

**Shrewsbury Open Space  
and  
Recreation Plan**

January, 1999

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## Section 1 - Plan Summary

Shrewsbury has come a long way during the twentieth century. Starting as a mostly rural community with scattered settlements, the town has seen phases of growth which first made it a streetcar suburb, and a resort community. During the baby-boom it was transformed into a thriving residential community. Finally, in the latter part of the century, with interstate highways all around, open land is starting to become scarce. Residential development has occurred in nearly all corners of the town and some areas are “built out”. A new phase of development which has already brought some large industry to town, may change the community once again.

This plan reflects, more than anything, a town-wide debate, not about whether open space preservation is important for Shrewsbury, but whether the town can balance the need for preservation with all the other pressing problems the town must deal with. The predominant sentiment has been that this is the last chance for preservation: only one generation into the future, given current development rates, there may not be much open land left to preserve. So the question has become will the town make preservation a priority and devote the resources necessary to make it a reality?

As enumerated in sections 6 and 8 of this plan the town’s open space and recreation goals are:

- I. Acquire, through appropriate means, key open space parcels.
- II. Plan and develop greenways in the town.
- III. Preserve and Enhance the Town's Recreational Facilities.
- IV. Protect the Town's Potable Drinking Water Sources.
- V. Protect Surface Water Resources.

These will be achieved through commitment from town residents as a whole and the concerted work of staff, elected officials and volunteers. Without a coordinated effort backed by popular support, other issues will take priority and the town may lose out on its last opportunity to preserve and protect its remaining open space resources.

## **Section 2 - Introduction**

### A. Statement of Purpose

Since 1987, the date of Shrewsbury's last open space plan, the town has experienced rapid growth. Between 1987 and 1995 an average of over 200 building permits for new residences were issued each year. By 1994, the U.S. census estimated the town's population had grown to over 26,000. This translates into about 1,200 people per square mile. No longer is Shrewsbury the agricultural community it was in the 18th and 19th centuries, nor is it the streetcar suburb of the early part of the 20th century. The town is now heavily populated.

Today, most indications suggest this will be 'the last call' for open space preservation. At the average development rate of the last two decades Shrewsbury will be mostly built out in about one generation. While the town has acquired a fair amount of open space over the years, if it intends to save any more, it appears now is the time to act. This plan is written with this urgency in mind.

### B. Planning Process and Public Participation

To guide the planning process, Shrewsbury's Board of Selectmen, appointed an Open Space Planning Committee. The committee consisted of members of the town's Conservation Commission in conjunction with staff from the Engineering Department and the Parks and Recreation Department. Members of the Open Space Plan Committee included: from the Conservation Commission, Don Gauch, Chair, John Ostrosky, Robert Jacques, Patricia Banks, and Dorbert Thomas; Town Engineer, Ed Holland; Town Planner, Fred Litchfield; and Parks and Recreation Director, Gary Hardenbrook. The Central Massachusetts Regional Planning Commission (CMRPC) was hired as a consultant to the town to draft the new Open Space Plan principally for two reasons: first, because the Commission created the previous, 1987, plan, and second, because of Commission staff's knowledge of the town and the issues it faces. Karl Dinkelspiel of CMRPC staff did the bulk of the work with assistance from William V. Scanlan, Community Development Manager.

Shrewsbury's professional staff has maintained a good handle on open space issues over the years. Staff has regularly discussed on an informal basis proposals, plans and potential acquisitions. The town has kept its open space inventory up to date and has actively pursued opportunities for open space preservation when they have arisen. The town has been particularly diligent in insuring that its cluster subdivision by-law produced meaningful open space. The town has several visible successes to its credit. In addition, through the Engineering Department, the town has a good understanding of most of the forces driving development in town, including water and sewer development, roadways, development proposals, and environmental issues. All this combined with the 1987 Open Space Plan, meant the town could "hit the ground running" with this plan.

Because of the town's thorough understanding of many of its open space and general

planning issues consensus was quickly reached about the direction this plan should take. While many background issues required by the state for open space plan were examined, the biggest focus of this plan was and is how to preserve at least some of the open space that remains in Shrewsbury. The question of where has basically been decided. The only remaining questions are how much land to protect and how to fund that protection?

To determine this the Open Space Plan Committee decided on a very direct process to solicit public input. This meant first interviewing important decision makers in the town, including the Town Manager, Parks and Recreation Director, and Town Engineer. Once consensus was reached among staff, the issue was raised with the Selectmen at a regular meeting. This discussion, which lasted over an hour, was broadcast over Shrewsbury's public access station. The Selectmen agreed on the urgency of open space preservation. These activities led up to a public hearing, sponsored by the Conservation Commission, at the Middle School Cafetorium, the night following the televised Selectmen's meeting. Special invitations were sent to over 300 potentially interested parties, including all town meeting representatives, private land owners, Parks and Cemetery Commission members, and others interested in open space issues. Approximately 50 people attended this meeting, including many town meeting representatives. While numerous concepts were expressed, not one dissented from the idea that the town should preserve open space sooner rather than later. In addition general agreement was expressed about the proposed goals presented that night.

This input together with the discussions at three Open Space Plan Committee meetings, allowed CMRPC to produce a draft plan and goals. This draft was first presented to the Conservation Commission at one of its regular public meetings. After discussion of the plan, the plan map, and the goals and objectives, another public meeting was scheduled to solicit input. Again prior to this meeting the draft was presented to the Selectmen during a televised meeting. At the second public meeting a broad ranging discussion was held, but general agreement was heard on the proposals contained in this plan.

In total public interest was generated in this plan through Conservation Commission meetings, televised Selectmen's meetings, and public meetings on the plan in general with a total attendance of over 50 people, not to mention those viewing Selectmen's meetings at home. This plan then reflects a diverse variety of opinion and will serve as the basis for moving forward on open space planning topics.

## Section 3 - Community Setting

### A. Regional Context

Shrewsbury, lying immediately east of New England's second largest city, Worcester, has evolved into a large suburban town (see Map 1). Proximity has made the town the perfect location for residential development. The town has used this to its advantage, creating many pleasant neighborhoods, a large retail shopping district, and an extensive water and sewer system.

Shrewsbury's past was more rural. Though the town is growing quickly, it is still possible to see its agricultural roots. In the early 18th century much of Shrewsbury's land was used for growing crops. Fruit orchards were plentiful as were other types of produce and livestock. Driving down many of Shrewsbury's streets it is still possible to experience a flavor of this history. There are many narrow, winding, tree-lined ways that stand in contrast to busy Route 9 and some of the other, more modern roads that cross the town. The town is even home to a few remaining agricultural operations.

Over Shrewsbury's borders to the north and south, the towns of West Boylston, Boylston and Grafton are comparatively undeveloped. Westborough directly to the east along Route 9, however, is somewhat of a twin to Shrewsbury, though residential development there is not nearly as far along. Northborough also to the east represents a community in transition from relatively rural to more suburban.

Shrewsbury and its immediate neighbors present sort of a microcosm of the history of development in Massachusetts and other urbanized states. Shrewsbury's first big development stage was as a bedroom community to the city directly to its west. Meanwhile most of its immediate neighbors maintained their small town character. With the completion of the interstates and the trend to development along them, neighbors like Westborough and to a lesser extent Grafton and Northborough began to become less rural. Here though the orientation was away from Worcester and towards the interstate highways. So another burst of residential development, this one starting in the 1980's and continuing to the present, has Shrewsbury focused more towards the east and away from Worcester. This is evidenced by the heavy residential development occurring in the northern part of town near the I-290 interchanges.

Shrewsbury's natural resources have always played a part in its development. Three or four are particularly significant in a regional context. The most obvious is of course Lake Quinsigamond. Historically this has been a defining feature, acting first as an impediment to westward travel and then as a Mecca for summer homes. The lake has for a number of years served as a recreational resource for Worcester, Shrewsbury and to some extent the central Massachusetts region. Directly north of the lake is a large and productive aquifer that stretches from the northwestern part of Shrewsbury into Boylston. This aquifer is where Shrewsbury gets the majority of its drinking water. On the east side of the community is a low but distinct ridge running almost north-south, called the Shrewsbury Ridge. This area coincidentally forms the border between Shrewsbury and

the neighboring towns of Northborough and Westborough. Its use as a recreational resource is exemplified by the Ward Hill Ski Area located within the town on the border with Northborough. This area is also an important watershed containing as it does some of the upper tributaries to the Assabet and Sudbury Rivers (SUASCO Watershed). Both the state and the town of Northborough hold land here protecting these water resources.

In a regional context, then, Shrewsbury has many forces tugging at it. First and most obviously, its suburban development pattern. Second its self-contained ground water supply, fairly unique for a town of 26,000. Finally, the remaining areas of town which are still rural in atmosphere despite the bulldozers and subdivisions in some cases only a few hundred yards away.

### B. History of the Community

Samuel Wheelock, according to historical records, was Shrewsbury's first permanent settler. He and his son built a dwelling on the north side of Main Street somewhere near the current town common in 1717. By 1727 the town had enough residents to incorporate. The original town boundaries stretched from Lancaster to the north, Sutton to the south, Worcester to the west and Marlborough to the east. Most of the town's original settlers were from Marlborough. By 1768 Shrewsbury had taken on more or less the shape it has today. By this time many large tracts had been annexed to surrounding communities or had themselves become new political entities.

Even in these early years the town had the advantage of good transportation. What is now Main Street was laid out in 1683 as a path connecting Boston to the Connecticut River towns. The current Holden street was used even before the Revolution and served as a county road connecting with Northampton. This road was part of the route from Boston to Vermont for many years. The Boston Turnpike (now Route 9) was finished in 1808 and originally crossed Lake Quinsigamond on a floating bridge. There was also "a road of considerable travel from the northward, directly through Shrewsbury to Providence." (Peter Whitney; Worcester County: America's First Frontier, pg. 135).

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

Several historical accounts say the town had good farmland, though it was difficult to till in some places. Early industries included tanning, with the first known tannery starting in 1762 on Gulf Street. There were also gunsmiths and shoemakers. The first water-driven mill was built on Mill Street by Samuel Wheelock in 1721. The Wyman Grist Mill was built about 1800 and stood downstream from a sawmill. There was also the Slocum Mill north of the town common, the Fay Mill on Prospect Street, the Davis Saw Mill on Spring Street, the Harlow Mills off Sewall and Holden Streets and another mill at the outlet of Mill Pond.



With the introduction of street cars and the extension of lines to outlying areas in the late 19th and early 20th century, Shrewsbury began to evolve from its more agrarian, small town past into a commuter suburb. The town grew quickly between 1910 and 1930, more than tripling in size from 1,900 to almost 7,000 people. In addition to permanent home settlement, the early 20th century was also a time for resort development around Lake Quinsigamond.

The next major thrust of development occurred in the post war years; the baby boom. This was a time when the town changed for good into a suburb with an influx of over 10,000 new residents. The automobile had also become firmly entrenched as the preferred means of transportation and the retail development that is now prevalent along Route 9 began in earnest.

In the last ten or so years the town has once again become a hot spot for residential development. Between 1985 and 1995 over 2,500 building permits were issued for new homes. This in turn spurred more retail development, mostly along Route 9. However, industrial development continues to occur particularly along Route 20. A large facility that currently houses Digital Equipment Corporation and Quantum Corporation, two computer companies, was constructed in the early 1980's between Routes 9 and 20. This perhaps points the way to the next phase of evolution: Shrewsbury as major employment center, though it remains to be seen whether this sort of development will continue. What is certain, is that the town will continue to be a significant residential community for many years to come.

### C. Population Characteristics

#### 1. Population.

Shrewsbury's population has increased dramatically in the last several decades. The largest increase occurred between 1950 and 1960 when the population grew by 57%, or 6,068 people. Between 1940 and 1990 the Town experienced a population change of nearly 220% or 16,581. Table 1 illustrates Shrewsbury's growth over the last fifty years.

**TABLE 1**  
**POPULATION CHANGE 1940-1990**

Year	Population	Absolute Change	Percent Change
1940	7,586		
1950	10,594	3,008	39.7%
1960	16,662	6,068	57.3%
1970	19,196	2,534	15.2%
1980	22,674	3,478	18.1%
1990	24,167	1,493	6.6%

Source: U.S. Census

As shown in Table 1, the town's population increased by nearly 1,500 between the two most recent Census'. Census estimates for 1994 show that Shrewsbury's population increased by just less than 2,000 to a total of 26,101. This is more than during the entire decade of the 1980's and indicates a quickening in the pace of development. Population density has increased from only 350 people per square mile in 1940 to over 1,200 in 1994, making Shrewsbury the third most densely populated community in the central Massachusetts region after Worcester and Webster.

