Stow: Forever Green

Preserving the Stow we Know

Stow Open Space and Recreation Plan

June 2008

IMPORTANT NOTES FOR READERS

Purpose of Plan: This plan is an update of the 1997 Open Space and Recreation Plan prepared by the town of Stow. The plan summarizes the progress that the town has made in providing for its open space and recreation needs and sets forth goals and specific action items for the next five years. The plan is designed to provide a framework for the efforts of various town boards and committees involved in the protection Stow's open lands and to guide municipal partnership efforts with both state and federal agencies and nonprofit organizations. It will also help guide work by the town's Community Preservation Committee and will serve as the Natural Resources and Open Space component of the town's Master Plan, currently under revision. The Open Space and Recreation Plan must be updated every five years to maintain eligibility for the Commonwealth's Self Help and Urban Self Help Grant programs.

A Word About Maps: For the first time, Stow has been able to take advantage of GIS mapping technology in preparing the Open Space and Recreation Plan. While this has allowed the production of much higher quality maps than had been in previous versions of the plan, along with information on landownership, it also means that it is easy to find errors. Every day in Stow this information changes -- parcels are divided and ownership changes, properties are enrolled or removed from Chapter 61 preferential taxation programs, and lands are protected. The Open Space and Recreation Plan was prepared over several years, and we have used the best available information at the time the plan was prepared. In some cases there are minor acreage discrepancies that do not materially affect the recommendations in this plan. In addition, the maps are illustrative and are certainly not intended to be used for regulatory purposes. As an example, this includes wetlands, rare species, floodplain and zoning maps, where the original source should always be consulted.

Content & Executive Summary: The contents and order of the items in this Open Space and Recreation Plan are set forth in state guidelines for community open space and recreation plans. It is anticipated that a more "user-friendly" executive summary of this plan will be prepared for public distribution and made available on Stow's web site.

Updates: We anticipate continuing to update this plan on a regular basis and encourage residents to bring to our attention any revisions or corrections that should be made in the next update. If you are interested in assisting with implementation of the action items in this Open Space and Recreation Plan, please contact the Stow Conservation Commission.

Thank you.

Stow Open Space and Recreation Plan Committee

Stow Open Space Committee

Stow Conservation Commission

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Section 1

Open Space Plan Summary

Stow is a very special place. Despite increasing development pressures, Stow has managed to maintain a rural flavor that has been lost in most, if not all, surrounding communities along the Route 495 corridor. A wide range of agricultural products including fruit and vegetables, lamb, Christmas trees, and greenhouse and cut flowers continue to be produced in Stow and are a major element of our community's heritage and economy. Economically viable farms preserve open space and contribute in many other ways to Stow's quality of life. Many roads are lined with stone walls and there are numerous highly valued scenic vistas such as Pilot Grove Farm, Carver Hill, Lake Boon, the Assabet River, and the town's many beautiful golf courses. With just over 6000 residents, Stow still has a "small town" feel – it is a town where you know the people you see in the post office and in the grocery store. And where annual events such as Springfest, the Harvest Ball, Run for the Woods, and washing the fire truck are important aspects of the community's character. Other less tangible aspects of small town character prevail – the skies are still dark at night, affording excellent stargazing opportunities, and on a summer afternoon, the rustling of leaves and the songs of birds are more noticeable that sirens or traffic noise.

The recent Master Plan Survey indicates that most people chose to move to Stow for what it still is, more than for what it could become. Sixty two percent of residents said that rural character (open space, farms and orchards, Lake Boon) was the main reason that they decided to live in Stow. Almost half cited "small town community" as the main reason.

At the same time, these aspects of Stow that are prized by residents also draw newcomers, making the continued growth of Stow inevitable. This reality jeopardizes the very qualities that make Stow a desirable community. One traffic light becomes two. The intersection of Rt. 62 and 117 becomes increasingly congested. It is harder to take a left turn out of your driveway. A patch of woods is subdivided for large new homes. Class sizes increase. Little by little, the sense of "elbow room" is diminished. Our demographics are also changing – with homeownership increasingly out of reach for many and those on fixed incomes struggling to keep up with rising property taxes. At the same time, there is a strong desire to maintain the existing small town character in Stow for its many benefits. Growth will continue to affect our tax base, requiring costly services such as increased police and fire protection and additional classroom space. Protection of our important remaining open lands can maintain or enhance our quality of life and be beneficial to the town's budget in the long run.

We are used to looking at the landscape and imaging that what we are used to seeing and experiencing will always be there. Yet, build out studies that have been developed for Stow depict a future – where all of the existing unprotected open land has been developed – that seems unimaginable. Many Stow residents do not fully appreciate the magnitude of the changes that will occur with buildout or the speed with which it is likely to occur. Most communities in eastern Massachusetts are looking at a "buildout" time horizon of 5 to 15 years. The reality is that the decisions that are made within the next five to ten years will play a major role in shaping the future of Stow. To the extent that the existing build-out projections are undesirable, the town must act now to change this blueprint and to create the "green infrastructure" that will sustain this community over the long term.

This plan identifies nine specific objectives for protecting land in Stow. They are:

- Protect agricultural lands to preserve and enhance Stow's agricultural base, and maintaining its viability for the long term
- Protect lands that provide areas for active and passive recreation including ball fields and trails.
- Protect lands that link existing conservation holdings in Stow and surrounding communities
- Protect lands in areas of town currently underserved by protected open space
- Protect land with significant surface and groundwater resources.
- Protect land that will preserve Stow's small town nature
- Protect important natural habitats and wildlife corridors.
- Protect important scenic vistas.
- Protect land with significant historical or cultural resources.

This plan calls for specific actions on several fronts – ranging from active efforts to acquire or otherwise protect priority lands that are important for the nine objectives identified in this plan, to adoption of creative zoning changes to reduce and/or concentrate future development and preserve areas not suitable for development. It is clear that given the short amount of time remaining, the town needs a strong, ongoing and well-prioritized land protection effort that makes use of all of the "tools" in the toolbox – encouraging donation of land and conservation restrictions, purchasing key properties, and making use of limited development, zoning incentives and creative land protection partnerships with private organizations that can assist with raising funds. In addition, more attention needs to be given to coordinated marketing of Stow's assets – its farms, orchards, golf courses, bed and breakfasts, recreational lands, and small businesses. We should be able to purchase Stow apples in the supermarket and should encourage more visitors to consider Stow as a weekend or vacation destination. In addition, the town needs to ensure that land use and open space decisions are coordinated, so that infrastructure and capital facilities decisions support efforts to preserve important lands and do not conflict with open space priorities and so that the various staff, boards and organizations involved in open space protection maximize their effectiveness. Finally, the plan looks across Stow's borders to identify key linkages with open space and greenway efforts in surrounding towns and within the region.

Moseley Farm, Maple Street, Protected by Agricultural Preservation Restriction

Section 2

Introduction

2A. Statement of purpose

This plan is an update of the 1997 Open Space and Recreation Plan prepared by the town of Stow. The plan summarizes the progress that the town has made in providing for its open space and recreation needs and sets forth goals and specific action items for the next five years. The plan is designed to provide a framework for the efforts of various town boards and committees involved in the protection of Stow's open lands and to guide municipal partnership efforts with both state and federal agencies and nonprofit organizations. It will also help guide work by the town's Community Preservation Committee and will serve as the Natural Resources and Open Space component of the town's Master Plan, currently under revision. The Open Space and Recreation Plan must be updated every five years to maintain eligibility for the Commonwealth's Selp Help Grant program. This is the fifth Open Space and Recreation plan developed by the town of Stow.

2B. Planning process and public participation

This plan has been prepared by the Open Space and Recreation Plan Committee, which was appointed by the Stow Conservation Commission in 2003 specifically for the purpose of updating this plan, in conjunction with the Stow Open Space Committee. The Plan Committee consists of Bob Wilber, Kathy Sferra, Dwight Sipler, Doug Moffett, and Bill Maxfield. They were assisted by volunteer Pam Weathers. The Open Space Committee includes Bob Wilber, Kathy Sferra, Eve Donahue, Chris Rodstrom, Vin Antill, Jean Lynch, and Bill Maxfield. Members of both committees are involved in planning and open space issues in the town of Stow. Members of the committee serve on the Stow Open Space Committee, Stow Community Preservation Committee, Stow Conservation Commission, and the Board of Directors of the Stow Conservation Trust. In addition, both Pam Weathers and Dwight Sipler have been involved in writing prior versions of the Stow Open Space and Recreation Plan.

The 1997 Open Space and Recreation Plan was used as the starting point for the plan but has been extensively revised, updated and formatted to comply with the Commonwealth's new Open Space and Recreation Plan Requirements. In addition, for the first time, Geographic Information System (GIS) data and maps were available to assist in updating the Open Space and Recreation Plan and allowed the committee to conduct an extensive analysis of Stow's remaining open lands at the parcel level. This information was invaluable and enabled the preparation of the high-quality maps that accompany this plan.

Concurrent with the Open Space Plan, the Master Plan of Stow is being updated. The Open Space and Recreation Plan will serve as the Natural Resources and Open Space component of the Stow's Master Plan. The town's 2003 Master Plan survey was used to provide data on residents' opinions regarding community character, development and open space. In addition, information from several planning charettes conducted jointly by the town and the Metropolitan Area Planning Commission (MAPC), including one on natural resources and open space, was incorporated into the plan as appropriate.

All of the meetings of the Open Space and Recreation Plan Committee were advertised public meetings open to interested citizens and members of other boards. In addition, copies of the draft document were circulated to all of the relevant Town boards and community groups for their comments and made available in the Stow Public Library. The specific distribution list

included the following: Town Administrator, Selectmen, Conservation Commission, Board of Health, Planning Board, Board of Assessors, Recreation Commission, Lake Boon Commission, Historical Commission, Finance Committee, Randall Library, Master Plan Committee, Agricultural Commission, Municipal Land Use Committee, and Community Preservation Committee.

The Open Space and Recreation Plan Committee conducted a public forum on October 5, 2006 to present the final draft of the plan and to accept additional public comment on the plan. The forum was advertised in local papers and on the community bulletin board outside the Randall Library. Comments received at the forum were incorporated into the final plan.

Section 3

Community Setting

3A. Regional context

Stow is only one of a handful of communities within Rt. 495 that has managed to retain a largely rural character with many prominent open lands, farm and orchards which contribute to the town's character and economy. Surrounding towns in all four directions are significantly more developed. Stow's population, originally agrarian, has changed over the recent decades to include workers in the high technology industries of electronics and biotechnology as well as many people who work from home in home-based businesses. Its socioeconomic level is generally middle to upper middle class.

