrewsbury lacks alternate north/south routes which forces the majority of such traffic through the Town Center, we recommend the Town work cooperatively and proactively with the State, neighboring cities and towns, and other regional organizations to coordinate and promote the use of the existing Interstate and limited access highways such as Routes 9, 20, 146, I-90 (Massachusetts Turnpike), I-290, I-190, and I-495 to route current and future commercial and private "through traffic" around Shrewsbury rather than through the Town Center and to improve and promote the use of public transportation to and from as well as within Shrewsbury.

The following will provide our thoughts and suggestions on several recommendations that will provide a flavor for the kinds of long-range projects we feel will satisfy the goals of the Master Plan.

Traffic Controls

In order to understand the possibilities and complexities of modifying and/or installing traffic controls such as exclusions, signals, or reconstruction, it is necessary to know which governmental unit "owns" or controls each roadway.

Commonwealth of Massachusetts controlled:

- Route 70, Clinton Street
- Route 9, Boston Turnpike
- Route 20, Hartford Turnpike
- Interstate 290
- Maple Avenue, from Main Street to Route 9
- Main Street, from Maple Avenue to Northborough Town Line

Note: These roads represent the primary east/west passages within and through Shrewsbury. All traffic signals on these roads are owned and controlled by the Commonwealth.

Town owned but State regulated is the primary north/south roadway: Route 140, also known as Grafton Street and Boylston Street. Any traffic controls or restrictions to this street would most likely require approval of the Commonwealth.

Philosophy/Recommendation:

Recommend the use of technology to improve traffic flow at critical traffic intersections at peak travel times, such as lights that allow more north/south flow during the morning and evening commute and more east/west flow during the day. We believe that proper engineering and study can be applied to improve traffic flow while minimizing new roadway construction. Key intersections requiring attention include Main Street/Route 140 at the Town Center, Harrington Ave. and Route 9, and North/South Quinsigamond Ave. & Route 9 at White City.

Alternate Transportation and Supporting Items

The Town Boards should recognize the need for future transportation out of Shrewsbury by residents working in other cities and towns. With the potential for 6,000 additional new residences in the full build out analysis, it is logical to assume that future traffic will include additional commuters to work places to the east of town, such as Grafton, Westborough, Marlboro, Framingham, the Route 128 area, and Boston. Additional employment opportunities in Worcester to the west will also generate east/west traffic to the growing medical and biotech facilities across Lake Quinsigamond. The following are recommended:

- North/south transport within Town to gain access to the abundant east/west roadways and public transportation needs to be planned with the cooperation of developers and Town Boards so that future developments promote traffic collection and consolidation by making available public commuter parking facilities.
- A shuttle bus traveling on major routes on a regular basis to provide the handicapped, seniors and others with regular public transportation may be advisable and should be studied. This could also take advantage of commuter parking facilities for pick-up/drop-off for public transportation and combine with handicap or senior travel programs and with the current bus service. A shuttle or bus should be anticipated and planned for connection to the commuter train stations in Worcester, Grafton and Westborough on a regular basis and more frequently during rush hours.
- Roadway development and/or improvements should be explored with developers as parcels in the vicinity of public transportation facilities are proposed for development. For example, the development of Town-owned property in conjunction with private property in the area south of Route 20 in the area of Cherry Street could be coordinated to provide viable access to the Grafton commuter rail station, as well as improve to possible use of the Town property in that area.

Traffic Flow and Safety

- We recommend all future development should encourage through traffic flow and discourage cul-de-sacs, dead ends or closed loops.

- Town road standards should be reviewed and classified to be sensitive to existing neighborhoods and to the goal of maintaining the aesthetic appeal of the Town as a whole, but still providing a safe place to live and work. There are streets and roads in town that would beg to be designated as “scenic roadways” in order to preserve the current appeal. Future development and public safety may, however, dictate changes. It will be a challenge to provide a safe but aesthetically pleasing solution to this problem.
- Of particular concern are streets that now or in the future will provide access to schools, recreation and public transportation, such as Lake Street to the future SAC Recreation area; Gulf Street and other possible access roads to the new high school; North & South Quinsigamond Avenue; Harrington and Old Mill.
- Alternate routes should be developed to parallel major routes through future development and land acquisition. This would include preventing dead ends and allow neighborhood residents multiple outlets from their streets wherever possible. New road projects that have been suggested include the following:
 - Connector between Oak Street at Maple Ave. and Main Street between St. John’s and Trinity Church.
 - Connector from Route 140 to Gulf Street at Bannister Street on the north side of Route 290.

The Town Center

The comments received by this Subcommittee regarding the traffic conditions in the center of Town ranged from “it’s not so bad, leave it alone” to “it’s intolerable, something’s got to be done.” It is obvious that foot traffic is not encouraged with the existing configuration and traffic levels, and this condition would seem to be worsened if the proposed plan to add travel lanes by expanding roadways is developed. It is the opinion of this subcommittee that additional road construction will not be in keeping with the Master Plan goal to maintain the aesthetics of the Town Center. Our recommendations go toward eliminating traffic by exclusion of commercial traffic and by encouraging the use of other routes to bypass the intersections at 140/Main Street and Main Street/Maple Avenue. We feel the following suggestions will assist in lessening the traffic load and traffic growth in the Town Center.