Forecasts produced by the Central Massachusetts Regional Planning Commission, based on data from the Massachusetts Institute for Social and Economic Research (MISER) show population continuing to grow into the next century. For 2010 CMRPC forecasts a population of over 30,000. Towns surrounding Shrewsbury are also projected to grow through the year 2010 as shown in Table 2.

**TABLE 2**  
**FORECASTED POPULATION GROWTH**  
**FOR TOWNS SURROUNDING SHREWSBURY**

Town	1990 Population	2010 Forecasted Population	Increase 1990-2010
West Boylston	6,611	7,209	598
Boylston	3,517	4,096	579
Northborough	11,929	14,477	2,548
Westborough	14,133	18,384	4,251
Grafton	13,035	15,427	2,392
<b>Total</b>	<b>49,225</b>	<b>59,593</b>	<b>10,368</b>

Source: U.S. Census, MISER and CMRPC

Growth in surrounding towns means that Shrewsbury residents will notice not only the shrinking amount of open land in their own town, but as they pass through neighboring towns, the current feeling of open space there will also diminish. This will translate into greater regional demand for existing open land and thus more pressure to preserve additional areas.

## 2. Age.

In the most recent Census, the middle aged population grew most quickly increasing 42% over 1980. As shown in Table 2, this was accompanied by a 17.6% change in the next youngest age bracket 25-34 for a cumulative increase of nearly 2,000 residents. These changes reflect the "baby boom" generation and have direct consequences for Shrewsbury's housing market. Also of interest are the rather substantial increases in the very youngest and very oldest age categories. Growth in the five and unders represents the children of the baby boomers. The oldest of these children as of the date of this plan is just entering middle school. The need to build the brand new Floral Street Elementary

School is a sign of the impact of this age group. Growth in the 64+ group represents the longer lifespans of Americans in general.

**TABLE 3**  
AGE OF THE POPULATION 1980 AND 1990

Age Group	Residents in Age Group 1990	Residents in Age Group 1980	Percent Change 1980-1990
Under 5	1,527	1,254	21.8%
5-14	2,914	3,341	-12.8%
15-24	2,984	3,793	-21.3%
25-34	4,235	3,601	17.6%
35-44	3,985	2,798	42.4%
45-54	2,720	2,680	1.5%
55-64	2,393	2,575	-7.1%
64+	3,388	2,635	28.6%
Total	24,146	22,677	6.6%

Source: U.S. Census

All these trends will of course have an impact on Shrewsbury's open space and recreation resources. For the youngest generation, playfields, schools and other active recreation facilities are particularly important. At the public meetings for this plan, a strong need was expressed for more soccer and baseball fields for youth leagues. For those in middle age, active recreation areas for league sports may be needed as well as passive recreation facilities for activities like hiking and picnicking with the family. For the older generations, passive recreation facilities and special provisions like wheelchair accessibility may be needed. In sum these age trends taken with the increase in the town's total population will create additional pressures for the provision of open space and recreation facilities.

### 3. Income.

The 1990 Census contains the most recent income information for the entire nation, and is based upon 1989 earnings. While more current data will soon be collected in 2000, most state and federal agencies rely upon the 1990 Census as providing a reliable indicator of relative need. Shrewsbury's median household income is shown in comparison with surrounding towns and larger jurisdictions in Table 4. Shrewsbury's 1989 median household income (MHI) of \$44,248 was 20% higher than the state median, and in comparison to adjacent towns was less than Northborough and Boylston, roughly equivalent to Westborough and Grafton, and higher than Worcester, Millbury, and Worcester County as a whole. Shrewsbury's MHI ranked 116 out of the state's 351 cities and towns in the 1990 Census.

**TABLE 4**  
**MEDIAN HOUSEHOLD INCOME, 1990**

Jurisdiction	1989 MHI	Percent of Mass. MHI
Shrewsbury	44,248	120%
Northboro	57,963	157%
Westboro	44,044	119%
Worcester	28,955	78%
Boylston	52,424	142%
Grafton	42,310	114%
Millbury	37,438	101%
Worcester County	35,774	97%
Mass.	36,952	100%
U. S.	30,056	81%

4. Housing.

Even a short drive through Shrewsbury will reveal a large number of new single family homes. As shown in table 5 total housing units increased from 4,929 in 1960 to 10,060 in 1990 an increase of over 100 %.

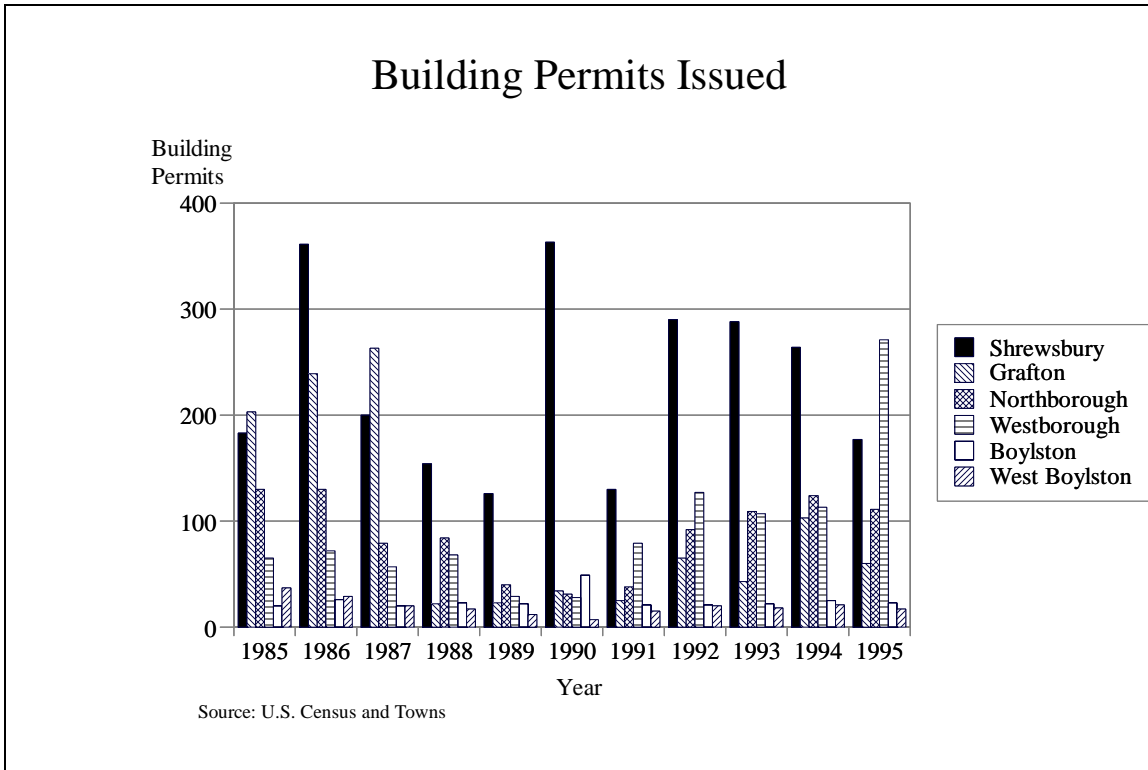
**TABLE 5**  
**HOUSING UNITS 1960-1990**

Year	Housing Units	Absolute Change	Percent Change
1960	4,929		
1970	5,803	874	17.7%
1980	8,529	2,726	47.0%
1990	10,060	1,531	18.0%

Source: U.S. Census

Building permit data also reflects this growth. Figure 1 shows building permits issued for the period 1985 through 1995 (an even more recent period than census data).

**FIGURE 1**



In total Shrewsbury issued over 2,500 residential building permits during this period. As a rough estimate, these units alone translated into 1,250 acres of open land permanently converted to development (assuming an average of 1/2 acre per house including roads and other facilities). Further, as the graph shows, between 1988 and 1994, Shrewsbury approved the greatest number of housing permits relative to its neighbors. Between 1992 and 1994 building permits averaged about 280 per year. Using the town-wide average of about 2.5 people per household this translates into over 700 new residents per year.

### 5. Employment

With an excellent transportation network, Shrewsbury has been able to attract a significant amount of commercial and industrial growth, and as a result, the Town enjoys a diversified tax base. Route 20 is known for its numerous trucking terminals, including UPS, Red Star Express Lines, and Roadway Express, and along I-290 lies a large U. S. Postal Service distribution facility. Route 9 contains a great deal of retail development, including Spag's, Home Depot, Home Quarters, White City Shopping Plaza, Olde Shrewsbury Village, and recently, Borders Books. Shrewsbury contains a mix of older manufacturing plants and newer high tech companies. Modern industries include Digital Equipment Corp., Supercon Inc., and Quantum Corp. In 1990, 9,864 people were employed in Shrewsbury, for an employment density of 476 per square mile; only Worcester (2,278), Westboro (796), and Auburn (526) in Central Massachusetts were higher.

Shrewsbury's labor force is generally well-educated. According to the 1990 Census, over 87% of the population 25 years and older has a high school diploma, 36% have a bachelor's degree or higher, and 16% have graduate or professional degrees. This high level of educational attainment is reflected in the occupations of Shrewsbury residents. According to the 1990 U.S. Census, 38% are employed in managerial and professional occupations, and 36% have technical, sales, and administrative positions. The number of residents in the labor force has increased with its population growth. From 12,211 in 1983, the labor force has grown to 14,153 in 1996, for a 16% increase.

D. Growth and Development Patterns

1. Patterns and Trends.

Shrewsbury's total area equals about 13,905 acres or roughly 21 square miles. Areas covered by open water bodies account for approximately 560 acres or about one square mile. As part of this plan CMRPC developed updated digital land use coverages for the town. These coverages show that by 1995 around 6,900 acres had been developed. By contrast in 1971 approximately 4,200 were committed to development. In 1995 then developed land had increased about 65% in 24 years.

It will come as no surprise that most of the developed land in Shrewsbury is dedicated to residential purposes. Table 6 below shows the approximate amounts of land in each developed land use category as of 1995.

**TABLE 6**  
1995 DEVELOPED LAND

Land Use Category	Area in Acres	Percent of Total
Commercial	428.4	6.1%
Industrial	645.3	9.1%
Residential	5,410.2	76.6%
Recreation	159.3	2.3%
Transportation	420.6	6.0%
<b>Total</b>	<b>7,063.8</b>	

Source: MassGIS and CMRPC

The three categories, commercial, industrial and residential have all grown since 1971, but it is the 2,200 plus acres of new residential development that is particularly eye-catching. Though the town has experienced growth in the other categories, it amounts to only 300 to 400 acres. Residential development of course translates into new families, which in turn translate into an increased need for services for everything from schools, police, fire, sewer and water, to recreation and open space facilities. Table 7 breaks out land use categories for 1971.

**TABLE 7**  
1971 DEVELOPED LAND

Land Use Category	Area in Acres	Percent of Total
Commercial	294.4	6.8%
Industrial	357.9	8.3%
Residential	3,152.1	72.8%
Recreation	133.5	3.1%
Transportation	390.8	9.0%
<b>Total</b>	<b>4,328.8</b>	

Source: MassGIS

Maps 2 and 3 illustrate quite strongly Shrewsbury's pattern of development in the last generation. While residential growth has been scattered throughout the town, the largest concentrations have been in the northeast corner and the center of town particularly towards the east and near Route 9. This pattern reflects the fact that the central and western part of town, with easy access to Worcester, were already developed in 1971, but it also shows the influence of commuting routes to the east, particularly Interstates 290 and 495. Commercial and industrial development has generally centered on Routes 20 and 9 with far lesser amounts on Routes 70, 140 and Interstate 290. Clearly this reflects the zoning in these areas (shown in Map 4), but also to some extent the level of demand.