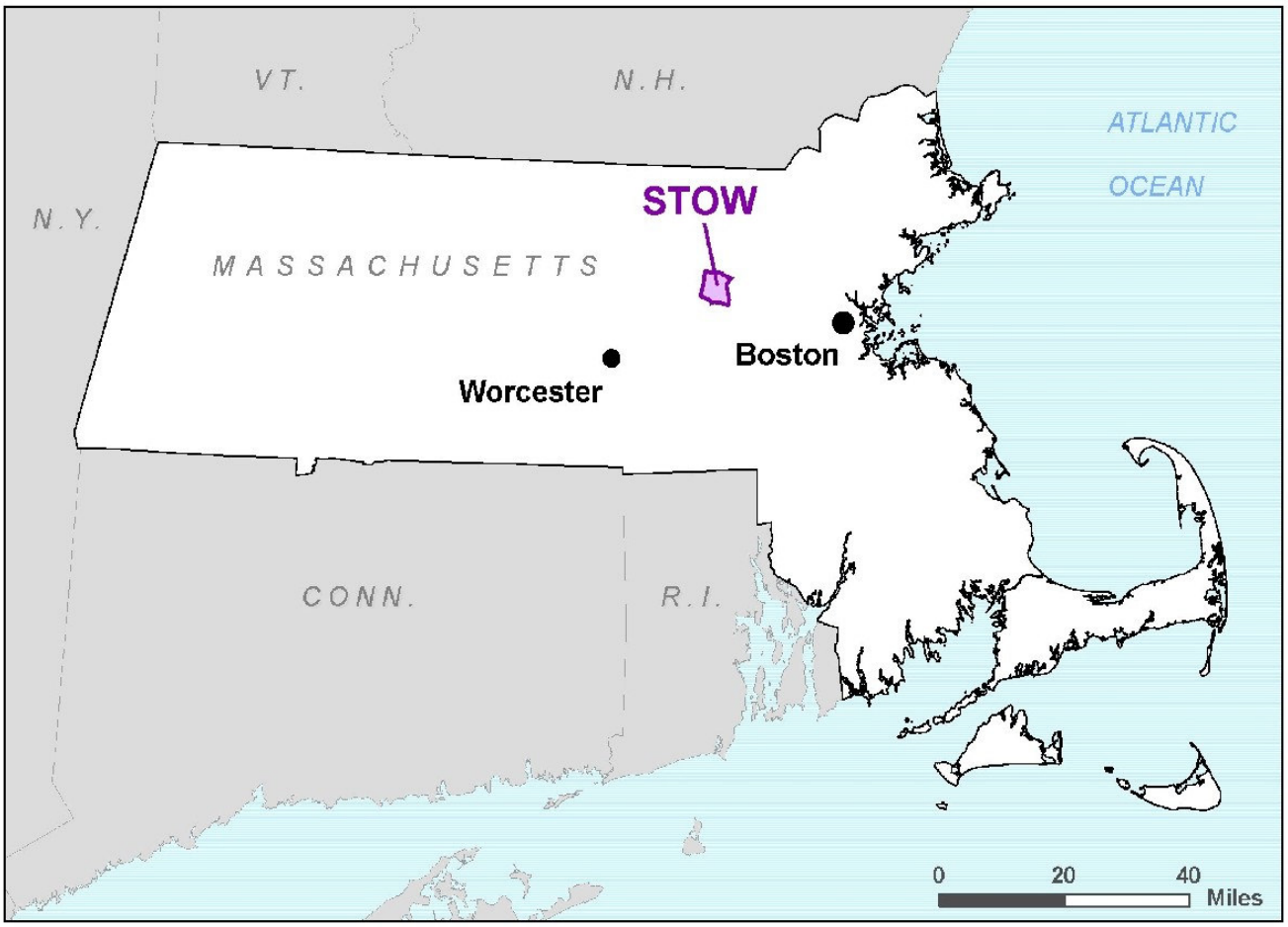
Stow is within the Sudbury-Assabet-Concord (SuAsCo) Watershed. The Assabet River forms the main drainage area for most of the Town of Stow. The areas of highest elevation in Town are the bedrock and glacial till areas in the northwest corner of Town. Other major topographical heights include drumlins such as Spindle Hill, Birch Hill, Pilot Grove Hill, Spring Hill, and Orchard Hill.

No major highways pass through Stow. However, Routes 117 and 62 are heavily used by commuter and commercial traffic. These two roads carve the Town roughly into thirds. These main roads, as well as back roads which connect to adjacent towns of Acton, Sudbury, Maynard, Boxborough, Harvard, Bolton and Hudson, form the primary local road network. There are no public transportation systems in Stow. North on Boxborough Road is Minute Man Air Field, which has grown over the years but still accommodates only small aircraft.

Stow has several light industries; the major ones include Bose and Radant Corporation. Small businesses are clustered around the Lower Village Common (the eastern end of Route 117), scattered along Route 117, and in Gleasondale in the old mill complex.

The southeastern corner of the Town contains the former US Army Fort Devens Sudbury Annex, consisting of 1036 acres within Stow. This area was taken by the Army during World War II and contains considerable open space including Puffer Pond. With the closing of Fort Devens, this land has been transferred to the U.S. Fish and Wildlife Service and now forms Assabet River National Wildlife Refuge, a significant open space and recreational resource. Just across the Assabet River which forms the northwestern boundary of the Assabet Refuge is the Gardner Hill Conservation Land (the Town Forest) which encompasses 326 acres. This area is traversed by Elizabeth Brook which stems from Delaney Pond in the northwest corner of Stow. Elizabeth Brook passes down from Delaney Pond into Wheeler Pond near the center of Stow and then on to the Gardner Hill land emptying into the Assabet River just opposite the Assabet Refuge. In the center of Town is Minister's Pond which is flanked by Route 117 and a portion of Crescent St.

In the southern section of Stow is Lake Boon (Boon's Pond). Although originally surrounded by summer cottages, it now has mostly year-round residents. The Town Beach (31 acres) is located on the eastern side of the lake. Due to the increase in population around the lake, some pollution has occurred due to failing septic systems or cesspools. Over the last few years most of these systems have been upgraded and residents around the lake have worked diligently to decrease the pollutant load to the Lake. Nearby is White Pond, which is controlled by the Town of Maynard which prohibits recreational activity to protect water quality for the nearby municipal wells. Sudbury State Forest is nestled among the Wildlife Refuge, White Pond and the Lake Boon area.



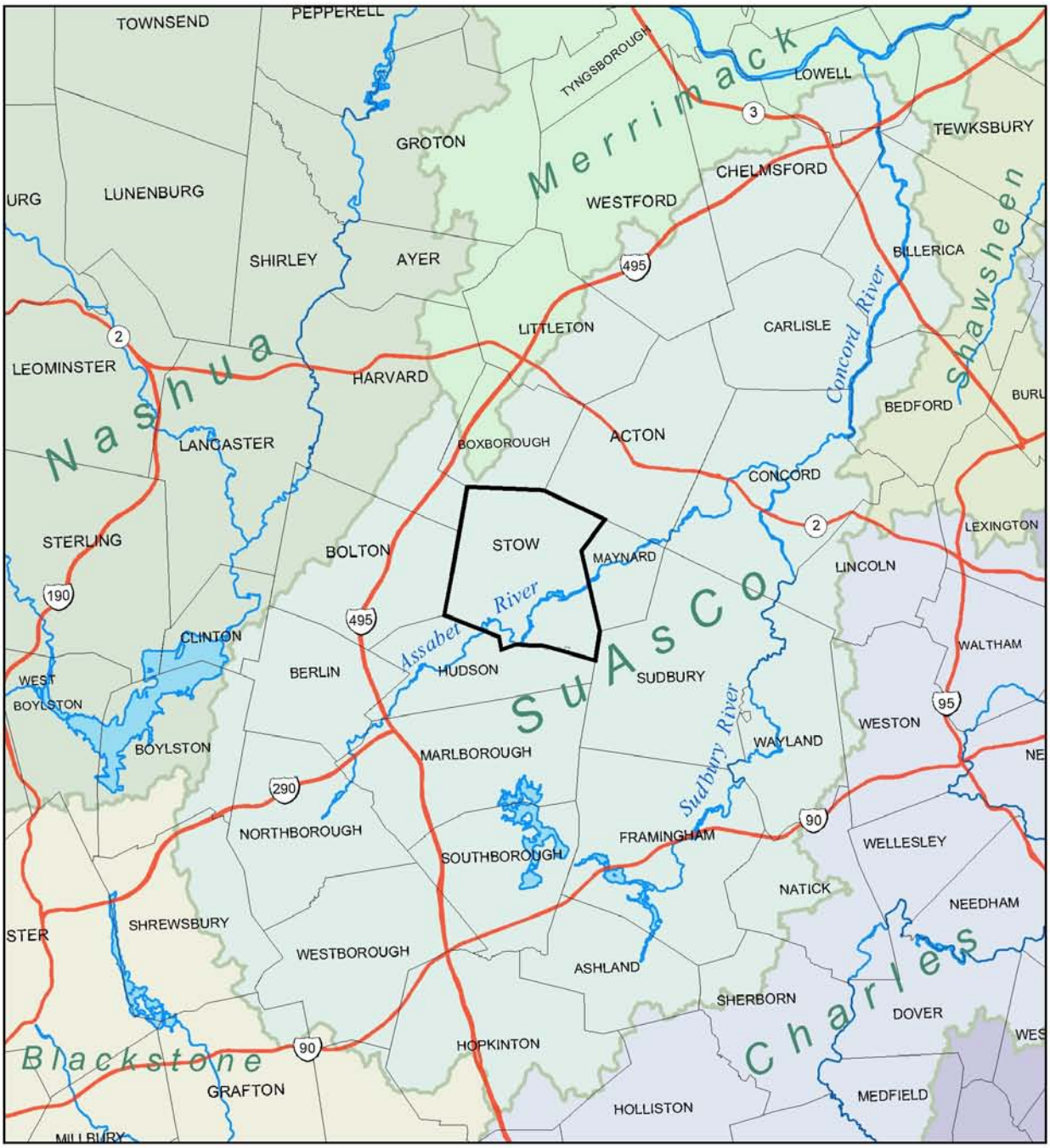
In the southwestern corner of Stow is a former private landfill which contracted its services to Stow and Hudson. This landfill was closed in 1996 and has been capped. This sector of Town also has a great deal of undeveloped land, only a small amount of which is permanently protected and some industry, e.g. Radant Corp and the new Bose facility. There are two new large developments in this area, the Villages at Stow 40B and the Arbor Glen Active Adult Neighborhood, but a large amount of undeveloped land still lies west of Hudson Road. Off more to the west is the Annie Moore land (27 acres) which connects to conservation land in Bolton.

The northwestern section of Stow is dominated by two main features, the Delaney Flood Control project and the Harvard Acres residential development. The Delaney Project encompasses 170 acres consisting of open water, seasonal shore marshes, and a perimeter of wooded or open conservation land. The north central region contains the Marble Hill Conservation Area (249 acres) which is close to but not immediately adjacent to the Delaney land.