- Improve traffic at the 140/Main Street intersection through institutional measures such as technologically advanced signals that will allow left turning traffic priority timing to clear turning traffic without creating grid lock.
- Recommend the town reduce traffic through the center by implementing truck exclusions on Route 140 and/or Main Street.
- Recommend the town encourage development of off-street parking in the vicinity of the center of Town to encourage foot traffic and perhaps eliminate on street parking to make wider travel lanes available.
- Recommend traffic controls that encourage use of interchanges with routes 140, 146, I-90 and 20 and with routes 122 and 9 to move traffic to routes I-190, I-495 and I-290. This would apply to commercial traffic especially. This may require cooperation with regional and Commonwealth organizations. This reflects a desire to restrict truck traffic on route 140 and North and South

Quinsigamond Avenue. Improving route 20 would encourage the truck traffic flow to use route 20 to gain access to route 9 to the west, the Massachusetts Turnpike in Millbury at 122 and 146, and to Route I-290 from 146.

- Propose connector between Oak Street at Maple Ave. and Main Street between St. John's and Trinity Church.
- Encourage Town to acquire land to improve north/south traffic flow north of Main Street in the long term.

Route 9

Because Route 9 represents a major east/west link to and through Shrewsbury it represents a resource and a liability. Development along Route 9 provides opportunity for economic growth but traffic on Route 9 will continue to grow due to commuter travel in and out of Shrewsbury as well as traffic to and from Worcester traveling east and west through Shrewsbury.

- Recommend study of traffic issues and installation of traffic controls (lights) on route 140 from route 9 north to coordinate traffic flow onto 140 from the connector streets.
- Work with state to build safe on and off ramps at the junction of routes 9 and 140 and reconstruct the bridge at this location and over time make the interchange more fluid and safer, including Grafton Street (140) north toward the Town Center by Melody Lane, Lake Street and Old Brook Rd. where residential traffic enters and exits.

White City Area

The area of Route 9 from Maple Avenue west to the Lake Quinsigamond Bridge will also need attention to traffic control and may benefit from reengineered signals at Harrington Avenue and North & South Quinsigamond Avenue. Realignment or major reconstruction must be coordinated with the future land use development and efforts to restrict cross traffic to make the roadway a boulevard type thoroughfare may present problems due to the lack of contiguous side streets to offer access to area businesses.

Route 140 at I-290

Traffic entering and exiting I-290 must navigate residential traffic entering Route 140 from several sources within a very short proximity of the on and off ramps to I-290. This condition contributes to back-ups onto side streets such as Rawson Hill Rd. and Wachusett Avenue. These conditions will probably become worse as new housing is developed on feeder roads. The Town should investigate the possible ramifications of the growing traffic in this area and, with the Commonwealth Highway Department, develop traffic controls suitable to the conditions to promote safe travel.

Another recommendation for this area is that with potential development of the area north of I-290 and west of Route 140, attention is given and consideration made to the inclusion of a roadway from 140 connecting to Gulf Street at Bannister to allow cross-town traffic to the area of the new high school.

4. Open Space and Recreation Subcommittee Report

Subcommittee Members: Carlo Alano, Dot Perkins, Dorby Thomas, Dan Wolohan, Jonathon Wright, Laurie Hogan

We have met three times since our last Steering Committee meeting. It took us two meetings to realize that the Conservation Commission had done much of our task previously. Therefore, we make the following recommendations relative to the report:

1. That Section 8 – Goals and Objectives – in the report entitled *Shrewsbury Open Space and Recreation Plan*, dated January 1999, be incorporated into the Master Plan with emphasis on the following:
 - I. b) – That a permanent Open Space Implementation Committee be created consisting of representatives from the Conservation Commission, the Board of Selectmen, the Assessor’s office, the Parks and Recreation Department, and interested citizens; and
 - I. f) – Create a database of landowners with key parcels. Establish a relationship of trust with these owners so that they will not feel that they might be take advantage of in the event they decide to sell the land to the town.
 - III. – Add a j): Develop passive recreation areas (walking, hiking) for use by the older citizens.
2. Enlarge and correct* the Shrewsbury Open Space Inventory listings in Section 5. Reprint maps that use the Map ID#’s so that they are readable.
 - * For one, is the former Masonic property restricted to conservation use?
3. Update Section 9 – Five-year Action Plan – to reflect realistic goals.
4. We also would recommend that the following properties now owned by Shrewsbury be developed for recreation:
 - Former Masonic property – 74.5 acres
 - Jordan Pond – 26 acres
 - The route 20 landfill – 62 acres. Of this land, 22 acres (the former solid waste disposal area), has been capped, tested and found usable. There is some concern about the truck traffic there, but ways might be found to make this portion safe. The 30 acres now being used for ash disposal will be ready for capping about 2012*. The final 10 acres may be opened for ash at that time. Since this whole area is adjacent to the former Anderson property on Cherry Street recently purchased by the town, it is proposed that a town-owned golf course could be constructed there.
 - * Recently there has been some research into the possibility of using the ash now being deposited in our landfill for road base material or as an aggregate. If this were found to be viable, this landfill area could be available for recreation sooner.
5. Finally, we recommend that the following properties now owned privately be kept in mind for future purchase and recreation use:

- Sportsman Club – 8.27 acres
- Ward Hill – 40.55 acres
- Ward Hill, Moalli – 53.11 acres
- Marston land, Spring Street – 25.38 acres
- Doyle (South Street) – 53.3 acres (note: may be better for industrial use)
- Hook (Green Street) – 80.3 acres
- Friar's (Walnut Street) – 23.53 acres, 20.35 acres
- Friar's (South Street) – 16.88 acres, 2 acres (note: ?already purchased?)
- Allen (Grove Street) – 26.59 acres, 40.12 acres
- Mitchell (Spring Street)
- Tatassit Beach area
- Nelson Point land
 - [The last two would give the town access to the water, one of our goals.]
- Any land bordering Lake Quinsigamond

Appendix E

Fiscal Impact Analysis