What Map 3 shows is that the largest general areas left for development are found in the southeastern part of town and to a lesser extent in the south central, east central and northwestern parts of town. The southeast, in particular seems to present the easiest opportunities for substantial open space preservation for several reasons: 1) Water and sewer infrastructure is more limited in this area; 2) the local road network is relatively undeveloped; 3) much of the area is still wooded or in agricultural production; and 4) land in the neighboring towns of Grafton and Westborough is similarly sparsely developed. These issues are discussed in more detail in Section 4, Environmental Inventory and Analysis.

## 2. Infrastructure.

### a) Transportation Network.

Shrewsbury has an extensive roadway system as shown in Map 5. A total of five numbered highways cut through town including Interstate 290, running along the Town's northern edge. Numerous local roads are concentrated in a southwest to northeast diagonal through the center of town, while areas in the northwest and southeast have less extensive networks. Routes 9 and 20 have become Shrewsbury major commercial roads. Route 9, which at one time was the major east-west link between Boston and the western part of the state, is now home to many of the town's retail establishments. Route 20, on the other hand, has more in the way of industrial facilities including several large trucking/warehouse operations.

Of course there are many ways to get around other than by car. Shrewsbury has public bus service provided by the Worcester Regional Transit Authority (WRTA). Four routes currently serve the town. The number 15, which goes through the center of town, is the most heavily used and runs by Dean Park. For non-motorized transportation, the town has an extensive system of sidewalks, particularly in the older residential areas in and around the town center. Subdivision regulations also require that new developments provide sidewalks, though in some cases these terminate at the older collector roads that do not have sidewalks.

Formal trails and bikeways by contrast are almost non-existent. The town has no designated bikeways and no developed bike paths. There are some off-road trails but most of them are either informal, through various open space parcels, or limited to areas within some of the town's cluster subdivisions. These facilities are an obvious area of focus for any comprehensive recreation and open space program.

#### b) Water Supply System.

Shrewsbury has made a substantial investment in its water and sewer systems. The water system is particularly extensive, serving nearly every home and business. All of Shrewsbury's water is supplied from ground water wells. The Home Farm and Sewall Street well, are the most productive, but the town has two other less productive sources in the Lambert and South Street sites. A large and very productive aquifer is located to the north and east of Lake Quinsigamond, and it is this aquifer that provides a majority of the town's water. According to the engineering department there are few remaining opportunities for the town to develop new wells. Safe yield for the current system is about 6.2 million gallons per day (MGD) while average use is about 3.5 MGD. While at first glance it appears there is substantial surplus capacity in the system, as a rule the town prefers to reserve approximately half daily average usage for emergencies. Should growth continue at its current pace water supply could become an issue.

The town's water lines and well sites are shown on Map 5. Shrewsbury has also built a water filtration plant because the toxic chemical TCE was detected in the water supply. The plant is now operational and has a capacity of 6.0 MGD.

#### c) Sewage Disposal System.

Shrewsbury's sewer system is also well developed but not to the extent of the water system. As Map 5 shows, areas without sewer service include a large part of the southern side of town and the northwest area around Holden, Clinton and Sewall Streets. Plans have been finalized, and funds identified to sewer the Edgemere neighborhood in the southwest part of town. This should help alleviate pollution problems in the lower part of Lake Quinsigamond and Flint Pond. However, installation of sewers in the Holden/Clinton/Sewall Street area will likely wait until substantial new development is proposed in the area.



Sewage is now pumped to a shared treatment plant in Westborough. First, however, sewage flows through the town's former treatment plant in Northborough, which was shutdown in 1987 as a result of inadequate treatment. The combined Shrewsbury/Westborough plant has a design capacity of 7.7 MGD, while total usage is about 4.5 MGD, again leaving substantial capacity to handle additional development. Of the total sewage flow at the plant, Shrewsbury accounts for on average about 3.2 MGD while Hopkinton sends only about 40,000 gallons. The town of Westborough accounts for the rest.

With extensive water and sewer infrastructure systems, Shrewsbury brings to the table many advantages for development. Having these systems in place makes developing in town significantly more attractive than towns without such facilities. Further, the systems allow zoning for smaller lot sizes which increase housing and population density. While the town certainly sees environmental benefits from these systems, the encouragement they provide to development, particularly residential, creates issues for recreation and open space preservation. First with a larger population the town requires a greater number of facilities for active and passive recreation. Second, with such a large excess capacity in these systems, much of the town's land is attractive for development which in turn creates pressures for development. This not only eliminates open land to use for open space and recreational purposes, but also tends to raise the price of any remaining land. Finally, because there is such a large residential component to the tax base, any initiative which seeks to acquire more land will tend to increase taxes to homeowners (voters), a consequence some residents might not favor.

### 3. Long-Term Development Patterns

The long term outlook for development in Shrewsbury is one of rapid residential growth and moderate non-residential growth. A build-out analysis prepared by CMRPC for this plan indicated that within one generation, perhaps 20-25 years depending upon economic pressures, all of the remaining, developable land zoned for residential use will be lost for single family housing.

Several factors lead to this conclusion:

The number of building permits issued in recent years has been extraordinarily high, averaging about 230 units per year.

Shrewsbury has carefully planned its water and sewer systems to accommodate increased growth. Capacities exist in its water supply and joint sewage treatment plant, and developers are willing to pay to connect to the Town systems.

In a regional context, CMRPC's "Growth Suitability Model" clearly shows that the communities to the east of Worcester, especially Shrewsbury, Northborough, Westborough, and Grafton, have ideal conditions for accommodating regional growth pressures. Given strong growth pressures from outside its borders, and

many amenities desired by owners of costly new single family homes, growth in Shrewsbury will continue unabated.

Residential growth will continue to spread to the remaining undeveloped Rural and Residential districts as shown on Map 4. Most of this land lies to the south and east and will require extensions of water and sewer lines. Developers in the past have been willing to install these lines at their own expense since land values for developable lots are sufficient to cover the costs. While most of the central portion of the Town has developed, parcels passed-by will gradually fill in with new subdivisions due to the high land uses for approved lots. In the northeast corner of Town, many new subdivisions have been approved in recent years in Rural districts, and as extensions of water and sewer lines are made, single family subdivisions will push to the town borders.

Shrewsbury's lot area requirements are much less than surrounding suburban communities, and can accommodate two to three units per acre. As might be expected, however, the remaining undeveloped land has greater constraints for development and will require more expensive engineering solutions to prevent environmental impacts. The town does have a heavily used cluster development option which is attractive to developers because of a density bonus and lower street construction costs. The town has been able to acquire many small parcels of open space which can be seen on Map 9.

The Growth Suitability Model also identifies Shrewsbury as an ideal location for new industrial, office and retail uses. The Town's excellent highway network contributes to its desirability for non-residential development. Route 20 has a significant amount of available land zoned for industrial purposes. Proposed sewer line extensions will increase its development potential, and there will likely be conversion of low value trucking and distribution companies to higher value manufacturing and perhaps office uses. Route 9 now contains most of the Town's major retail activity, with a mix of new first class office and older industrial and personal service establishments. The little remaining vacant land will soon be developed, and pressure will be exerted on older, smaller properties to convert to higher value uses.

New office and industrial parks can be expected eventually to occur in properly zoned land in several locations: in Centech Park on the Grafton border; where the Worcester Business Development Corporation has developed a new bio-technology park; in the Limited Office Research district along Maple St, where the Worcester Foundation for Experimental Biology was recently acquired by UMass Medical; and in the Office-Research district at the I-290 / Rt. 140 interchange.

In sum, land is quickly being purchased by developers and plans are being approved on a regular basis by local boards. There is increased concern among the residents of the town that most of the remaining open space will soon disappear as the town approaches build-out. The urgency of this inevitable conclusion was not lost on Town Meeting. In 1997, the town approved a \$5.0 million override to buy open space. Already several key parcels have been purchased as the town has moved quickly to secure valuable open space for future generations.

## Section 4 - Environmental Inventory and Analysis

### A. Geology, Soils and Topography

Shrewsbury's landscape is variable, elevations range from 755' at Rawson Hill to approximately 350' in the Edgemere section. Relatively small pockets of steeply sloping land are scattered throughout the town, though there are no large contiguous areas. On individual parcels steeply sloping land, particularly areas over 25%, present problems for development. However, on a town-wide basis, since these areas are relatively limited, they do not pose a major constraint. The 1987 open space plan recognized four areas of particular note with respect to 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.

In more rural and agricultural communities soil types and characteristics are of critical importance for development. In Shrewsbury, where large portions of the town are served by central water and sewer systems, and there are few agricultural operations, soil constraints play a relatively minor role in development. As with slopes, confined areas of poor soils, like those with high water tables or that are very rocky, do pose some development constraints. Again, on a town wide basis, these constraints are generally not a hindrance.

The U.S. Department of Agriculture has produced a soil survey for the town. It found that Shrewsbury is covered by five general soil groups. The approximate percent of land area is shown in Table 8 below. Map 6 shows the location of the groupings.

**TABLE 8**  
**SOILS DATA**

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

To make soils information easier to understand on a town-wide or regional basis the USDA creates these generalized groupings. However, in practice there are dozens of distinct soil types that cover the town. Soil scientists determine a number of variables for these types including depth to bedrock, height of the water table, suitability for in ground septic systems, and ability to support agricultural uses. While this plan will not go into the details of this data, it is important to note that even though Shrewsbury's central sewer and water systems diminish the importance of specific soil characteristics, they still impact development on a location-specific basis. Shallow soils may cause the need for

blasting and thus add to expense. Other types that are relatively unstable may necessitate special berms or embankments.

Within the five major soil groups the Hinckley-Merrimac-Windsor soils are the best suited for development (though this generalization is very broad). Chatfield-Hollis soils on the other hand generally have more severe limitations than the other soil groups. Shrewsbury's most extensive soil group, Paxton-Woodbridge-Canton, moderately limits development. A high water table and the potential for frost action are particular problems. With respect to recreational development, the soil survey observes that in the Paxton-Woodbridge-Canton soil group playgrounds are difficult to create because of the proliferation of rocks and stones. Other recreational uses including trails and picnic areas are less severely impacted. Soil types are one factor to consider in development decisions, however, in Shrewsbury other factors will play a more significant role.

### B. Landscape Character

Shrewsbury's landscape is characterized by variability. Its uneven topography and large number of high volume transportation routes create many distinct smaller landscapes. It would be difficult to paint Shrewsbury's landscape in one broad brush.

As mentioned elsewhere in this plan, Shrewsbury's two major defining landscape features are Lake Quinsigamond in the west and the Shrewsbury Ridge to the east (see Map 7). Views of the lake are afforded particularly from the town's major east-west roadway corridors. Coming west on Interstate 290 the driver is given a rather sweeping view of a well defined valley with relatively high and steep embankments on the western (Worcester) shore. From Route 9 heading toward the lake, a few blinks and the observer might miss it amongst all the retail development on both sides. Then on Route 20 to the south, the lake is visible in various places, but here as more of a swamp than a deep finger lake. Otherwise there are few if any extended views of the lake from major public places. It is an ongoing challenge for Shrewsbury and Worcester to preserve the environmental quality of the lake within its heavily developed watershed.

Shrewsbury Ridge in contrast to Lake Quinsigamond has many scenic spots though none particularly grand. Perhaps the easiest view is from on top of Ward Hill ski area. Though privately owned, it affords skiers a nice place to see the surrounding scenery. While there is no public open space on the ridge, the many roads that cut through the area provide the experience of being in a typical New England forest.

Rawson Hill in the northeast part of town, near Interstate 290, is the town's highest point at 755' above sea level. While a subdivision flanks it to the north, the hill itself is partially owned by the town's Conservation Commission. The Shrewsbury Sportsmen's Club owns a small piece of land at the western foot of the hill and the state owns an area to the south as part of the SUASCO watershed. Additional wetlands, some owned by the Conservation Commission, and the Northborough Reservoir lie just to the east. Together these properties and features create a landscape with a great deal of diversity. More

prominent access and trails could make this into an interesting and well used passive recreation area.

Another important landscape feature is the Slocum Meadow. This over 300 acre wetland/floodplain complex covers a large portion of the northwestern part of town, straddling Interstate 290. There are few ways to experience this land. Limited views are available from Gulf Street, but there are no direct public access points. Some of the land is in public ownership, but most of it is in private hands. The town might consider working more actively with the various owners to make this a more widely used area for passive recreation and education.