The northeastern sector of Stow is dominated by a major marsh system, Heath Hen Meadow, through which Heath Hen Meadow Brook meanders. Near this brook is the Captain Sargent Farm conservation area comprising 153 acres and the Flagg Hill Conservation Area (243 acres), both of which were acquired with assistance from the Self-Help Grant Program.

Many of these conservation areas are close to being linked in a green belt throughout the Town. Numerous trails exist throughout Stow; however, they have not yet been linked. One of the goals of this Plan is to create a green belt and trail system throughout Stow, perhaps linking with adjacent towns.

Stow - Regional Context and Watersheds



SuAsCo - Sudbury / Assabet / Concord River Watershed

Watershed Divides

Highways

N

0 1 2 3 4 5 Mile

Hydrography, Town Boundaries, and Roads data provided by MassGIS.

Map produced June 2006.

Stow is a member of MAGIC, one of 8 subregions of the Metropolitan Area Planning Commission. MAGIC is a group of communities that meet regularly to discuss issues of common interest. The Sudbury Valley Trustees is a regional nonprofit organization that works on open space protection issues in the town of Stow, as does the Stow Conservation Trust, a local nonprofit land trust founded in 1978. The Assabet River Rail Trail is a regional greenway project which is located within the town of Stow.

3B. History of the Community

The history of Stow has been compiled by several authors over the years. The first history available in book form is the Crowell history, published in 1933 for the 250th anniversary of the town. The most recent history of Stow was compiled by Ellie Childs and published by the Stow Historical Society Publishing Company as part of the Tercentenary in 1983. A brief summary of the histories is excerpted below.

An area of forest, wooded hills, streams and river, swamps and rock-strewn meadows ("meane land") comprised Pompositticut Plantation in the 1600s. We know this area as Stow today. The town in the eastern part of the Massachusetts Bay Colony, 25 miles west of Boston, was centered in the cluster of communities of Concord, Sudbury, Marlborough, Lancaster, Groaton (Groton) and Nashoby (Littleton).

Matthew Boon of Charlestown explored Stow about 1660 and settled on Boon Hill which is adjacent to what is now known as Lake Boon. John Kettle settled in Stow about 1663. Both fled in the 1670s when hostile Indians were on the rampage.

The first action in establishing the settlement called Stow occurred in 1669 through the General Court of the Massachusetts Bay Colony. On May 16, 1683, twenty families were deemed the maximum the land could support and the town of Stow was incorporated. In the latter part of the century the Town had two main concerns: achieving self-sufficiency and finding a minister. Stow originally included portions of what are now Boxborough and Maynard. In the early 1700s some of the first bridges were built in Stow primarily to cross the Assabet River. In the late 1600s the first mill was documented on "Assibath Brook" (now Elizabeth Brook). Many other mills followed: "wherever there was sufficient flow of water one could expect to find a mill" (Childs, 1983).

One of the more notable citizens of Stow in the 1700s was Henry Gardner who in 1768 was unanimously chosen to go to Faneuil Hall in Boston to take "the state of our public affairs" into consideration. He was later appointed Receiver-General by the Provincial Congress to collect and hold the colonists' taxes in lieu of payment to the Crown. In 1775 he was unanimously elected Treasurer by the 3rd Provincial Congress.

On April 19, 1775, John Gates Diary officially recorded that "a civil war [the Revolution] began in this Province" (Childs, 1983). Dr. Samuel Prescott came galloping into Stow to warn the people and the 81 militia men that the British were coming.

After the Revolution, the Town of Boxborough was formed in 1783 with lands annexed from Stow and Littleton. The population of Stow was about 935 in that year. In the early 19th Century, the town of Maynard was formed from the area of Stow known as Assabet Village.

In 1786 there was a severe economic depression. Farmers were so desperate that in Western Massachusetts they started a revolt, Shay's Rebellion. Captain Nathaniel Sargent from Stow led a company to quell the revolt. Times were particularly hard after the Revolution so the Town built the Poor Farm still located on White Pond Road.

The 19th century was a time of growth and change. The appearance of the Town was documented on the 1830 map of Stow. The woolen mill was built on the Assabet River in 1813. In 1823, Lucy Smith bought the Gibson Farm on Pompositticut Hill and eventually deeded it to her son-in-law, Isaac Maynard. Eventually this land became a part of the town of Maynard. "Half-mile trees" - elms - were probably planted before 1850 from Rock Bottom (now Gleasondale) to Stow Center. Dutch Elm disease has now destroyed all of them. The railroad came to Rock Bottom in June of 1850. It came from South Acton through Maynard eventually to Rock Bottom and ended in Marlborough. Near the Rock Bottom Mill was a shoe factory and cabinet makers

The Civil War drew a prompt response from the Stow militia. The townspeople had long supported abolishing the slave trade. Stow sent 112 men to fight. The Rock Bottom Mill prospered by supplying woolen goods.

Some of the more notable citizens of Stow of this period included John W. Brooks, a railroad magnate, Dr. Willena Peck, a distinguished physician, Alonzo Parks, an African trader, John Witt Randall, a learned scholar and collector, Col. Elijah Hale, businessman and politician, and Edwin Whitney, a lawyer and politician.

At the beginning of the 20th century, many changes occurred. Stow's population was 1002. The electric trolley line of the Concord, Maynard and Hudson Street Railway was installed through Stow. In 1923, the trolley was replaced with buses. Hudson Light and Power brought power to Stow in 1906. A little later the Marborough-Hudson Gas Company brought gas to the community. Indoor plumbing, a telephone in the Town Hall and running water were now in place. Wireless was available at every railway station. Shortly after 1912, radios were commonplace in households. The automobile appeared in Stow in the first part of the century.

The dam on Bailey Brook on Barton road enlarged Lake Boon and a few summer cottages were built around the Lake. A steamer ran around the shore to transport men to and from the train stop at Whitman's Crossing near what is now the corner of Sudbury Road and Barton Road. The Town took title to the Lake Boon dam in the late 1950s.

World War I had 77 Stow "boys" enlisted. After the war many immigrants arrived having fled Europe. In the Depression it was hard to make money but the citizens of Stow, good farmers, did not go hungry and inspired non-farming people to garden. The hurricane of 1938 did significant damage to the trees and buildings of the Town. Several sawmills were set up and worked for more than three years to convert the damaged trees into lumber. Then came World War II and many young men in Stow were drafted. Much of the stockpiled lumber cut from the trees felled during the 1938 hurricane was used to construct the barracks at Fort Devens in Ayer. After the war there was a great pressure to produce more food and Stow orchards constructed cold storage barns to handle the demand for increased quantities of fruit.

In 1952 the Planning Board was established. In 1961 the Conservation Commission, concerned with land acquisition and preservation of open space, was established. Since that time the Town, largely through the efforts of the Conservation Commission, has purchased or acquired many significant parcels of land in Town for conservation and agricultural preservation and actively manages much of this land for public use. Furthermore, the Town has obtained a number of conservation restrictions on privately owned property through donations, purchases and negotiation with developers.

The town’s open space preservation efforts have been augmented by the Stow Conservation Trust, a private, nonprofit land trust in existence for more than 25 years. The Trust has been encouraging many of the larger land holders in the Town to protect their land especially through agricultural and conservation restrictions (CRs). The Trust has also made efforts to educate and provide non-

monetary assistance to private land holders so that they might realize the variety of different protection mechanisms that are available. This effort was instrumental in a number of recent efforts to preserve properties including Shelburne Farm, a local apple orchard preserved through the Agricultural Preservation Restriction program of the Division of Food and Agriculture. As part of the preservation package the Town purchased an adjacent woodlot for conservation/recreation land. An abutter donated a parcel of land to the Town to grant access to the conservation land and in addition, placed a permanent conservation restriction on an adjacent parcel. Subsequently, the Town has put together several other purchase/CR parcels linked to the Shelburne Farm area. Recent partnerships between the Town and the Stow Conservation Trust include the protection of the Red Acre Woodlands off Red Acre Rd. and South Acton Road and the Hale Woodlands parcel in southwest Stow. The Trust has also recently secured protection of the 32 acre Leggett Property along Rt. 62.

The Town of Stow has active recreation facilities and assets managed by the Recreation Department and a paid Recreation Director. Actively used by residents and especially youth groups the facilities have grown over time. However, the addition of required facilities has not kept up with the usage and demand resulting in an active recreation facilities deficit in the town. This issue is discussed in more detail later in this Plan. The Stow Recreation Commission is an appointed body of 5 members, chartered to oversee the Recreation Department and Director. The Recreation Department mission is to provide recreation opportunities for residents of Stow as well as to maintain the Town's recreational assets. Under leadership of the Recreation Director, a mix of programs are run and overseen. Some programs, such as the active school age soccer program and baseball program are run by independent groups, such as Stow Soccer Club, and Assabet Little League. Other programs are run by the Department. Two examples are the youth basketball program and the management of the town beach personnel and swimming programs. Other varied programs are independently run, with groups and businesses paying for use of fields and facilities. There is a very diverse list of programs year round promoted through a mailing to every resident for each season.

In 2001 the Town voted acceptance of the Community Preservation Act (CPA) and completed a Community Preservation Plan in 2002. The plan identifies the need to provide affordable housing as the community's most pressing priority. Because Stow currently only has about 7.5% of its affordable housing certified by the MA Department of Housing and Community Development (DHCD), the Town has been under threat of proposed Chapter 40B "affordable housing" development projects. With the approval of the Villages at Stow, a large 40B project along Rt. 117 at the intersection of Hudson Rd. and the completion of a DHCD-approved "planned production" plan, the town achieved protection from 40Bs for one year. The continuation of this "protection" is dependent on the construction timetable for this project and the town's ability to continue developing locally-sponsored affordable units. The town has adopted an inclusionary housing bylaw and CPA funds have recently been voted at Town Meeting for an innovative program to purchase deed restrictions on existing modest homes to keep them affordable. The overall aim of this approach is to provide additional permanent affordable units while also maintaining the rural character that is so highly valued by the majority of Stow residents. It is anticipated that additional projects using CPA funds to protect important open space parcels will be brought forward to town meeting in coming years. The Town has also recently created an Affordable Housing Trust, which will be able to expend revenues contributed by developers pursuant to the Town's Inclusionary Zoning Bylaw. This Open Space and Recreational Plan, and the ranking criteria developed by the Stow Open Space Committee should help guide those efforts toward protection of the most important parcels.

3C. Population characteristics

The population of Stow has increased from 5,144 in 1980 to 5,902 in 2000 and 6,385 in 2006. Although the ratio of adults to children was constant from 1980-1992, recently it has increased considerably (Table 1). This statistic, combined with documented crowded conditions at the town's existing ballfields, points to the need to provide additional playing fields. In contrast the elderly have declined in number, as has the remaining adult population. The racial mix in Stow is primarily Caucasian, however, there is a small representation of diverse minorities including Native Americans (Table 2); the racial mix has not changed much since 1992. The population is well educated with more than half of the adults having a college education (Table 3). This is also reflected in the distribution of occupations which indicates that more than half of the Town constitutes professionals and managers (Table 4). Notable is the declining number of individuals who list "agriculture" as their primary occupation.

Table 1. Population distribution in Stow, 1992-2000.

	1992[1]	2000[2]
Children:	1451	1700
pre school	433	510
K-8	646	866
9-12	372	324
College age	318	270
Elderly	578	485[3]
Adults other than above	3264	3447
Median age (years)	35.6	38.8
Ratio of children to adults	0.35	0.43
Total	**5611**	**5902**

[1] 1992 Stow Town Census

[2] 2000 US Census

[3] 65 years and older

n.a. Data not available

Table 2. Racial Make-up of Stow [a]

White	5635
Black	21
Native American	11
Asian/Pacific Islander	120
Hispanic	84
Other	21

[a] 2000 US Census data.

Table 3. Educational Attainment of Stow Citizens[a]

0-8 years of school	52
9-12 yr. no diploma	88
high school graduate	746
Some college	625
college graduates and beyond	2451

[a] 2000 US Census data.

Table 4. Occupation distribution of adults in Stow as of :

	2000[1]		1990[2]	
	Number	%	Number	%
a. Management/professional & related	1952	56	1520	46
b. Sales and office occupations	633	18	See clerical	
c. Clerical[3]	n.a.		829[3]	25
d. Craftsmen/foremen/artists[3]	n.a.		199	6
e. Agriculture	1	<1	50	2
f. Service	277	8	261	8
g.Construction/extraction/maintenance	133	4	162	5
h. Production/transportation/material moving	151	1	n.a.	
i. Self-employed[4]	349		267	8
Totals	3496		3288	

[1] 2000 US Census data.

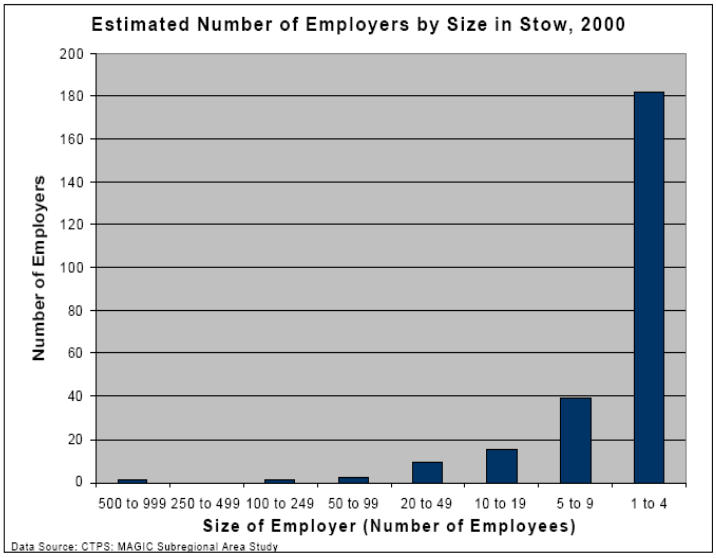
[2] 1990 US Census data.

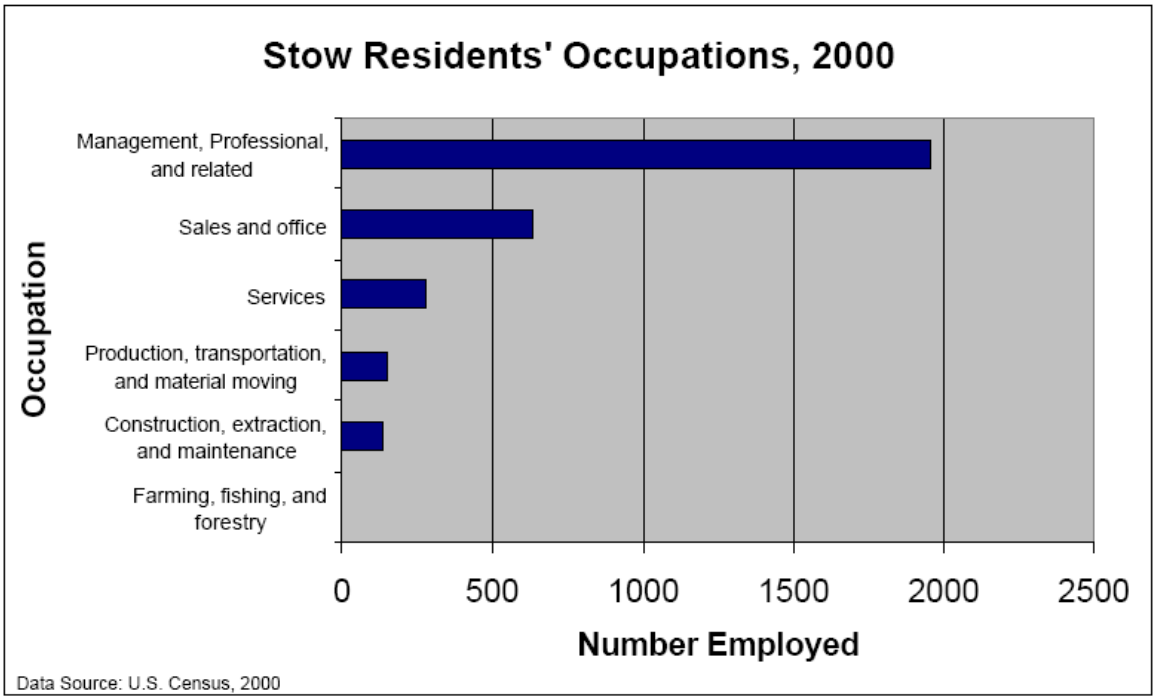
[3] Now merged into another category in the 2000 US Census data.

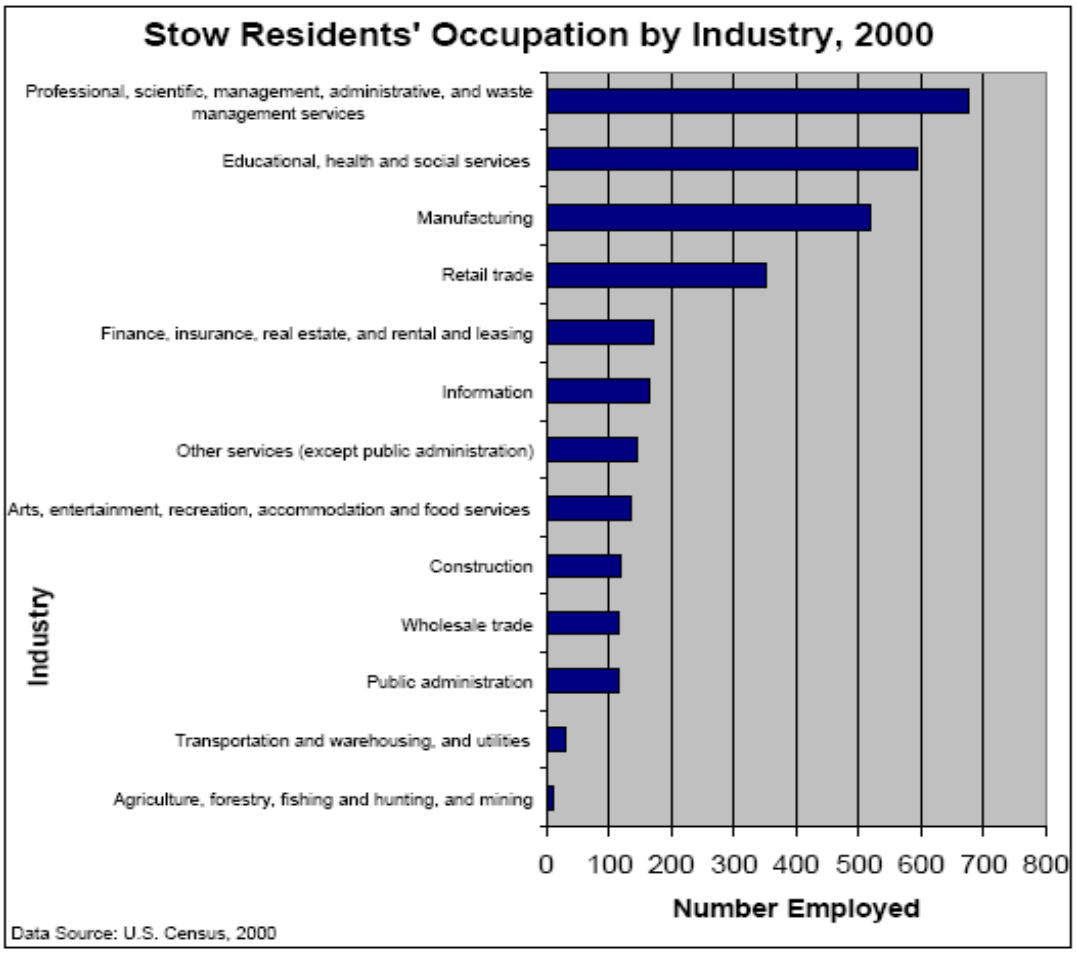
[4] May overlap into some of the other categories; was not clear in 2000 US Census data.

n.a., data not available.

Size of Employers in Stow




Stow Residents' Occupations, 2000
Occupation
Management, Professional, and related
Sales and office
Services
Production, transportation, and material moving
Construction, extraction, and maintenance
Farming, fishing, and forestry
0
500
1000
1500
2000
2500
Number Employed
Data Source: U.S. Census, 2000


Stow Residents' Occupation by Industry, 2000
Industry
Professional, scientific, management, administrative, and waste management services
Educational, health and social services
Manufacturing
Retail trade
Finance, insurance, real estate, and rental and leasing
Information
Other services (except public administration)
Arts, entertainment, recreation, accommodation and food services
Construction
Wholesale trade
Public administration
Transportation and warehousing, and utilities
Agriculture, forestry, fishing and hunting, and mining
0
100
200
300
400
500
600
700
800
Number Employed
Data Source: U.S. Census, 2000

3D. Growth and development

Patterns and trends

The current population is about what was projected in the 1997 Open Space Plan. The earlier, rapid growth of the eighties slowed, but during the mid nineties increased again until the recent recession (Table 5 & 6). Slowing of the 1980s rapid growth was reflected in the drop in new housing starts and housing sales as well as in the drop in median sale price in the nineties, but this has now changed. Although the median house price dropped $50,000 in the early nineties from its peak in 1987-88 (Table 7), it has now skyrocketed, in part due to the construction of ever-larger homes. During the late 1980s and early 1990s the number of school age children dropped but has now increased considerably putting more pressure on the school system. Housing starts have increased in the last couple of years as the economic recession has eased but are still low compared with other towns in the region. Although the median age of the town has increased, the elderly population has decreased. This may be due to increasing property taxes pushing people on a fixed income out of town.