Boston Hill and Green Hill in the southeastern parts of town also represent important landscape features. Again public access is limited, but there are views onto them from neighboring towns. Westborough specifically mentions Green Hill in its open space plan as a place where inter-community cooperation could preserve an important resource. These two features are also located in the largest remaining undeveloped area in Shrewsbury. Generally the area is bounded by Route 20 to the north, Cherry Street on the west and the town line elsewhere. Appreciable development has occurred along Arch Street in the far southeastern part of town, but otherwise development is sparse with large tracts of intact forest. Further, the state owns several large parcels of land that are part of the Grafton State Hospital. Most of this land is relatively undeveloped. Couple this with some beautiful farm land on Green Street, currently receiving Chapter 61 and 61A tax exemptions, and the town has the making for an ideal place to establish hiking trails, and other passive recreation and conservation areas.

So while the motorist passing through town on Route 9 may suspect there are not many natural areas left in Shrewsbury, the truth is that the town has a number of important and beautiful landscapes that could be meaningful amenities if preserved. Preservation by itself is an important goal, but raising public awareness and providing good access will make these areas truly part of Shrewsbury.

### C. Water Resources

About one square mile, or less than 5%, of Shrewsbury's total surface area is comprised of open water in ponds or lakes. Aside from Lake Quinsigamond, which is partially located in Worcester, other surface water bodies include Jordan Pond, Mill Pond, Newton Pond, and a portion of the Northborough Reservoir. As has been well documented, many of these waterbodies, particularly Lake Quinsigamond face pollution threats. Old, on-site waste disposal systems, runoff from roads, and storm sewers all contribute to diminished water quality. Efforts are on-going to slow down water quality degradation, but to date pollution remains a serious threat to the health of these water bodies. Town water resources are shown on Map 8.

Wetland areas are also significant. According the state and federal sources the town has in excess 500 acres of wetlands. Slocum Meadow, located in the vicinity of I-290 midway between the Route 140 interchange and the city of Worcester, is the largest.

This area is comprised of wetland soils, an open stream (West Brook) and associated floodplains covering over 300 acres. The Meadow is almost entirely undeveloped with the exception of a few trails. Several other large wetland areas are spread around town including some in the northeast owned by the state as part of the SUASCO watershed, another area due south of Dean Park not far from Main Street and another area around and to the west of the New England Power Company transmission lines northeast of Flint Pond. There are numerous smaller wet areas throughout the town. These are important places for resource protection because they provide many benefits to the town including: flood prevention, filtration for groundwater, and plant and animal habitat.

Shrewsbury is divided by the watersheds of two major rivers, the Blackstone and Concord (including the Sudbury and Assabet). The Blackstone watershed covers approximately the western 2/3 of the town, while the Concord covers the remaining areas in the east. However, because of Shrewsbury's relatively high elevation, no major rivers pass through the town. The most significant named stream in the Blackstone watershed is the Big Bummet Brook which flows due south into Grafton. In the Concord watershed, Hop Brook and Straw Hollow Brook are the most notable. There are numerous smaller streams as well. Streams and brooks are important natural resource corridors. They contain the habitats of many plants and animals. They also channel runoff into waterbodies like Lake Quinsigamond. In many ways the health of streams and brooks dictates the quality of water in these larger water bodies.

Most importantly perhaps are the town's groundwater resources. A large and very productive aquifer is located in the northwestern area of town. It runs from Boylston southerly into Shrewsbury through the area of Newton Pond and down toward Lake Quinsigamond. This aquifer is where the town's most productive wells are located: the Home Farm and Sewall Street wells. Shrewsbury has an inter-municipal agreement with the city of Worcester to allocate ground water resources in the Lake Quinsigamond aquifer. The agreement limits Shrewsbury's use to 58% of the safe yield or approximately 7.5 MGD. This is also an area where sand and gravel mining has removed much of the soil covering thereby greatly diminishing natural recharge capacity. In addition, nearly all the homes and businesses in the area have on-site septic systems versus municipal sewer connections. Another, though minor, aquifer is located off South Street in the vicinity of Floral Street. For the most part, the town has utilized most of the usable capacity of these aquifers. As such there are few opportunities left for the town to develop additional sources for municipal groundwater supplies.

Protection of these resources is absolutely essential to the long term health of the community. There are no other major aquifers in town and the remaining areas that have not been tapped are nowhere near as productive. Pollution of any of these aquifers could mean a crisis of major proportion. The town has already had a taste of the implications of ground water pollution when the highly toxic TCE was detected in the water supply. As a result the town constructed a water treatment facility at a cost of then \$5.5 million. Subsequently the town has also adopted strict aquifer protection regulations. However, as discussed above there are existing land uses both inside and outside aquifer protection zones that pose a potential threat to the town's drinking water. It would make sense to

work toward even greater protection of these resources including acquisition of land within the primary recharge areas of the wells.

#### D. Vegetation

Trees and other forms of vegetation provide important resources for a community. Vegetation serves as an anchor to topsoil helping control erosion. It also provides shade, animal habitat and aesthetic beauty. Traditionally timber harvesting has played an important part in New England's economy. Many years ago this was true of Shrewsbury as well. Though some harvesting still goes on in the town, it is of only minor significance.

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. Even so the town still has a good variety of hardwood, mixed hardwood and softwood forest. Heights of mature vegetation range from 20' to over 50'. Species are those commonly found in southern New England. 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 are dominated by pine (white and pitch) and hemlock. In the southeastern part of town where the least amount of development has occurred, a beautiful mixed forest of birch, hemlock and oak covers much of the area. The understory is typically dominated by witch hazel, black huckleberry, and Pennsylvania sedge.

Few fields remain from Shrewsbury's agrarian past, with a notable exception of Route 140 south of the center of Town, where one of the town's last remaining farms provides a pleasant vista of the Shrewsbury Ridge to the east.

In forested wetlands, overstory vegetation is dominated by red maples, with green ash, American elm, ironwood, and dogwoods. The canopy in such swamps often reach 30-40'. The shrub level generally 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.

Wet meadows are dominated by cinnamon and sensitive fern, tussock sedge, reed canary grass, and sphagnum moss. It is also not uncommon for this type to be dominated by purple loosestrife, an invasive and opportunistic species. Intermittent stream bank wetlands are vegetated by species such as red maple and arrowwood.

According to the *ACEC Nomination Form* for the "Lake Quinsigamond Aquifer Resource Area" (1992), Flint Pond, the basin 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 wetlands support populations of emergent vegetation including broad-leaf cattail, purple loosestrife, pickerelweed, swamp willow, arrowhead, and burreed. At the fringes are such woody riparian species as silky dogwood, speckled alder and red maple. White water lily and other aquatic macrophytes are also present in shallow water

areas. The resultant vegetative mix creates a wealth of edge habitat for wildlife, while providing significant pollutant attenuation and sediment removal capabilities. The report indicates there are 533 wetland acres associated with this system, enough to support diverse, naturally-functioning wildlife populations.

## E. Fisheries and Wildlife

### 1. Wildlife

As a result of the rapid development in Shrewsbury within the last several decades, the number and diversity of mammal and bird species has declined. The disappearance of wetlands, wooded areas, and open fields has resulted in a decrease in habitat and thus a loss of animals that were once commonly seen in town. Several large more or less unbroken tracts of land can still be found in isolated sections and thus provide the best places for animal habitat. Slocum Meadow, a large upland wetland remains mostly intact and supports a variety of species common to this type of habitat. The southeastern area of town around Cherry and Green streets provides relatively continuous forest cover coupled with areas in northern Grafton and western Westborough. Here typical forest animals may find a home. In most of the rest of the town the landscape is much more divided and the quality of wildlife habitat diminishes.

Approximately 200 species of birds either inhabit Shrewsbury year-round or have been observed in town during periods of migration. Year round inhabitants are typical of birds found in suburban communities in central Massachusetts and include: chickadees, finches, starlings, sparrows, cardinals, woodpeckers, red-winged blackbirds, ruffed grouse, and red-tailed hawks. Lake Quinsigamond provides a place for wintering birds such as geese, ducks, and grebes.

As noted in the *ACEC Nomination Form*, during 1991 a total of 244 bird species were recorded in Worcester County by the Forbush Bird Club. (See Appendix C for the Forbush listing, as well as mammals, amphibians, and reptiles thought to occur in the Town.) Many of the waterfowl species recorded in the list commonly utilize or frequent the open habitat of Lake Quinsigamond while others depend on the associated wetlands and upland communities in the area for cover, breeding habitat, and food sources. These include, or may potentially include, ducks, herons, gulls, and loons. As the Town continues its conversion to developed land uses, alteration of wildlife habitat will have a direct impact on birds. Changes in habitat will encourage such species as bluebird, tree swallow, robin, house wren and house finch to utilize wood edges and/or feed in open areas, while discouraging habitat utilization of deep wood bird species such as towhee, wood thrush, vireos, and pileated woodpecker.

Mammals that typically live in suburban central Massachusetts communities include gray squirrels, eastern cottontail rabbits, woodchucks, muskrats, raccoons, opossums, bats, deer, red foxes, and shrews. Wetlands provide habitat for a variety of amphibians and reptiles, including spring peepers, green frogs, spotted salamanders, American toads, wood and spotted turtles, and several varieties of snakes.



## 2. Fisheries

Lake Quinsigamond is one of the region's most important fishery resources. The lake attracts anglers for its challenges in landing valued warm-water species as northern pike, chain pickerel, common carp, white perch, and largemouth bass. The Mass. Department of Fisheries and Wildlife (MDFW) regularly stocks the lake and surrounding ponds with brook, rainbow and brown trout. During recent years, Atlantic salmon brood stock (i.e. large adult fish maintained at hatcheries for spawning purposes) have been introduced into Lake Quinsigamond producing an adjunct fishery that has attracted anglers from throughout New England. The lake has also been the site of the East Coast Bassmasters Championship Tournament. (*ACEC Nomination Form*, page 3)

Many of the species noted above are found in Shrewsbury's other ponds, and provide an important recreational resource for local residents, particularly Jordan and Newton Ponds. MDFW stocks trout in Big Bummit Brook in southern Shrewsbury, as well as in Lake Quinsigamond.

## 3. Massachusetts Natural Heritage and Endangered Species Program

Shrewsbury contains several areas with rare species habitats as designated by the state's Natural Heritage and Endangered Species Program (MNHESP). This program seeks to identify habitat of plant and wildlife species which are becoming increasingly rare and are in danger of extinction. By disseminating information on locations where such species occur, the MNHESP encourages communities and developers to protect their unique habitat requirements in order to allow the species to naturally sustain a healthy, growing population. Such areas enjoy special protection when developments are proposed near-by which may threaten the habitat with disruption. If at all possible, Shrewsbury should seek to acquire such habitat by donation or purchase, or work with private landowners on alternative preservation techniques such as conservation restrictions and habitat management.

Appendix D contains the MNHESP habitat maps of the rare and endangered species in Shrewsbury, as well as information on the species and their requirements. Spotted turtle (*Clemmys guttata*) habitat is located around South and Floral Streets, and along Big Bummet Brook in the vicinity of Route 140 and Grafton St. Wood turtle (*Clemmys insculpta*) habitats can be found around Straw Hollow Brook and along West Brook in Slocum Meadow. Spotted turtles were seen in two locations in Shrewsbury in 1997 and 1998, while wood turtles have not been verified since 1987. Both turtles are listed as species of "special concern". Such a designation by the MNHESP indicates that a species is suffering a decline that could threaten its viability in the state, or which occurs in such small numbers or with restricted wildlife habitat that the species could become easily threatened. The MDFW runs a special program to study turtle populations and encourages local involvement as a way to insure the preservation of the species.

Spotted turtles reside in wetland habitats, both forested and non-forested, preferring marshy meadows, small ponds and brooks, and other shallow water bodies. The species requires a soft substrate and may bury themselves in mud and detritus if disturbed. They often bask along the water's edge, in brush piles, and overhanging vegetation. The species is highly prized by the pet trade, and illicit commercial exploitation is depleting the population. Development and habitat fragmentation from increased residential development, construction of new roads, and destruction of upland habitats all severely impact the spotted turtle.

Shrewsbury has one vernal pool that was certified in 1996 located south of Route 9 and east of Cherry Street. Three listed plants are also believed to be found in Shrewsbury: Philadelphia panic grass, last seen in 1929, black cohosh, last observed in 1947, and Houghton's flatsedge (1945). 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. Philadelphia panic grass and Houghton's flatsedge are species found in dry, sandy ground, while black cohosh is a species of dry or moist soil.