The Town of Stow contains 11,311.4 acres of land and 167 acres of water. The population density of Stow is 326.79 persons per square mile, compared with a density of 1946.9 in Maynard, 428.27 in Boxborough, 207.77 in Bolton, 222.14 in Harvard, 1532.28 in Hudson, and 1004.10 in Acton.

Income Characteristics:

In 2000, the median income for a household in the town was $96,290, and the median income for a family was $102,530. Males had a median income of $75,758 versus $40,911 for females. The per capita income for the town was $38,260. About 1.5% of families and 2.7% of the population were below the poverty line, including 1.6% of those under age 18 and 1.7% of those aged 65 or over.

Table 5. Population of Stow: 1930-2003.[a]

1930	1142
1940	1243[b]
1950	1700[b]
1960	2573[b]
1965	3191[b]
1970	3984
1975	4678[b]
1980	5144
1985	5308
1990	5328
1995	5626[c]
2000	5902
2001	6110[c]
2002	6050[c]
2003	6079[c]

[a] US Census data unless otherwise indicated.

[b] MISER, University of Massachusetts Amherst.

[c] Stow Town Clerk; more recent numbers are suspect because some respondents are unwilling to list their children for security reasons.

[d] MAGIC projection, Stow 2000 Master Plan

Table 7. Housing and Construction in Stow.[a]

Year	New construction[b]	Number of sales	Median sale price
1986	116	118	$199,000
1990	65	50	$178,500
1995	7	109	$288,601
1998	25	126	$383,592
2000	27	123	$479,818
2002	21	155[c]	$573,793

[a] Banker and Tradesman & local realtors.

[b] 1990 US Census data.

[c] Includes Meeting House sales.

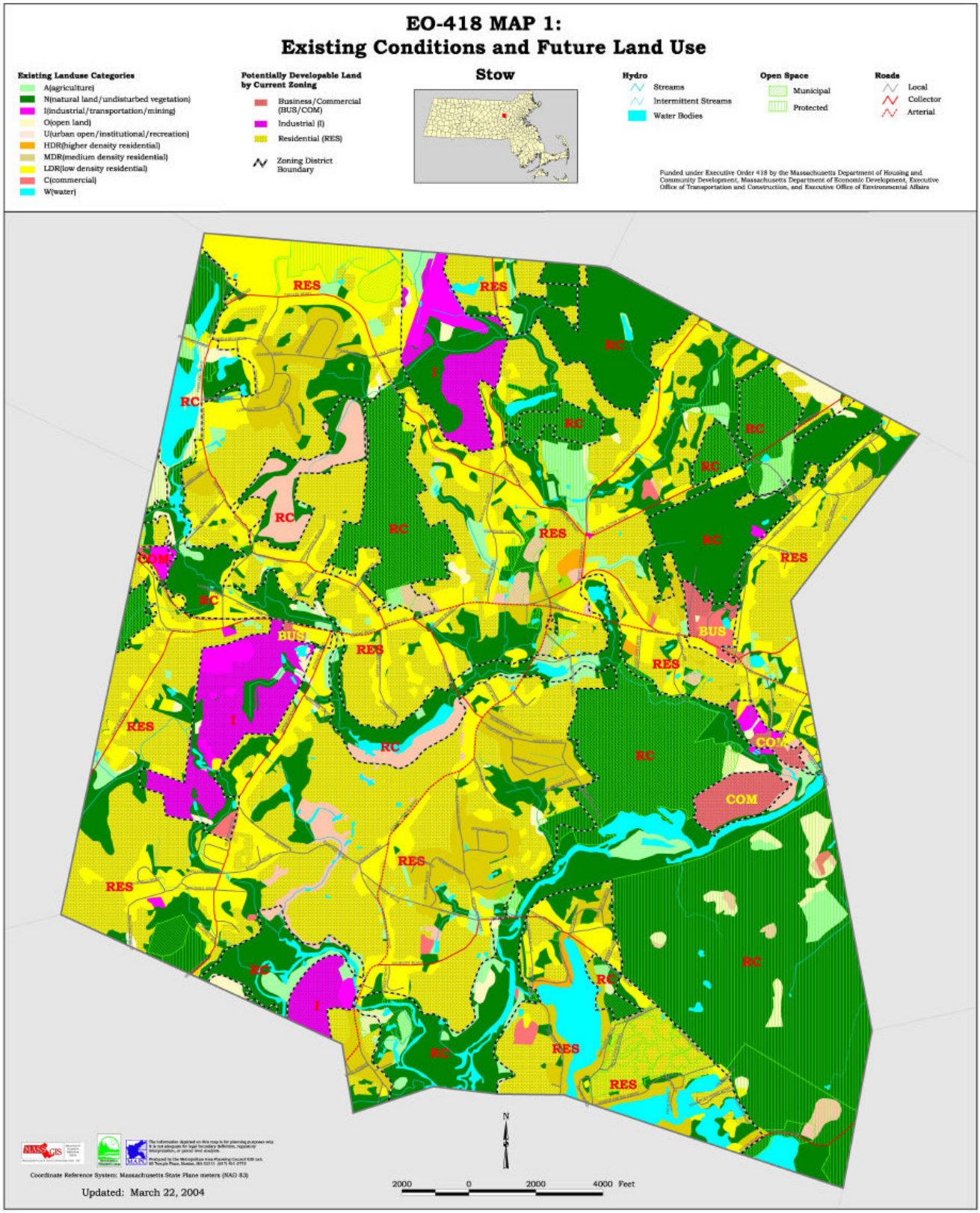
n.a. not available

Single Family New House Construction Building Permits in Stow

(from www.citydata.com)

Year	# of Permits	Average Cost
1996	19	$118,200
1997	30	$130,000
1998	29	$141,900
1999	23	$113,600
2000	41	$173,000
2001	28	$161,700
2002	36	$167,500
2003	16	$238,700
2004	34	$228,100
2005	29	$270,800

Stow Build Out Map – Our Future as Programmed by Existing Zoning



Infrastructure - Transportation systems

The principal transportation network which serves Stow has not changed significantly from that described in the 1997 Open Space Plan. Route 62, heading south into Hudson, previously had a low underpass. The underpass was removed and trucks now readily maneuver this route. The regional transportation accessibility has not changed.

Public transportation is still provided only by the South Acton train station, part of the MBTA's Fitchburg to Boston line. There are still not many designated pedestrian, bicycle or horseback ways, although in progress is the establishment of a bicycle/walking trail, the Assabet River Rail Trail (ARRT), along the old Boston & Maine railroad right of way, running from Hudson, northerly from the Lake Boon area, parallel to the Assabet River and toward Maynard. The ARRT is partially complete except for Stow where a few private landowners have raised concerns; several alternative proposals are being examined that would provide for continuation of the trail. (ARRT Feasibility Study, 1997).

Infrastructure - Water supply systems

The water supply system in Stow has not changed significantly from that described in the 1997 Open Space Plan. It is still primarily based on individual on-site systems except for a number of privately owned "public" systems which either serve small developments, recreation areas or businesses and the town-owned system described in the 1980 Plan. The "public" systems include those of Harvard Acres, Juniper Hills, Plantation Apartments, Meetinghouse at Stow, Pilot Grove Apartments and the Town Common water system, which serves the town buildings, one home and a church. Additional multiple-user water supply systems are proposed for the Villages at Stow 40B and the Arbor Glen "active adult neighborhood" development off Hudson Road. The groundwater pollution problems noted in Section 4.7.7. of the 1997 Open Space Plan have mainly been resolved. Currently under consideration is a small-scale public or private water supply system to serve the "Lower Village" area, in order to alleviate regulatory constraints on businesses in this area. .

Protection of groundwater resources is a high priority according to Stow residents. It received a high priority ranking in the town-wide survey for the Master Plan in addition to being identified by participants in the Master Plan public forums. In the late 1980s Town Meeting approved a Water Resource Protection overlay zoning district in order to protect the groundwater resources of Stow. The overlay zones are based on an evaluation of the groundwater potential throughout the Town. The protected areas are those with the highest potential and generally coincide with the major aquifers in Stow. The Water Resource Protection district is shown in Map 4.

Infrastructure – Wastewater Disposal systems

Sewage disposal systems in Stow, still mostly individual on-site septic systems, have not significantly changed from that described in the 1997 Open Space Plan. New systems are all required to meet the local Board of Health regulations which are more stringent than the State's Title 5. Several new high density residential developments have constructed or plan to construct on-site private sewage treatment facilities including Meetinghouse at Stow on Rt. 117, the Villages at Stow 40B on Rt. 117, the Arbor Glen Active Adult Neighborhood (AAN) development on Hudson Road, and the Ridgewood AAN on Boxboro Road.

Long-term Development Patterns

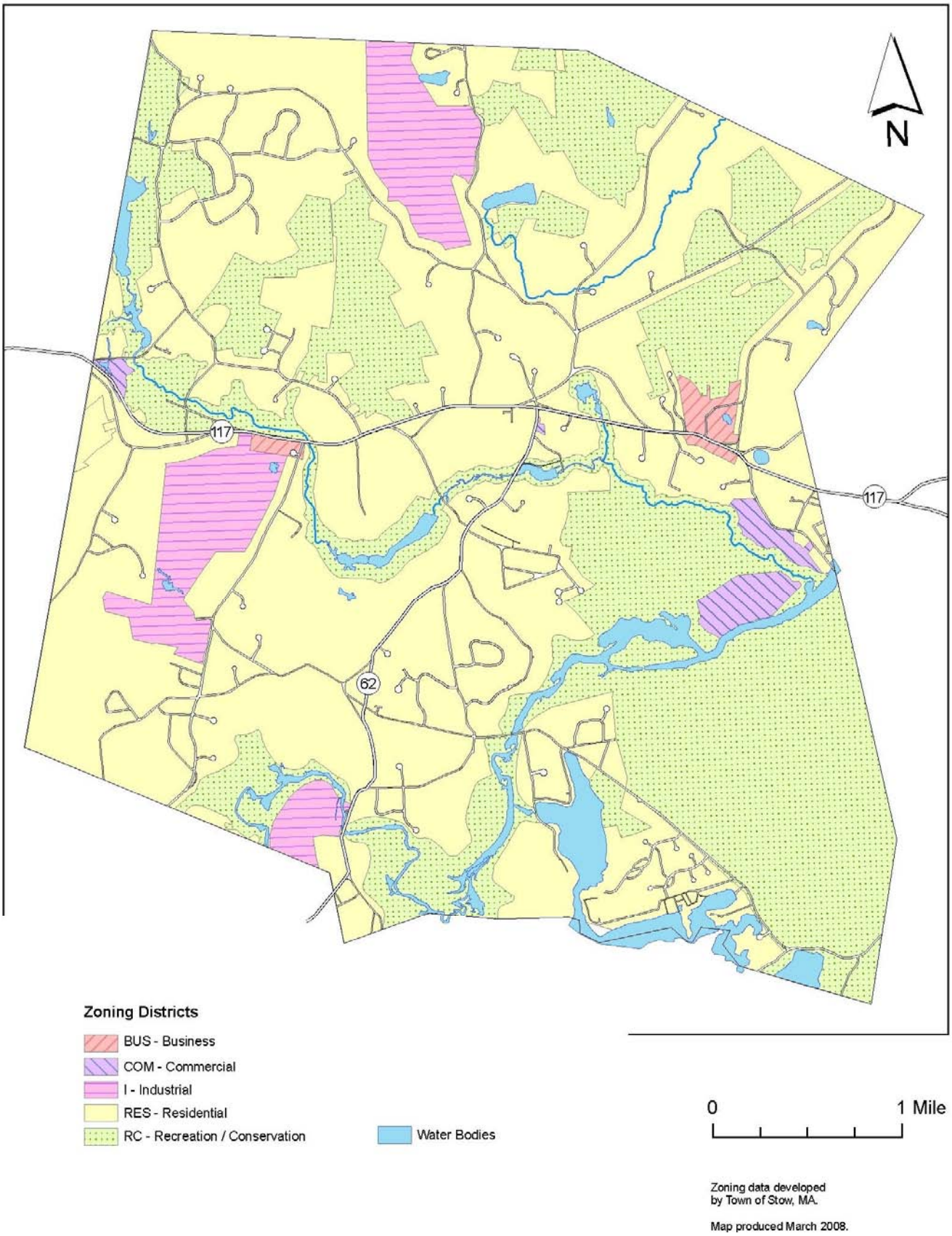
Stow has always prided itself on maintaining its rural character. Various town surveys over the years have consistently shown that the rural nature of the Town is crucial to the citizens. The most recent survey taken by the Master Plan Committee in 2003 reconfirms this desire. The perception of rural character is strongly dependent on the large amount of existing open land along the main roads of

Stow. Thus preservation of these highly visible undeveloped parcels is necessary to maintaining the character of the Town.

The traditional development pattern in Town has encompassed 2 primary types of development: residential and business/light industry. During the 1980s, land values soared and some tracts of agricultural and forest land were sold for development. With the recession of the late 1980s and early 1990s and the drop in land values, growth slowed to its pre-boom pace. In the mid-1990s, however, housing growth increased and is likely to continue for the coming decade. Recently approved development projects include the 96 unit Villages at Stow 40B being developed by Habitech, and the 66-unit "Arbor Glen" Active Adult Neighborhood development by Pulte Homes. Both of these developments are near the intersection of Hudson Rd. and Rt. 117. In addition, Landwest Development (Habitech) has begun construction of 33 homes at Derby Woods off Harvard Road. Additional large developments are likely to continue to be submitted to the town and will accelerate the pace of new home construction. Particularly vulnerable is the land in the southwest corner of town where there are a large number of undeveloped parcels and little protected land. This area is identified for special attention in the Action section of this plan. Also vulnerable are all of the town's privately owned golf courses, which remain undeveloped due to the positive economic climate for golf, but are otherwise highly developable.

The 2000 Build Out Study completed by the Executive Office of Environmenal Affairs (EOEA) for Stow identified the potential for the construction of more than 1300 additional homes *under current zoning*, which would increase the population from 5902 at the time of the study to 9582. See Required Map 1-Zoning. Not taken into consideration are increases in population resulting from "density bonuses" in 40Bs or AAN developments, which could put this total higher. The study estimated that new development permitted by current zoning would add 699 new schoolchildren to the town, generate a demand for 515,915 additional gallons of water/day, add 30 miles of new roads, and generate an additional 1888 tons of solid waste/year. The study also identified the potential for an additional 3.1 million square feet of commercial/industrial development on land currently zoned for this use. A map of what Stow would look like if built out – produced as part of this study – is contained in the previous section.

Stow - Zoning


N
117
117
62
Zoning Districts
BUS - Business
COM - Commercial
I - Industrial
RES - Residential
RC - Recreation / Conservation
Water Bodies
0
1 Mile
Zoning data developed
by Town of Stow, MA.
Map produced March 2008.

This study provided helpful insight for the community and depicts a completely suburbanized landscape that will require significant investment in capital projects (such as new schools) to meet the demand generated by this development. While it is difficult to imagine a future Stow in which the only "open" land is that which is currently under permanent protection, that is the future reality that is depicted in the build out analysis. In addition to the impacts on the school population, such development would fragment habitat, threaten surface and ground water quality, reduce recreational opportunities, add substantially to traffic issues on major arteries, and fundamentally change the character and quality of life of Stow. The town is currently in the process of revising and updating its master plan. In addition current efforts are underway to consider modifications to zoning bylaws that would shift the pattern of development using tools like transfer of development rights and village-oriented development. In addition, one of the recommendations of this Open Space and Recreation Plan is that the town actively work to reduce the total buildout that is possible using a variety of tools including zoning, land acquisition, and other land protection techniques such as conservation restrictions, protecting one additional acre of land for every acre that is developed.

New Flagg Hill Entrance and Open Space Parcel off Trefry Lane.

Protected through collaborative effort by Stow's Planning Board and Conservation Commission

Section 4

Environmental Inventory and Analysis

4A. Geology, soils, and topography

The topography in Stow varies from the low elevations along the Assabet River (180 feet above Mean Sea Level) to the high elevation of 457 feet on Marble Hill. The Assabet River is the main drainage area for most of Stow. The areas of highest elevations in Stow are the bedrock and glacial till areas in the northwest quarter of the Town. Other major topographic highs include drumlins such as Spindle Hill, Birch Hill, Pilot Grove Hill, Spring Hill and Orchard Hill.

Stow's geology was studied extensively in 1977 by IEP, an environmental consulting firm. Relevant highlights from this report are contained in the sidebar, and the report and accompanying maps are available in the office of the Stow Conservation Commission.

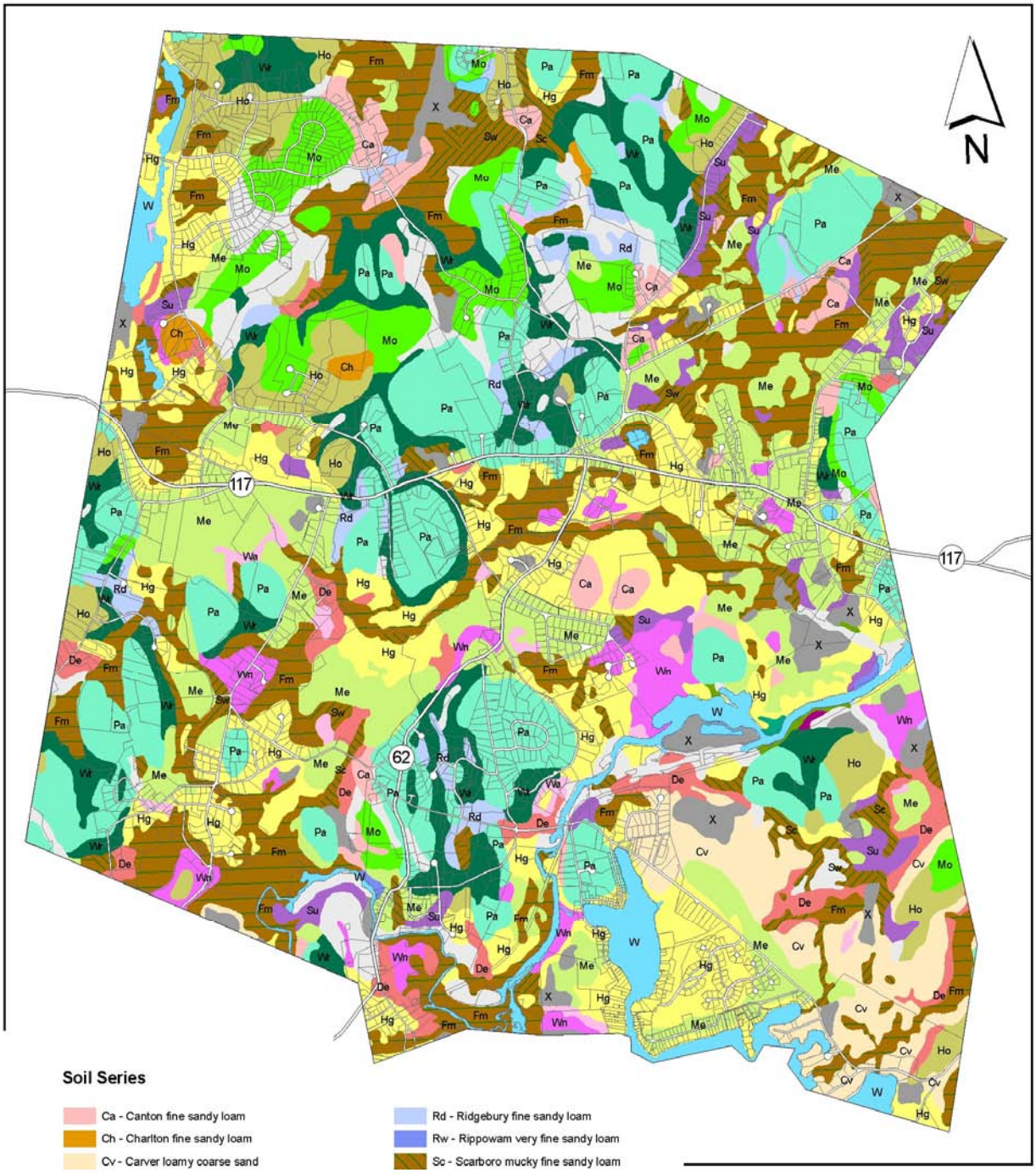
Soils and topography place constraints on development in Stow and affect land use patterns. In steep areas, access often requires significant cuts or fills, creating drainage problems, and erosion and sedimentation. An example of this can be seen in the lots that have been developed along the southwest side of Wheeler Road on the side of Spindle Hill or the access road to Pilot Grove Apartments on Pilot Grove Hill. The Town has not adopted a steep slopes bylaw to address these issues but has recently adopted a common driveway bylaw which may serve to reduce the problem of multiple driveways serving individual single family houses. Similar changes could be made in the subdivision rules and regulations to require that additional scrutiny be given to lots with severe topographic constraints. For example, some towns limit the amount of cut and fill or clearing that is permissible in these situations.

Stow's Geology

The present topography in Stow is a product of previous glacial activity. During the past glaciations, bedrock areas in Stow were cleared of loose rock and smoothed over. In some cases small bedrock knobs were plastered with unconsolidated material thereby increasing the height of these features (drumlins). Channels which existed in the bedrock were widened and deepened through glacial scouring action. And finally, as the glaciers were retreating, meltwater streams flowing out from under the glaciers dropped sands, gravels and silts either in large glacial lakes or along those drainage areas that existed in Stow. These meltwater deposits created the flat plains and irregularly shaped hills and ridges found throughout the Town.