#### 4. Wildlife Corridors

With its north-south orientation along the eastern edge of the Worcester metropolitan area, Lake Quinsigamond has special significance as a regionally important wildlife migratory corridor. Due to the extent and intensity of surrounding development on the Worcester side, the large expanse of open water around the lake attracts and supports many species which do not typically occur in such urban settings. Northerly of Lake Quinsigamond in Boylston lies the Wachusett Reservoir, while to the south, following the Quinsigamond River, lies Fisherville Pond in Grafton and its associated wetland areas. These large water bodies help define the migratory routes for birds wintering in warmer climates, such as Canada geese, mallards, black ducks, and herring gulls.

According to MDFW, the main basin of Lake Quinsigamond is available to migratory waterfowl, but it does not appear to function as a primary resource area for them due to its great depth and the limited occurrence of aquatic vegetation along the lakeshore. Flint Pond, with its shallower depth and large emergent wetland areas, offers more suitable habitat. The MDFW reports that the lake environment provides breeding areas for mallards, black ducks, Canada geese, spotted sandpipers, and possibly the green-backed heron. The Lake's ecosystems also provide an important overwintering area for many species of birds because of the quality of the inland water bodies and fisheries habitat. (*ACEC Nomination Form*, pages 21, 22)

#### F. Scenic Resources and Unique Environments

Shrewsbury Ridge runs along the eastern border of the town. It is a long low rise which stretches from Littleton in the north to Shrewsbury. It is noted in the Massachusetts Landscape Inventory as a "noteworthy landscape".

As already discussed, Lake Quinsigamond is perhaps the most defining single natural feature the town has. It is a “finger lake” which forms the border between Worcester and Shrewsbury (though a majority of its waters are in Shrewsbury). The lake has been actively used for years, first as a home and hunting ground for the native people of the area and later as a resort area for the region’s modern inhabitants. It also has a history as a prize fishing ground. Over the years however, its deep waters have been slowly polluted by surrounding development to the point now where it is sometimes closed for swimming in summer months, though water quality has improved somewhat since its nadir in the 1980s.

Shrewsbury’s historic district was accepted onto the National Register in 1976. The district surrounds the town common on Main, Prospect, Boylston and Grafton Streets as well as Church Road. Aside from the common itself, structures on the register include the First Congregational Church, the Brick School House, the Public Library, and the Jonas Sloan House as well as several homes. The Artemas Ward Homestead was also accepted onto the National Register in 1976 and is located across from Dean Park on Main Street.

### G. Environmental Problems

Having been home to urban-type land uses for many years Shrewsbury has its share of hazardous waste sites. As of the date of this plan, the state Department of Environmental Protection (DEP) reports a total of 21 hazardous waste (21E) sites. While each site has its own particular problems a few general statements apply: 1) the sites are located on the town’s most traveled state highways, Route 9 (5 sites) and Route 20 (9 sites); 2) gas stations, either active or former, make up the majority of the sites; 3) as a result, the most common problems are soil and/or ground water releases of petroleum products from leaky underground storage tanks. This set of problems applies to 10 of the sites.

The place with the most problems is at a former wire and cable manufacturer on Route 9. There a range of pollutants has been potentially identified which include PCBs, heavy metals and chlorinated solvents. Remediation of this site is ongoing. One other particularly significant release involves a site on Holden Street near the town’s well fields. While this incident does not appear to pose a direct threat, it serves to highlight the need for strict control over potential polluting activities near the town’s drinking water supplies.

Two major landfills are located in town, one inactive, the other active. The former town landfill is located on the east side of North Quinsigamond Avenue about 1/2 mile south of Main Street. It was closed in 1976 and has not been reused. No major pollution problems have been reported since the closure. Central Massachusetts’ regional ash disposal landfill is located on the south side of Route 20 between Cherry and Green Streets. The site takes the byproducts of the regional waste combustion facility in Millbury. Disposal will continue on the approximately 200 acre site until at least 2006. The site is partially lined and run by the same company, Wheelabrator, responsible for operation of the combustion plant.

With only a number of relatively small streams, the town has had very little experience with flooding. One water resource management area owned by the state is located in the northeast corner of town, but serves mostly to insure against downstream pollution in the Concord River basin and the town of Northborough. Otherwise relatively strict subdivision control laws have served to limit the amount of erosion and sedimentation of water resources.

As discussed in subsection C above, the town has already experienced contamination of its groundwater resources from industrial sources. In addition, the town's surface waterbodies, particularly lake Quinsigamond, are experiencing pollution problems. Pollution at Lake Quinsigamond results mainly from non-point sources. Generally, known point sources were identified and remediated by the 1980's.

A large source of non-point pollution of the lower part of Lake Quinsigamond and Flint Pond comes from the Edgemere neighborhood. Here former summer homes have been turned into year round residences, overburdening their septic systems. Extension of sewer lines to this area during 1997-98 should have a significant positive impact on water quality.

During 1996 the Belmont Street drain and nearby sewer pipes in Worcester were suspected of leaking raw sewage and stormwater into Lake Quinsigamond causing several closures of the public beaches, a situation that hadn't occurred for several years previously. Other non-point sources of pollution include roadway runoff, and snow dumping. Most of these problems have been identified in other studies. It remains up to the municipalities to insure that proposed solutions are implemented.

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

Shrewsbury's open space inventory covers 191 parcels and 3,661 acres. It was compiled principally by Shrewsbury's Engineering Department and Conservation Commission. Their data was forwarded in 1993 to MassGIS for inclusion in the state's open space coverage and makes up the bulk of the inventory. Two other sources of data were combined to create the final inventory: 1) CMRPC identified approximately 25 parcels in the assessor's database that had not been included; and 2) Town staff identified additional parcels acquired between 1994 and 1996, and CMRPC added these to the inventory. All this data is shown in Map 9.

Private entities hold the largest percent of the open space acreage, accounting for about 58% of the total or roughly 2,108 acres. Much of this land receives Chapter 61 tax exemptions for forestry, agriculture, or open space. Under Chapter 61, landowners manage their land for forestry production under an approved forest management plan prepared by a registered forester. Such landowners act as stewards of the forests and take measures to increase timber production and improve wildlife habitat. The Chapter 61A tax abatement program enables landowners engaged in active agricultural uses to have their land assessed for its value as agricultural land, not its value for development. With the many difficulties of running a viable agricultural enterprise in the northeast, the intent of the program is to help insure that the local property tax burden on farmers is one factor that does not encourage farmers to sell off their land for development. These programs have been very successful in Massachusetts in helping private landowners to preserve open space and retain rural character.

These programs do not offer permanent protection of open space, however. This could be an important issue for two reasons. First, all this land could one day be converted to non-open space uses with relative ease. Second, the town has the right-of-first-refusal on all Chapter 61 lands. When a landowner receives a bona fide offer to purchase his property, the town has the right to match that amount, but must do so within 120 days, a relatively short time period for a municipality. This could result in the town missing a number of opportunities to retain land that it would otherwise be interested in.

Municipalities hold the next largest share of open space accounting for approximately 32% of the total. Of this amount the town of Shrewsbury owns over 81%. Worcester and Northborough are the other municipal owners of land in Shrewsbury. State government holds only about 400 acres in town accounting for about 25% of all publicly owned land and 10% of all land in the inventory. Grafton State Hospital and the Glavin Center make up the majority of this land. Neither of these two sites has any permanent protection and both could eventually be sold and redeveloped.

One open space preservation issue facing the town is the lack of non-profit involvement. These organizations have been very helpful in other communities. Non-profits do not have the same restrictive processes that often slow down or stand in the way of municipal protection efforts. In some cases they may have cash to use for acquisition, but usually

their real value comes in the form of expertise and good relations with individual property owners. In Shrewsbury, the New England Forestry Foundation (NEFF) is the only non-profit entity shown holding land. Several local organizations including, the Sudbury Valley Trustees, The Greater Worcester Land Trust, and the Grafton Forest and Lands Conservation Trust all cover Shrewsbury. Regional organizations such as Massachusetts Audubon and NEFF, and national organizations such as the Trust for Public Land, could all potentially lend assistance to the town in helping preserve open space.

The following then, is a compilation of data on most of the open space parcels in Shrewsbury. Analyzing and updating the inventory should be an ongoing task. The map and inventory identify whether each property is permanently protected (P) or unprotected (U). Not all publicly owned land is permanently protected. State land under the jurisdiction of the Department of Environmental Management and Department of Fisheries and Wildlife is permanently protected open space, but Grafton State Hospital and Glavin Center lands are not committed to open space uses and are classified as unprotected. Town lands that are managed for conservation and water supply purposes and town parks are classified as protected, but school sites and land owned for general municipal purposes are listed as unprotected. Unless town records specifically identify a site as being permanently protected, it is assumed to be unprotected.

# Shrewsbury Open Space Inventory

P=permanently protected; U=Not permanently protected; 61= Land receiving Chapter 61, 61A or 61B tax benefits not permanently protected; ?=Permanent protection status unknown

## Public Lands

Map ID #	Area in Acres	Property Name	Property Owner	Use	Degree of Protection	Zoning	Assessor's Map #	Assessor's Lot #
U83	170.22	Grafton St. Hosp.	MA DCPO	Former State Hospital	U	Rural B	49	5
P15	63.17	SUASCO Watershed	MA DEM	Conservation	P	Residence B-1	10,11	MANY
P57	5.83	Oak Island	MA DEM	Recreation	P	Residence B-2	57	0
P47	1.61	Quinsigamond State Park	MA DEM	Recreation	P	Residence B-2	0	0
U90	0.87	George H. Nichols Site	MA DEM		P		0	0
P56	0.62	Pineland Avenue	MA DEM		P		57	164
U83	0.11	Grafton St. Hosp.	MA DEM	Former State Hospital	U	Rural B	0	0
P55	-	Stringer Dam	MA DEM		P	Residence B-2	51	209
P27	0.38	251 N. Quinsigamond	MA DFW		P	Rural B	19	66
P25	0.11	11 Lear Street	MA DFW		P	Rural B	19	64
P26	-	N. Quinsigamond Ave.	MA DFW		P	Rural B	19	65
U52	138.93	Glavin Center	MA DMR	Former State Hospital	U	Residence B-1	33	82,92
P3	13.60	Northborough Watershed Land	Northborough	Public Water Protection	P	Rural A	5	3,9
P3	-	off Reservoir Street	Northborough			Rural A	2	6
P22	78.12	Dean Park	Shrewsbury	Recreation	P	Rural A	17	132
U7	74.72	Sewall Hill	Shrewsbury	Conservation	P	Rural B	14	MANY
U19	74.05	Former Masonic Prop.	Shrewsbury	Conservation	P	Residence A	16	83
U16	48.79	Main Street, rear parcel	Shrewsbury	Conservation	P	Rural A	21	32
U35	41.98	Jr./Sr HS	Shrewsbury	School/Recreation	U	Residence B-1	27	MANY
U18	31.48	Mountain View Cemetery	Shrewsbury	Cemetery	P	Residence B-1	MANY	MANY
U42	25.54	Eaton Pond	Shrewsbury	Conservation	P	Residence B-1	23	355
U34	18.55	Worcester Foundation Prop.	Shrewsbury	Recreation	U	Residence A	27	391
U41	18.40	General Avenue Prop.	Shrewsbury	Conservation	P	Residence B-1	23	MANY
U27	12.57	North Shore School	Shrewsbury	School/Recreation	U	Residence B-2	31	132