*The bedrock units in Stow include a wide variety of rock types that are classified as **igneous** and **metamorphic**. These types of rocks were altered from their original form through tremendous heat and pressure that was generated during the process of Appalachian mountain building. Igneous rocks are rocks that have been completely re-melted and have lost all original appearances. These rocks are composed of minerals (such as quartz, feldspar, mica, and amphibole) that are usually large enough to be seen by the naked eye. Metamorphic rocks are rocks that have been modified in composition or appearance by mountain building forces. They contain the same types of minerals common in igneous rocks and which are usually visible to the naked eye. The common igneous rock type in the Stow area is **granite** (a coarse grained rock dominated by light-colored minerals). The common metamorphic rock types are **gneiss** (a coarse grained rock with alternating bands of dark and light colored minerals), **schist** (a rock with fine grained, flat minerals arranged in sheets or laminae), and **amphibolite** (a schist which is dominated by the minerals amphibole and plagioclase). Also found are **marble** (a light colored, crystalline rock, the metamorphic equivalent of limestone) and **quartzite** (a fine to medium grained rock, the metamorphic equivalent of sandstone.)*

Stow - Soils



Soil Series

- Ca - Canton fine sandy loam
- Ch - Charlton fine sandy loam
- Cv - Carver loamy coarse sand
- De - Deerfield loamy sand
- Fm - Freetown muck
- Hg - Hinkley loamy sand
- Ho - Hollis-Charlton or Charlton-Hollis Rock Outcrop
- Lm - Limerick silt loam
- Me - Merrimac fine sandy loam
- Mo - Montauk fine sandy loam
- Pa - Paxton fine sandy loam
- Po - Pootatuck fine sandy loam
- Rd - Ridgebury fine sandy loam
- Rw - Rippowam very fine sandy loam
- Sc - Scarboro mucky fine sandy loam
- Su - Sudbury fine sandy loam
- Sw - Swansea muck
- Wa - Wareham loamy sand
- Wn - Windsor loamy fine sand
- Wo - Winooski very fine sandy loam
- Wr - Woodbridge fine sandy loam
- X - gravel pits, urban, disturbed (Udorthents)
- Not classified
- Water bodies

0 — 1 Mile

Soils data from NRCS 2006.
Provided by MassGIS.

Map produced June 2006.

The rock types described above can be divided into four units. This division is based upon similarities in mineralogy and age of the bedrock. The units are (from youngest to oldest): the Andover Granite, Nashoba Formation, Shawsheen Gneiss, and Marlboro Formation. Each of these units consists primarily of gneiss, schist, and granite. These units are quite similar in composition and physical properties. The subdivision of the Nashoba Formation into "member" units is largely based upon the differences in the location, distribution, and quantity of magnetic minerals found in the various units. Faults and contacts between major units have also been inferred largely based upon differences in magnetic properties. This type of division is the result of recent advances by the U. S. Geological Survey which permitted bedrock geologic interpretations to be made in areas where the bedrock was hidden under thick surficial deposits.

From a land use perspective, the bedrock in Stow has not been a major impediment to human uses of land. In most of Stow, bedrock is found only at considerable depths. Where bedrock occurs at the surface, the exposures are small and rather scattered. Most of the exposures are limited to either the northwest quarter of Stow or the southeast corner within the Assabet Refuge. In most places where bedrock is exposed, there are other constraints on land use such as high slope and/or perched water tables.

The bedrock elevations determine the subsurface drainage pattern for groundwater flow. Although subsequent erosion and deposition has significantly reduced the relief and filled in the valleys, subsurface water in Stow is directed essentially toward two southward flowing aquifers which connect with a larger aquifer which flows east-southeastward along the Hudson-Stow town boundary.

Glacial processes occurring in Stow have had two major effects: (1) pre-existing bedrock topography was scoured and eroded and (2) most areas of Stow were covered with a veneer of unconsolidated deposits of varying thickness. The material eroded from the land surface by glacial erosion became incorporated into the ice and was transported southward. Although recent glacial erosion slightly modified the bedrock topography, it does not appear to have had any major effect on the overall pre-glacial bedrock topography. Deposition of material from the ice did create many new land forms which have caused major modifications of the pre-glacial drainage patterns. Glacial deposition consists of two types: deposition of material directly by the ice, and deposition of material melted from the ice and then transported and deposited by melt-water streams.

Stow has many low-lying wet areas that place constraints on the development on septic systems. A good example is the 124- acre Kane property on Rt. 117, which was examined by the School Building Committee in 2005 as a potential site for a new school. Despite its large size and access to Rt. 117, large areas of wetlands and streams, combined with steep slopes on a portion of the property, will make any development on this parcel challenging.

As the town approaches buildout the remaining parcels will be more and more constrained by wetlands and steep slopes. This will necessitate increased scrutiny of proposed projects, including professional review of applications, particularly roadway designs and stormwater management plans.

4B. Landscape Character

Stow is frequently considered a rural community by its residents. This impression is reinforced by the areas of open space and scenic vistas visible along the Town's roadways. In particular, the many active orchards and farms lend a distinctively rural element to the Town of Stow that is not found in many nearby communities. In addition to the agricultural and conservation aspect of the community, Stow has five active golf courses – Stow Acres North and South, Butternut, Wedgewood, and Stowaway. These open spaces contribute to the rural visual impression and sense of "elbow room" in Stow.

In addition, to the visible farms and golf courses, there is a large amount of undeveloped land that is "hidden" behind the many lots which front along public ways. One has only to look at the assessors' maps to discern the large parcels behind these lots; areas left in their natural state because of difficult access, wetlands, rocky soils, or poor drainage.

Where the forested hills rise behind these homes, or one is able to see between the buildings, then one is able to sense the extensive undeveloped landscape of Stow.

Also contributing to the town's open character are "odd" lots, which occur at forks in the road, or on the outside of curves, or at wetland crossings, and bring a welcome relief to the developed roadside landscape, contributing a positive landscape attribution far beyond their size. Some of these lots have been identified in this plan, however, there has been no comprehensive inventory of Stow's scenic assets. The "Scenic Resources" map accompanying this Plan identifies important unprotected scenic parcels in Stow.

One of Stow's more noticeable landscape aspects is the health of the roadside trees. These trees are endangered by road salt, by extensive cut-backs for telephone, TV cable and electric wires, and by disease - Dutch Elm has killed most of the majestic Elm trees, and Ash Decline is quickly eliminating the White Ash, which is currently the predominant roadside tree. About 10 years ago, Stow purchased 100 of the newly developed Elms which are resistant to the Dutch Elm disease. These trees are being grown on Town conservation land and when they reach a reasonable size they will be placed throughout the Town to enhance the scenic roadways. A similar effort is underway using the newly developed resistant variety of the American Chestnut.

In an attempt to preserve the existing character of Stow, the Town has adopted a zoning bylaw that provides for "planned cluster development" of larger parcels. This bylaw encourages a developer to build houses on reduced size lots, leaving large areas open for recreation and conservation purposes instead of using the traditional "cookie cutter" approach to subdivision. The landowner can realize the value of the property and the Town gains by retaining some of the open space. Several developments are now underway or planned that make use of this bylaw.

In addition, the town has a Lower Village Committee that is working to improve the visual character of the streetscape in Stow's commercial center by promoting design standards that will achieve a consistent "look and feel" to this area.

A final element of landscape character is the town's "dark skies." Stow has an active Lighting Subcommittee that is working with local businesses and others to reduce light pollution in the night sky.

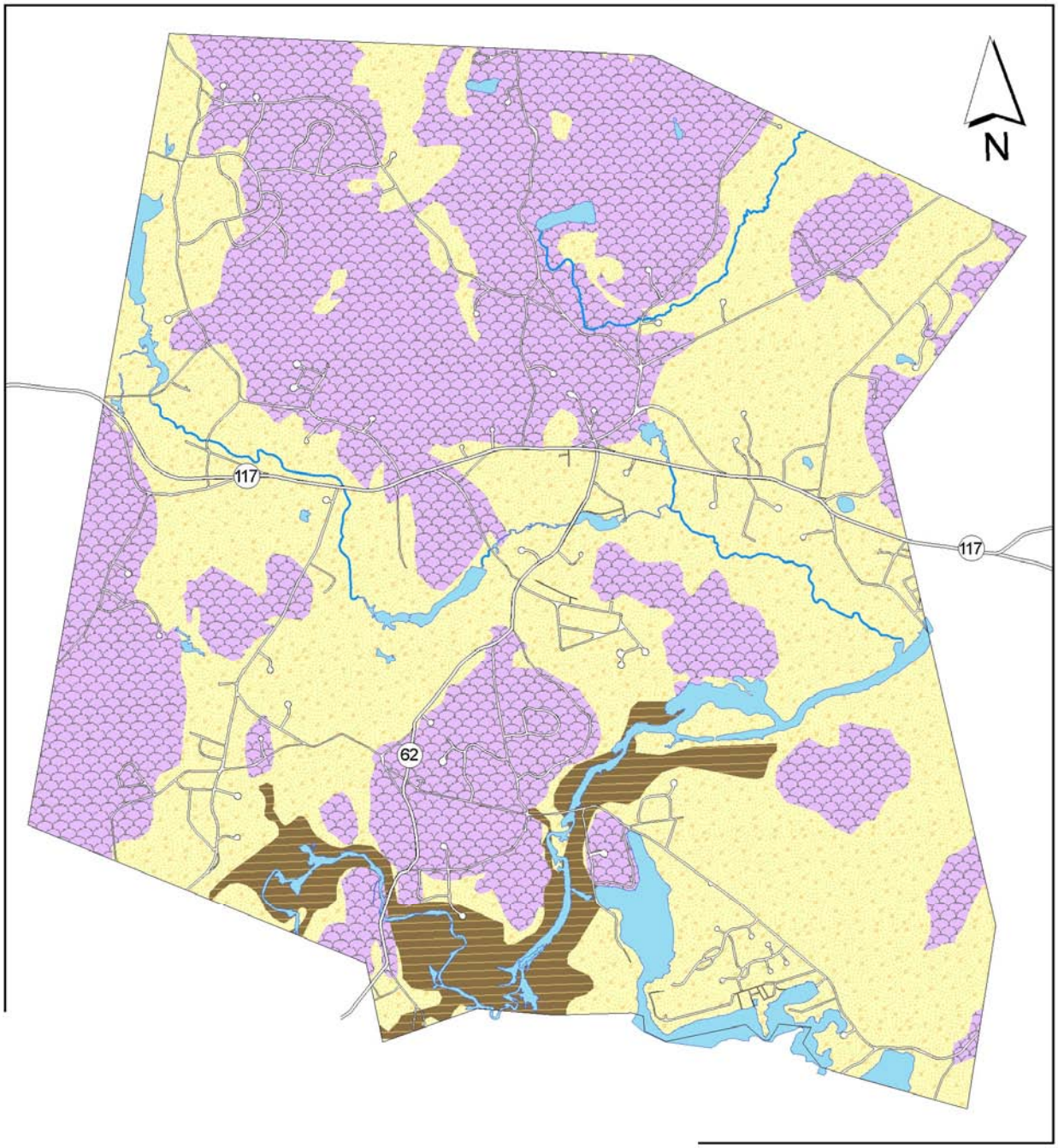
4C. Water Resources

Watersheds and Surface Waters

Stow is located within the Concord River basin and the Assabet River sub-basin of the SuAsCo river basin (Sudbury, Assabet, Concord rivers). Nearly all the surface runoff in Stow enters one of three drainage areas: Heath Hen Meadow Brook which flows northward into Acton and joins Fort Pond Brook; Elizabeth Brook which drains the middle of Stow and empties into the Assabet River near the Maynard town line; and Assabet River, which with its smaller tributaries directly drains the lower third of Stow as it continues eastward to meet the Sudbury River and form the Concord River. The Elizabeth Brook is the largest tributary of the Assabet River.