Map ID #	Area in Acres	Property Name	Property Owner	Use	Degree of Protection	Zoning	Assessor's Map #	Assessor's Lot #
U10	12.46	Ireta Road Open Space	Shrewsbury	Conservation/Recreation	P	Rural A	20	23.0
U20	11.43	Spring St. School	Shrewsbury	School/Recreation	U	Rural A	17	148
U49	9.27	Jackson Street Prop.	Shrewsbury		U	Residence B-2	39	MANY
U38	8.64	Wesleyan Terrace	Shrewsbury		U	Residence B-1	28	252
U77	8.25	Oak Island	Shrewsbury		P	Residence B-2	57	MANY
U39	7.33		Shrewsbury			Residence A	34	324.0
P28	6.92	Rotary Park	Shrewsbury	Recreation	P	Residence B-1	26	103
U63	6.32	Pratt Farm Playground	Shrewsbury	Recreation	P	Rural B	42	2.5
U37	6.27	Paton School	Shrewsbury	School/Recreation	U	Residence B-2	22	239
U47	6.27	Calvin Coolidge School	Shrewsbury	School/Recreation	U	Residence B-2	38	MANY
U48	5.26	Jordon Pond Beach	Shrewsbury	Recreation	?	Residence B-2	39	MANY
U22	5.26	Park Street Playground	Shrewsbury	Recreation	P	Residence B-1	23	440.0
U2	4.64	Coolidge Conservation Land	Shrewsbury	Conservation	P		10	29.0
U9	4.53	Ireta Road Open Space	Shrewsbury	Conservation/Recreation	P	Rural A	20	23.8
U11	4.37	Ireta Road Open Space	Shrewsbury	Conservation/Recreation	P	Rural A	20	26.0
U72	4.33	Brook St.	Shrewsbury		U		44	6.1
U36	3.81	Beal School	Shrewsbury	School/Recreation	U	Limited Business	22	158
U30	3.00	Mill Pond	Shrewsbury	Conservation	P	Residence A	26	110-4
P7	2.71		Shrewsbury				2	6.3
U79	2.56	Two Islands, Flint Pond	Shrewsbury	Conservation	P	Residence B-2	52	
U21	2.41	Adams Property	Shrewsbury		U	Rural A	17	94
U74	2.21	Edgemere Park	Shrewsbury	Recreation	U	Residence B-2	51	98
U62	2.18	Pratt Farm Playground	Shrewsbury	Recreation	P	Rural B	42	2.5
U78	1.89	Two Islands, Flint Pond	Shrewsbury	Conservation	P	Residence B-2	52	
P6	1.86		Shrewsbury				2	6.2
P20	1.70	Town Common	Shrewsbury	Historic	P	Limited Business	22	25
U54	1.05	South Cemetery	Shrewsbury	Cemetery	P	Residence A	47	8
P6	0.76	Off Main St. Prop.	Shrewsbury		P	Rural B	19	96,97
U26	0.74	Cottage Avenue Prop.	Shrewsbury		?	MF-1 Garden-Type	31	45



Map ID #	Area in Acres	Property Name	Property Owner	Use	Degree of Protection	Zoning	Assessor's Map #	Assessor's Lot #
U64	0.73	Pratt Farm Playground	Shrewsbury	Recreation	P	Rural B	42	2.5
U92	0.65	Steinhilber Prop.	Shrewsbury		U	Residence B-1	10	12.1
U46	0.55	Boat House	Shrewsbury	Recreation	U	Residence B-2	38	31
U76	0.29	Stringer Dam Road	Shrewsbury				51	163
U1	0.21		Shrewsbury				4	4.2
U75	0.11	Stringer Dam Road	Shrewsbury				51	162
U91	0.08	Shirley Lane	Shrewsbury			Rural B	19	95
U93	0.02	Straw Hollow Playground	Shrewsbury	Recreation	U	Residence B-1	10	19.2
U73	-	Drake Island	Shrewsbury		U	Residence B-2	51	2
P2	53.20	Rawson Hill	Shrewsbury Con Comm	Conservation	P	Residence B-1	10;4	MANY
P40	45.00	Reed Road	Shrewsbury Con Comm		P	Residence B-2	39	175
P50	40.12	Former Allen Prop.	Shrewsbury Con Comm	Conservation	P	Rural B	47	MANY
P1	35.97	Newton Pond	Shrewsbury Con Comm	Public Water Protection	P	Rural B	8	10
P50	26.59	Former Allen Prop.	Shrewsbury Con Comm	Conservation	P	Residence A	47	MANY
P19	24.02	E. Slocum Meadow	Shrewsbury Con Comm	Conservation	P	Rural A	15	4,5,6
P13	23.67	Slocum Meadow	Shrewsbury Con Comm	Conservation	P	Rural A	9	12-6
P14	19.22	Boylston St. Prop.	Shrewsbury Con Comm		P	Residence A	10	MANY
P49	11.37	Peat Meadow	Shrewsbury Con Comm	Conservation	P	Residence B-1	46	174
P4	8.49	Brookridge Subdiv.	Shrewsbury Con Comm	Conservation	P	Rural A	5	
P43	5.97	Farrell Prop.	Shrewsbury Con Comm		P	Residence B-1	39	MANY
P31	4.27	Keyword Manor	Shrewsbury Con Comm		P	Residence B-1	22	379
P33	4.02	Hunting Ave. Prop.	Shrewsbury Con Comm		P	Residence A	29	54-15
P32	3.58	Hunting Ave. Prop.	Shrewsbury Con Comm		P	Residence A	29	54-17
P5	3.51	Brookridge Subdiv.	Shrewsbury Con Comm	Conservation	P	Rural A	5	
P42	3.15	Bluegrass	Shrewsbury Con Comm		P	Residence B-1	39	332
P41	2.86	Jordan Pond	Shrewsbury Con Comm		P	Residence B-2	39	MANY
P30	2.56	St. James Pond	Shrewsbury Con Comm		P	Residence B-1	27	
P21	2.33	East Avenue Prop.	Shrewsbury Con Comm		P	Residence B-1	23	87,93
P35	2.27	Oregon Avenue	Shrewsbury Con Comm		P	Residence A	32	16

Map ID #	Area in Acres	Property Name	Property Owner	Use	Degree of Protection	Zoning	Assessor's Map #	Assessor's Lot #
P11	2.26	Former Fyrbeck Est.	Shrewsbury Con Comm	Conservation	P	Rural B	14	MANY
P9	1.73	Sewall Dr. Prop.	Shrewsbury Con Comm		P	Rural B	8	9-1
P11	1.62	Former Frybeck Est. Addition	Shrewsbury Con Comm		P	Rural B	14	
P29	1.00	St. James Pond	Shrewsbury Con Comm		P		27	
P33	0.89	Hunting Avenue	Shrewsbury Con Comm		P		29	54
U87	0.81	Holden Street Prop.	Shrewsbury Con Comm		P		14	19
P48	0.74	Cedar Road Prop.	Shrewsbury Con Comm		P	Residence B-2	45	185-2
P10	0.73	Sewall St. Prop.	Shrewsbury Con Comm		P	Rural B	14	1
P52	0.71	645 Grafton Street	Shrewsbury Con Comm		P	Rural B	53	83
P32	0.32	Hunting Avenue	Shrewsbury Con Comm		P		29	54
P37	0.18	Hancock Street	Shrewsbury Con Comm		P	Residence B-2	39	110
P34	-	Sadler Avenue	Shrewsbury Con Comm		P	Residence A	32	14
P24	-	Shirley Lane	Shrewsbury Con Comm		P	Rural B	19	96
P38	-	Reed Road	Shrewsbury Con Comm		P	Residence B-2	39	111
P39	-	Reed Road	Shrewsbury Con Comm		P	Residence B-2	39	168
P23	0.59	1020 Main Street	Shrewsbury Sewer Dept.			Residence A	18	29
P46	31.02	Oak Street Prop.	Shrewsbury Water Dept.	Public Water Protection	P	Residence B-1	40	58,57
P18	12.72	Holden St. Pumping Station	Shrewsbury Water Dept.	Public Water Protection	P	Rural B	19	167
P16	0.95	Sewell Street	Shrewsbury Water Dept.		P	Rural B	14	60
P45	0.82	350 Oak Street	Shrewsbury Water Dept.		P	Residence B-1	39	261
P17	0.51	Sewell Street	Shrewsbury Water Dept.		P		14	11
P36	0.11	South Street	Shrewsbury Water Dept.		P		34	68
P44	-	Oak Street	Shrewsbury Water Dept.		P		39	293
U13	93.78	Worcester Rifle Range	Worcester	Police Rifle Range	U	Rural A	21	1
U8	40.70	Worcester Rifle Range	Worcester	Police Rifle Range	U	Rural B	21	0
U5	74.76	Holden St. Wellfield, Worcester Ind. Comm	Worcester Ind. Comm.	Public Water Protection	U	Rural B	13	70

## Private Lands

Map ID #	Area in Acres	Property Name	Property Owner	Use	Degree of Protection	Zoning	Assessor's Map #	Assessor's Lot #
U31	14.04	Beverly Rd. Prop.	Borgatti	Conservation	U	Residence B-2	32	611
U23	23.04	High St. Chap 61 A Prop.	Bushey	Agriculture/Forestry	61	Rural A	18	3
U25	4.34	High St. Chap 61 Prop.	Bushey	Agriculture/Forestry	61	Rural A	12	6
U4	20.31	Olde Colony Dr. Chap 61 Prop	Daniels, B.J.	Agriculture/Forestry	61	Residence A	5	MANY
U65	52.98	South St. Chap 61A Prop.	Doyle, A.	Agriculture/Forestry	61	Limited Industrial	42	
U67	3.33	South Street Prop.	Doyle, A.		?	Rural B	42	
U84	23.84	Green Street Prop.	Flynn, L. & R.		61	Rural B	49	4
U71	23.53	Brook Street Prop.	Friars, H. & Rock, B		?	Rural A	43	
U70	20.35	Brook Street Prop.	Friars, H. & Rock, B		?	Rural B	43	
U68	16.88	South Street Prop.	Friars, H. & Rock, B		?	Limited Industrial	42	
U69	2.35	South Street Prop.	Friars, H. & Rock, B		?	Apartment	42	
U81	11.06	Hebert Candies Prop.	HHC		?	Limited Industrial	48	6
U82	80.31	Green Street Prop.	Hook, C. & M.		U	Rural B	49	2,9
U66	9.50	Boston Turnpike Prop.	Maker, W. & Adair, S		61	Commercial Business	35	MANY
U43	78.41	Main St. Prop.	Manzi\Munro	Conservation	U	Rural B	24	1
U24	25.38	Spring Street Prop.	Marston, W.A. & M.J.		61	Rural A	18	4,18
U45	53.11	Walnut St. Chap 61 Prop.	Moalli, P. & D.	Agriculture/Forestry	61	Rural B	24	44
U17	63.36	Gulf St. Prop.	NE Forestry Foundation	Conservation	P	Rural A	16	16,17
U50	85.47	Worthington St. Prop.	NE Power Co.	Conservation	U	Residence B-1	39	MANY
U29	50.32	Old Mill Rd. Prop.	NE Power Co.	Conservation	U	Residence A	20,26	MANY
U14	65.75	Gulf St.-Rear Prop.	Parmenter/Dean	Conservation	U	Rural A	15	3
U40	23.49	Calvary Retreat	Passionate Fathers		U	Residence B-1	23	135
U80	30.47	Creeper Hill Orchard Prop.	Poulin, F. & E.		?	Rural B	58,59	MANY
U56	25.44	Cherry St. Chap 61 Prop.	SBAT	Agriculture/Forestry	61	Residence A	41	17
U55	14.46	Cherry St. Chap 61 A Prop.	SBAT	Agriculture/Forestry	61	Residence A	34	43
U89	12.93	Cherry St. Chap 61 Prop.	SBAT	Agriculture/Forestry	61	Commercial Business	34	50-1
U59	9.74	Cherry Street Prop.	SBAT		61	Residence A	41	27

Map ID #	Area in Acres	Property Name	Property Owner	Use	Degree of Protection	Zoning	Assessor's Map #	Assessor's Lot #
U57	8.14	Cherry Street Prop.	SBAT		61	Residence A	41	17
U61	6.19	Gold Street Prop.	SBAT		61	Residence A	41	26
U60	3.49	Gold Street Prop.	SBAT		61		41	22
U58	1.03	Cherry Street Prop.	SBAT		61	Residence A	41	19
U51	45.11	Scandanavian Athletic Club	Scandanavian Ath. Club	Recreation	U	Residence B-1	46	78,80
U3	8.27	Shrewsbury Sportsmens Club	Sportsmens Club	Recreation	U	Residence B-1	10	51
U32	89.99	St. John's HS	St. John's HS	School/Recreation	U	Residence A	21	100
U12	68.69	St. John's HS	St. John's HS	School/Recreation	U	Rural A	20	42
U6	24.55	Sewall St. Prop.	Stately Homes, Inc.	Conservation	P	Rural B	14	48
U86	44.60	Green Street Prop.	Swedberg, R. & V.		61	Rural B	50	3
U15	39.45	Westview Ave. Prop.	Trotto, M.	Conservation	U	Rural A	21	14
U44	40.55	Ward Hill	Ward, B. & L.	Recreation	U	Rural B	18	30
U33	103.65	Worcester Foundation Prop.	Worcester Foundation for Experimental Biology	Recreation	U	Apartment	21	MANY

## **Section 6 - Community Goals**

### A. Description of Process

As discussed in Section 2 of the plan, a series of public forums was used to help set community goals. Because of the continuing importance of the issues raised in the previous, 1987, Open Space Plan, the goals contained there were used as a jumping off point. From that plan the town accomplished most of goal IV, "Provide a Balance Between Development and Open Space". This has been done through passage of a cluster subdivision by-law and diligent pursuit of open space dedications by the Planning Board and Engineering Department. The remaining four goals, with the exception of goal I "Protect the Town's Potable Drinking Water Sources" have been only partially accomplished.

To begin the goal setting process the Open Space Committee debated the goals from the 1987 plan. Goal IV (discussed above) was eliminated, but the remaining four goals stayed because consensus was that by and large they had not been achieved. A new fifth goal was substituted regarding establishment of greenways. This list of goals was then presented to the first public forum on this plan. Generally, there was broad agreement on the goals. The following five goals then represent a long standing consensus on the direction of Shrewsbury's open space planning efforts.

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

Shrewsbury's residents hold the town dear. Some who have lived in town a very long time, have vivid memories of open fields, hills and forests. Others, more recently moved to town, see a pleasant suburban community with enough open space and recreation options to make them feel at home. All see the benefits of undeveloped spaces in which natural resources are protected and there are areas for both active and passive recreation. They also understand the importance of protecting the town's plentiful surface and ground water resources. It is with these memories, realities and imperatives in mind that the town has chosen the following five goals to help it protect its valuable open space resources.

- I. Acquire, through appropriate means, key open space parcels.
- II. Plan and develop greenways in the town.
- III. Preserve and Enhance the Town's Recreational Facilities.
- IV. Protect the Town's Potable Drinking Water Sources.
- V. Protect Surface Water Resources.

## Section 7 - Analysis of Needs

### A. Summary of Resource Protection Needs

More. The concept does not require a lot of sophisticated analysis. Over and over throughout this planning process this is what was said, ‘the town needs to preserve more open space...’ and soon.

As discussed elsewhere, Shrewsbury has grown, and continues to grow, at a fast clip. Figures developed for this plan show that at development rates experienced in the last 20-25 years all the land currently available for development will be used up in 25 to 35 more years; just one generation. In almost all discussions on the subject the urgency of open space preservation was emphasized.

A quick glance at both the land use map (Map 3) and the parcel map (not included in this study), shows that the town has only a few remaining areas that are largely undeveloped. The southern and southeastern parts of town are the most obvious. Historically, even back to the 18th century, development here has been limited. Several features are of note: Green Hill, Boston Hill, the Grafton State Hospital, and Big Bummet Brook. In addition the open space plans of both Westborough and Grafton recommend inter-community greenway connections in the general vicinity. Further, several properties in this area enjoy Chapter 61 tax exemptions, including a beautiful farm. The forest cover here is relatively unbroken and there are a number of small brooks and wetlands. This is the most rural part of Shrewsbury and it is here that the town has the greatest opportunity to protect large pieces of open land.

Shrewsbury Ridge on the east side of the town represents another major protection need. As discussed in Section 4 of this report, this long, low ridge serves as both a watershed area and a natural break between the more developed areas particularly to the west but also to the east in Northborough and Westborough. Here are located the historic Ward properties, owned by General Artemas Ward and family, one of the town’s more noteworthy figures. Large areas of the ridge on both the north and south sides of Main Street remain mostly undeveloped. There are also opportunities for greenway connections following the Hop Brook toward Dean Park and the Artemas Ward Estate. This greenway could also protect areas westward toward the Floral Street school.

Other needs are based on water resource protection. Obviously pollution at Lake Quinsigamond is an ongoing problem. Non-point sources are a major contributor and the town should do all it can to control these. Problems with the Worcester side of the lake are much more difficult for the town to resolve, but still these should be addressed as opportunities present themselves. Other ponds in town, especially Jordan Pond, where swimming lessons are currently offered, should receive attention in terms of non-point source pollution including installation of settling basins to control non-point sources of pollution like road runoff and storm sewer infiltration.

Straw Hollow, which has been the scene of intense development recently, remains an important part of the SUASCO watershed. While the town, the state and Northborough all hold property in Straw Hollow, these parcels do not create an integrated system of water resource protection. Finally, the town's various wetlands, the biggest being Slocum Meadow, should be protected to the greatest extent possible to preserve their functions as recharge, flood storage, and habitat areas.

Perhaps most significantly, the town needs even better control over the lands within the watersheds of its wells. Presently, most protection is provided by legal instruments. However, in the long run the town should insure the purity of its major water supplies by acquiring as much land as possible. In some areas current land uses preclude this possibility, but the town should remain diligent for acquisition opportunities.

### B. Summary of Community's Needs

Aside from the general consensus on the need for more open space, two additional major community needs were identified during the planning process: 1) active recreation areas and 2) trails and bikeways. These were discussed particularly at the public meetings held as part of this plan. With a growing population, including many families with children, the need for play fields is intense. Over 1,000 children participate in soccer and baseball leagues. Demand is such that the town is forced to use privately owned land on a regular basis. Scheduling has also been a problem. One league organizer talked about the possibility of turning children away. A clear need exists to provide additional soccer and baseball fields to satisfy this demand.

There was also a need expressed for children to get a taste of the outdoors, and not just what can be found in their backyards or on a ballfield. Hiking, biking and cross-country ski trails were often mentioned as needed resources. These would of course serve not only children but adults as well. At present there are no formal hiking trails on any town owned land, however, town owned lands can be used for this purpose. There are also no marked bike routes, much less off-road bike trails. While the town owns many pieces of conservation land that would serve these needs well they lack defined access points, parking and facilities.

While not mentioned prominently, there appears to be a need for recreation opportunities for Shrewsbury's older citizens. Here activities would be more passive and include bird watching, nature study and perhaps gardening. Nature trails could also augment potential uses.

### C. Summary of Handicapped Accessibility Needs

Shrewsbury recognizes its obligations to make its parks and programs accessible to individuals with disabilities, and most of its facilities are already in compliance with accessibility design standards. As part of this Plan, the Engineering Department completed a Section 504 Self-Evaluation, referring to a section of the 1973 National Rehabilitation Act. The purpose of the Self-Evaluation is to both assess the Town's

compliance with accessibility standards in its parks and conservation sites, and to review Town policies and practices with regard to issues affecting individuals with disabilities, such as employment policies and grievance procedures. The Engineering Department completed this investigation and prepared a report entitled *Compliance Guidelines for the Section 504 Self-Evaluation*. Included in this Plan by reference as Appendix B, it is published under separate cover because of the length of the document. The *Self-Evaluation* is available for review in the Engineering Department, the Town Manager's Office, and the office of the Park and Cemetery Commission.

For Open Space and Recreation Plans, Section 504 applies to facilities under the jurisdiction of the Park and Cemetery Commission and the Conservation Commission, but not School facilities or other municipal properties under the control of the Board of Selectmen. With regard to physical impediments present at applicable sites, the *Self-Evaluation* contains two pertinent sections: 1) a Facility Inventory, based on a 12-page form recommended by the Mass. Division of Conservation Services, that identifies compliance with relevant standards for handicapped accessibility; and 2) a Transition Plan that identifies the steps the Town will take to bring the sites into full compliance with accessibility standards. The Facility Inventory was conducted at 12 sites. Of these, 4 sites were identified as not in compliance with certain accessibility aspects and have Transition Plan components to remedy these deficiencies.

The four sites where alterations are needed to remove barriers to handicapped individuals are listed below with an explanation of the barriers needing removal:

1. Coolidge Playfields and Tennis Courts:  
Lack of both public parking spaces and handicapped spaces
2. Dean Park:  
Lack of handicapped spaces at the softball parking lot
3. Dean Park Outdoor Stage:  
Lack of a ramp to access the outdoor stage
4. Edgemere Playground  
Lack of a paved path to the basketball court

Within the time horizon of this Plan, the Town intends to remove the obstacles at Dean Park as part of its Master Plan to upgrade facilities at this heavily used area. The necessary changes to the Outdoor Stage and Edgemere Playground will also be implemented within the Plan's five-year time frame with costs borne by the Park and Recreation Department operating budget.

#### D. Management Needs, Potential Change of Use

In some ways it is paradoxical to discuss the idea of more open space. Even areas strictly reserved for conservation (versus active or even passive recreation) require some



maintenance. With the demand for more open space and recreation areas comes a higher demand for maintenance; but the town is having a difficult time maintaining what it currently has. One of the principal needs then is to increase the maintenance abilities of the Parks and Recreation Department and/or Department of Public Works. Parks Department representatives discussed the numerous deferred maintenance projects at existing facilities.

With all the talk about more facilities, it is easy to forget the town already has control over a number of properties that are used only lightly or not at all. Mentioned several times was the former Masonic Home property just north of the town center. This 70 acre site has been studied several times. Proposals have included active recreation areas, a cemetery expansion and location of additional school facilities. At the very least the town should create better parking and trails on the property. There is also the opportunity to create a short greenway linking the Mountain View Cemetery and the town common.

Other town owned lands that could be more intensively used include, Rawson Hill in the northeast part of town and the former Camp Winnegan between Route 140 and Gold Street in the south. Again there is a need for better access and at least the development of walking trails. Camp Winnegan might be examined for active recreation use, since the town has few facilities in the vicinity. These existing lands could alleviate some of the need that has been noted in this planning process. The town should seek neighborhood input and begin developing access locations and new facilities at these and other town owned sites.

These open space and recreation needs should be framed in the context of all the towns' needs. These include school expansions, sewer system extensions, maintenance of existing town facilities, etc. All these compete for limited taxpayer dollars. It will be up to voters to decide priorities. In turn it will be up to those interested in open space and recreation needs to make their case to those voters. However, without the town's willingness to purchase additional open space, rapid growth will foreclose future opportunities.

## Section 8 - Goals and Objectives

There is a great degree of similarity between the goals from the 1987 Open Space Plan and those contained here. In part this reflects the difficulty the town has had in pushing its open space agenda. Funding, particularly during the recession years of the late 1980's and early 1990's, has remained the primary obstacle in achieving many of the earlier plan's goals and objectives. On a positive note, non-funding related objectives, mostly having to do with regulation and enforcement have been easier to achieve. In fact objectives relating to the 1987 goal of 'Balancing open space and development' have largely been accomplished through passage of a cluster subdivision by-law and diligent subdivision control by the Planning Board and Engineering/Planning staff. Aquifer protection is another area where regulatory controls and sound planning have moved the town toward achieving the previous plan's goals and objectives.

With this track record in mind, the following goals and objectives reflect the town's current needs, but also the fact that many of the 1987 goals and objectives have not been accomplished. In this plan goals have been placed in rank order relative to their urgency (objectives within goals are not ranked). As with the previous plan, goals are broad statements about the town's wants and aspirations, while objectives address more specific actions to achieve the goals. The list of goals and objectives have been agreed upon after thorough discussion at three public meetings and numerous Open Space Plan Committee Meetings.

- I. Acquire, through appropriate means, key open space parcels.
  - a) Apply to state and federal programs for funding to purchase open space parcels.
  - b) Create a permanent Open Space Plan Implementation Committee to insure appropriate actions are taken to preserve and protect open space and recreation facilities. The Committee should be constituted in the most expedient way. Suggestions include: 1) Use the existing Conservation Commission; 2) Selectmen appoint an entirely new Committee consisting of Conservation Commission representatives, representatives from other town boards, town staff, and interested citizens; 3) Designate an existing (or newly hired) town staff member, like a town planner; and 4) Create an ad hoc committee of town staff, and elected and appointed representatives.
  - c) Identify open space parcels which may be of interest to state/federal agencies for their own portfolios and lobby those agencies to acquire those parcels.
  - d) Seek a sizable appropriation at town meeting dedicated to town purchase of open space land.
  - e) Designate town staff to maintain relationships with area land trusts and similar organizations including the Sudbury Valley Trustees, and the Greater Worcester Land Trust.
  - f) Create a database of landowners with key open space parcels who should be contacted by the town on a regular basis to discuss options for preserving their land as open space.
  - g) Consider acquiring fee simple or other interest in lands designated under Chapters 61 and 61A when such lands are offered to the town for right-of-first-

refusal.

- h) Work with property owners/organizations to insure continuing public use of quasi-public land;

## II. Plan and develop greenways in the town.

- a) Identify and map potential greenways.
- b) During subdivision review, insure that greenway corridors, paths and trails are preserved and that easements are required as a condition of approval.
- c) Apply to state and federal programs to fund greenway planning, design and acquisition.
- d) Work with property owners who are interested in taking part in a town greenway.
- e) Develop bicycle paths and routes in town, with particular attention to abandoned rail rights-of-way.
- f) Begin planning and constructing hiking/walking/cross-country ski trails where appropriate.
- g) Work with state and federal agencies to identify appropriate trail development/construction standards.
- h) Where developments occur adjacent to neighboring towns, examine those towns' open space plans to insure interconnection between resources.

## III. Preserve and Enhance the Town's Recreational Facilities.

- a) Augment park maintenance resources.
- b) Acquire new lands for the creation of active public recreation facilities.
- c) Study playfield use by the various recreation programs and leagues to determine needs.
- d) Develop soccer, baseball, football and other playfields to meet town wide demand.
- e) Seek to insure that open space/recreation land created through the subdivision process is maintained by a homeowners association wherever possible.
- f) Improve access for the elderly and handicapped at recreation facilities.
- g) Create new winter sports facilities such as cross-country ski trails.
- h) Develop trails, picnic areas and parking facilities on land already owned by the Conservation Commission.
- i) Work with regional trails groups and inter-municipal and inter-state trails.

## IV. Protect the Town's Potable Drinking Water Sources.

- a) Protect land in aquifer recharge areas through outright purchase or easements.
- b) Enforce the town's aquifer protection by-laws.
- c) Start a planning program which would lead to extending town sewers into unsewered areas in aquifer recharge zones.
- d) Utilize dedicated funding from the Massachusetts Open Space Bond Bill for improvements to septic systems that do not meet revised Title 5 standards.
- e) Continue quality monitoring of municipal water resources.
- f) Educate people living in unsewered areas about the proper use and maintenance

of septic systems.

- g) Reduce or eliminate the use of road salt near well heads and aquifer recharge areas.
- h) Strictly enforce Title 5 regulations in aquifer recharge areas.

#### V. Protect Surface Water Resources.

- a) Acquire land and/or easements in the lake watershed.
- b) Work with the Lake Quinsigamond Commission and Watershed Association on water quality protections and enhancement initiatives.
- c) Protect wetlands and streams that feed into the lake by enforcing wetlands regulations and purchasing land when necessary.
- d) Create greenways along tributaries to open water bodies.
- e) Use Massachusetts Open Space Bond funds to address septic system problems on properties in the lake watershed that are not connected to town sewers.
- f) Extend town sewers into the Edgemere neighborhood.
- g) Begin planning for sewer extensions into unserved areas around Holden and Clinton Streets in the northwest section of town.
- h) Use the annual Earth Day as a time to raise awareness about watershed protection and to do cleanups in and around lake and pond watersheds.

## Section 9 - Five Year Action Plan

See Open Space Plan Map (Map 10) for graphic depiction of some of the actions shown below.

Year	Goal	Action	Board
1. 1998	General	<ul style="list-style-type: none"> <li>a. Adopt new open space plan.</li> <li>b. Set up Open Space Plan Implementation Committee (OSPIC).</li> <li>c. Appoint OSPIC members.</li> <li>d. OSPIC starts developing relationships with area land trusts and property owners.</li> </ul>	ConCom/Recreation Selectmen Selectmen OSPIC
	I. Acquire Key Open Space Parcels	<ul style="list-style-type: none"> <li>a. Seek Town approval of \$5.0 million open space acquisition bond</li> <li>b. OSPIC, Con. Comm., Engineering Dept. make priority list of parcels to acquire with bond issue monies.</li> <li>c. Prepare Mass. Self Help Grant.</li> </ul>	Selectmen/ConCom OSPIC/Engineering/ ConCom Engineering/Town Manager
	II. Plan and Develop Greenways	<ul style="list-style-type: none"> <li>a. OSPIC initiates conversations with neighboring towns to discuss practicalities of inter-community greenways.</li> <li>b. Analyze open space plan map for specific parcels/opportunities for beginning recommended greenways.</li> </ul>	OSPIC OSPIC/Engineering/ ConCom
	III. Preserve and Enhance Recreational Facilities	<ul style="list-style-type: none"> <li>a. Parks and Cemetery Commission (PCC) polls all active sports leagues for usage/need information.</li> <li>b. PCC conducts intercept survey of users of town parks to find out usage/needs.</li> <li>c. Appropriate additional funds to continue implementation of recreation Master Development and Improvement Plan (MDIP)</li> <li>d. Hire firm to prepare town bikeway plan.</li> </ul>	PCC PCC Town Manager Town Manager
	IV. Protect Potable Drinking Water Sources	<ul style="list-style-type: none"> <li>a. Engineering Dept./Town Manager designate individual/committee to catalogue potential sites for additional water resource protection</li> <li>b. Begin planning sewer extension in Holden/Clinton St. area.</li> </ul>	Engineering/Town Manager Engineering
	V. Protect Surface Water Resources	<ul style="list-style-type: none"> <li>a. Use state's Community Septic Repair Program funds to inspect septic systems in unsewered areas.</li> </ul>	Board of Health

<b>Year</b>	<b>Goal</b>	<b>Action</b>	<b>Board</b>
2. 1999	General	a. OSPIC continues meeting. b. OSPIC continues relationships with area land trusts and property owners.	OSPIC OSPIC
	I. Acquire Key Open Space Parcels	a. File for appropriation of funds for open space bond in general election. b. Appropriate groups/individuals launch public information campaign on override/open space bond. c. Purchase one top priority parcel with town bond monies d. Purchase designated parcel and apply for Mass. Self Help reimbursement.	ConCom/Engineering ConCom Town Meeting Engineering/Town Manager
	II. Plan and Develop Greenways	a. Prepare Trails Planning Grant for Mass. DEM for inter-municipal greenway in Green Hill area (Green Hill Greenway). b. Begin working with land owners, land trusts and Westborough and Grafton on acquiring easements for Green Hill Greenway.	Engineering Engineering/ConCom
	III. Preserve and Enhance Recreational Facilities	a. Complete Phase III of Dean Park rehabilitation. b. Begin discussions with owners of private parcels currently used for play fields to have formal long term agreement or outright purchase. c. Begin discussions with property owners along planned town bikeway. d. Analyze information in former Masonic Property studies and develop recommended next steps. e. Continue MDIP activities.	PCC PCC Engineering/PCC Town Manager/PCC/ Engineering/ConCom PCC
	IV. Protect Potable Drinking Water Sources	a. Select sites to acquire for aquifer protection. b. Prepare Mass. Aquifer Land Acquisition (ALA) Grant application. c. Develop funding strategy for sewer extensions in Holden/Clinton St. area.	Engineering Engineering Engineering
	V. Protect Surface Water Resources	a. Use Community Septic Repair Program funds to repair selected septic systems. b. Where Community Septic Repair Program funds are insufficient for septic system repair, create and distribute information on septic system maintenance and repair.	Board of Health Board of Health

<b>Year</b>	<b>Goal</b>	<b>Action</b>	<b>Board</b>
<b>3. 2000</b>	General	a. OSPIC continues meeting. b. OSPIC continues relationships with area land trusts and property owners.	OSPIC OSPIC
	I. Acquire Key Open Space Parcels	a. Purchase second and third parcels with town open space bond monies	Town Meeting
	II. Plan and Develop Greenways	a. Begin acquiring easements for Green Hill Greenway.	Engineering/ConCom
	III. Preserve and Enhance Recreational Facilities	a. Fund and commence Phase IV of Dean Park Rehabilitation. b. Implement Transition Plan component for handicapped parking spaces in Dean Park. c. Implement Transition Plan component at Edgemere Playground for paving a path to the basketball court for better handicapped access. d. Close agreement with private property owners for long term use of play fields. e. Begin securing easements and/or fee ownership of parcels along town bikeway. f. Begin developing parking and trails at former Masonic Property. g. Use Mass. Trails Planning Grant to lay out trail through Green Hill Greenway. h. Begin trail planning in Straw Hollow/Rawson Hill area. i. Continue MDIP activities.	PCC PCC PCC PCC Engineering Engineering/PCC Engineering Engineering/ConCom PCC
	IV. Protect Potable Drinking Water Sources	a. Do sewer design for Holden/Clinton St. area. b. Begin site acquisitions using ALA funds.	Engineering OSPIC/ Engineering
	V. Protect Surface Water Resources	a. Continue septic system information program. b. Survey Lake Quinsigamond for non-point source pollution problem areas.	Board of Health Board of Health

<b>Year</b>	<b>Goal</b>	<b>Action</b>	<b>Board</b>
<b>4. 2001</b>	General	a. OSPIC continues meeting. b. OSPIC continues relationships with area land trusts and property owners.	OSPIC OSPIC
	I. Acquire Key Open Space Parcels	a. Purchase fourth parcel with town open space bond monies.	Town Meeting
	II. Plan and Develop Greenways	a. Continue acquiring easements along Green Hill Greenway.	Engineering/ConCom
	III. Preserve and Enhance Recreational Facilities	a. Complete Phase IV of Dean Park rehabilitation and fund Phase V. b. Implement Transition Plan component at the Dean Park Outdoor Stage by constructing an access ramp to the stage. c. Rehabilitate play fields at Municipal Drive. d. Begin design work for development of South Recreation Area on Lake St. (former Sears/SAC property). e. Continue with bikeway planning and implementation. f. Begin trail construction on Green Hill Greenway. g. Acquire access easements for Straw Hollow/Rawson Hill area trail.	PCC PCC PCC PCC
	IV. Protect Potable Drinking Water Sources	h. Continue MDIP activities.	Engineering Highway Department Engineering/ConCom/ PCC PCC
	V. Protect Surface Water Resources	a. Begin construction on Holden/Clinton St. are sewer extension.  a. Continue septic system information program. b. Apply for Section 319 grant to remedy high priority non-point source pollution problems in Lake Quinsigamond watershed.	Engineering  Board of Health Engineering/Board of Health



<b>Year</b>	<b>Goal</b>	<b>Action</b>	<b>Board</b>
5. 2002	General	<ul style="list-style-type: none"> <li>a. OSPIC continues meeting.</li> <li>b. OSPIC continues relationships with area land trusts and property owners.</li> <li>c. Begin discussions on updating Open Space Plan.</li> </ul>	OSPIC OSPIC PCC/ConCom
	I. Acquire Key Open Space Parcels	<ul style="list-style-type: none"> <li>a. Purchase fifth parcel with town open space bond monies.</li> </ul>	Town Meeting
	II. Plan and Develop Greenways	<ul style="list-style-type: none"> <li>a. Continue acquiring easements along Green Hill Greenway</li> <li>b. Begin planning process for Shrewsbury Ridge/Hop Brook Greenway.</li> </ul>	Engineering/ConCom Engineering
	III. Preserve and Enhance Recreational Facilities	<ul style="list-style-type: none"> <li>a. Complete Phase V Dean Park rehabilitation and fund Phase VI.</li> <li>b. Begin development of South Recreation Area</li> <li>c. Continue with bikeway planning and implementation.</li> <li>d. Continue building trail along Green Hill Greenway</li> <li>e. Continue MDIP activities.</li> </ul>	PCC PCC Engineering Engineering PCC
	IV. Protect Potable Drinking Water Sources	<ul style="list-style-type: none"> <li>a. Complete construction on Holden/Clinton St. area sewer extension.</li> </ul>	Engineering
	V. Protect Surface Water Resources	<ul style="list-style-type: none"> <li>a. Continue septic system information program.</li> <li>b. Implement Section 319 work program.</li> </ul>	Board of Health Engineering