The Delaney Flood Control Project in the northwest corner of Stow also uses land in Bolton and Harvard; it is essentially the headwaters of Elizabeth Brook. Although the Delaney Control Project was constructed for flood control, upland development in Stow, Harvard and Bolton has increased the peak and volume of flow entering this flood storage area, decreasing its effectiveness.

Stow - Surficial Geology



Surficial Geology

- Sand and Gravel
- Till or Bedrock
- Floodplain Alluvium
- Water Bodies

0 1 Mile

Surficial Geology data provided by MassGIS.
Based on 1:125,000 scale USGS dataset.

Map produced June 2006.

Lake Boon is another major surface water body in Stow (and Hudson); the pond itself is made up of three major basins, which were formed by the construction of a dam in order to provide water storage to drive the Assabet Mills in Maynard. The Town of Stow purchased the water rights and subsurface land area of Boon pond (in Stow) from the heirs of Assabet Mills.

As Stow has grown and developed, the summer cottages which ring the basins of Lake Boon have been converted to year-round homes; many of the sewage disposal systems for these residences do not meet the Board of Health's Regulations, and failures have to be treated as emergencies, resulting in limited upgrading to the extent practical, given the small lots, short distance to the water body, and proximity of adjacent lots' wells and sewage disposal systems. The recent changes to Title 5 are resulting in improvement to many of these systems, which is likely to improve water quality.

A recognized problem associated with Lake Boon is the eutrophication that is occurring due to increased growth of aquatic weeds (notably Milfoil and Fanwort) caused by runoff from lawn fertilizers and septic leachates from the densely developed shores. Despite regular pump outs and improvements to septic systems, installation of 25 leaching catch basins within the watershed, and broad community education on practices to minimal runoff,excessive growth of several species of invasive aquatic weeds are still adversely affecting recreational use of Lake Boon. The Lake was treated for weeds in the summer of 2007 as part of three-year Community Preservation project to restore the lake for swimming and boating. The Town of Hudson also contributed funds to this effort.

The Assabet River is a major regional surface water feature that flows from the southwestern part of Stow to the east-central part of Stow. Nearly all surface drainage in Stow flows either directly to the Assabet or to tributaries of the Assabet - Heath Hen Meadow Brook in northern Stow and Elizabeth Brook in central Stow. A small area in the southeastern corner of Stow drains into the Sudbury River.

Assabet River from Boon Road

Stream discharge normally varies in an annual cycle, declining from peak flows in the early spring, reaching minimums in the later summer and early fall, and then rising and remaining at moderate heights during the winter. The US Geological Survey has maintained measuring stations on the Assabet River (150 feet upstream from the bridge on Route 27 in Maynard) and on Heath Hen Meadow Brook.

The Assabet River has serious water quality problems that are related to both water quality (excessive nutrients) and water quantity. A local nonprofit watershed association, Organization for the Assabet River, is regularly monitoring both issues at various monitoring stations and is working with EPA and DEP to address discharges from sewage treatments plants upstream of Stow in Hudson, Marlborough, Northboro and Westboro that are affecting the river. While these are significant sources of nutrient flow, “background” impacts from septic systems, surface runoff, and water supply wells from development within the watershed are also contributing to the river’s poor water quality.

Aquifer Recharge Areas

Abundant and clean ground water supply is one of Stow's most valuable resources. The subsurface hydrology of Stow is directly related to its subsurface geology, the ability of the rainfall to infiltrate into the ground, thereby becoming groundwater. Once there, it is constantly moving from areas of higher

elevation to areas of lower elevation. Therefore, it has to be constantly replenished; removal occurs as withdrawal for use, or through seasonal discharge into streams, ponds, and wetlands.

There are four general hydrogeologic requirements that must be met for an area to be a high yield aquifer:

1) surficial geologic deposits of proper size and sorting to produce high rates of water movement

2) sufficient saturated thickness of surficial deposits

3) sufficient area-wide recharge, and

4) acceptable water quality.

The 1977 IEP study mapped aquifer areas in the town of Stow that are likely to meet these requirements. Prudent protection of these aquifers and their recharge areas is vital to not only Stow but to other communities as well.

The quality of groundwater in the aquifers will depend to a large extent on the quality of water which recharges the aquifer – which is affected by the land uses at the surface. Land uses which discharge polluted or toxic wastes, or result in pollutants leaching into the ground water, must be carefully regulated if Stow is to preserve and protect its groundwater supply. In general, the quality of water from the surficial aquifer is naturally of high quality. However, high concentrations of iron and manganese have been widely reported in Stow, especially where wells have been located near wetlands. The high iron and manganese levels are highly variable in terms of site locality. Thus, in the event that testing of a well is occurring it is necessary to analyze well samples at different depths and within short distances in order to determine where groundwater quality is best. Alternatively, filtration methods or other technological means can be used to treat the water.

Water Resources Protection District

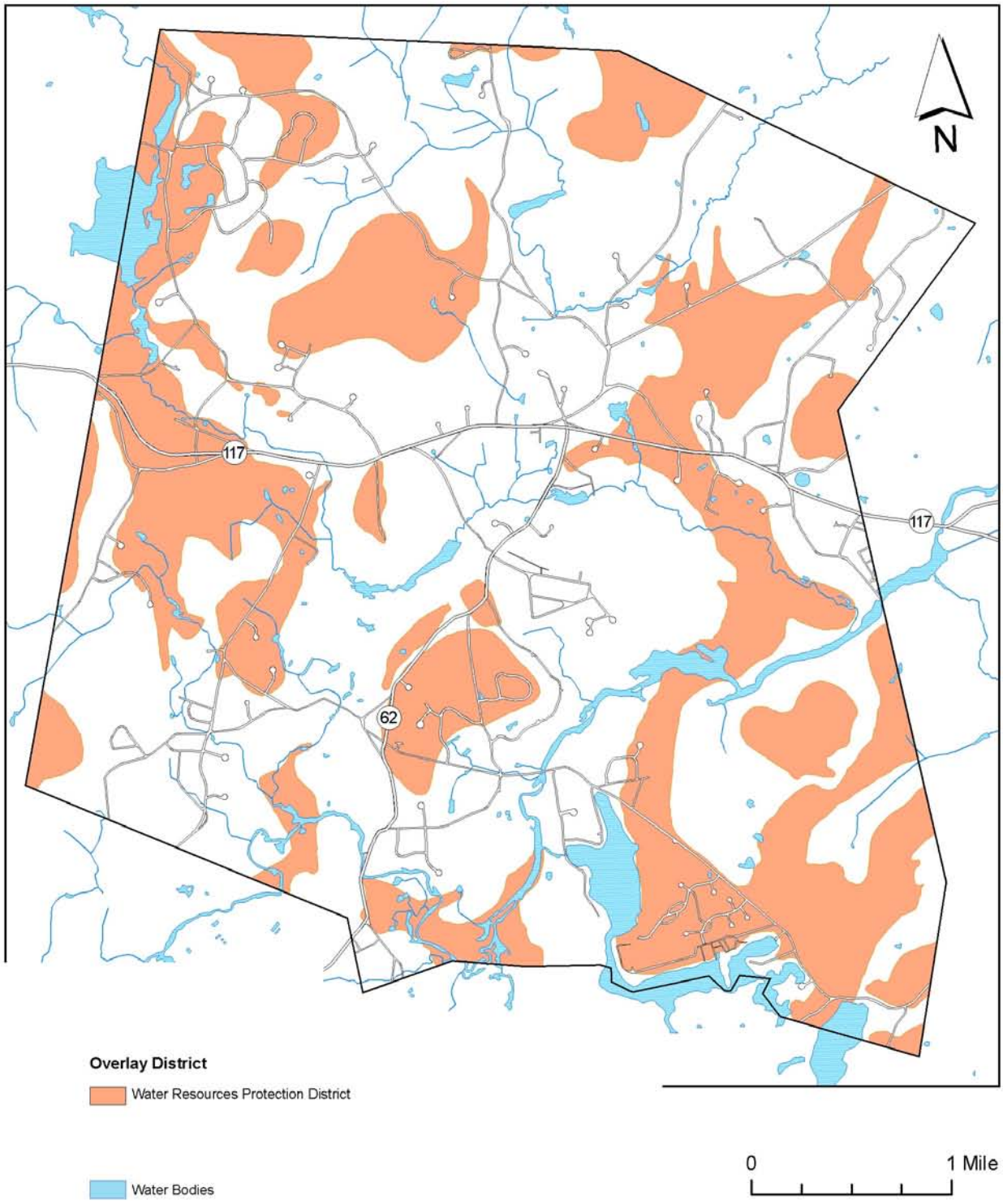
The surface hydrology or flow of surface waters is directly related to the groundwater systems in Stow and must be thought of as one complex hydrologic system. The streams, ponds and wetlands of Stow reflect the location of the water table that continues below the ground surface. Fluctuations in the surface water levels coincide directly with fluctuations in the water table and vice versa. During most of the year surface waters are fed and maintained predominantly by groundwater flow.

To aid in the protection of its water resources, Stow has established a zoning overlay district, the Water Resource Protection District, and the town has adopted protections within the Stow Zoning Bylaw that regulate the types and intensity of land uses within the overlay district. The Map on the next page shows the location of the Water Resource Protection District.

Flood hazard areas

Flooding may be defined as the occurrence of flow in a stream or river that exceeds the capacity of the banks formed by normal flows. All waterways have floodplains, those areas that flood during significant storms. An increasingly important factor related to flooding in Stow is the creation of impervious surfaces that limit infiltration and increase surface flow. Flood hazard areas in Stow are shown on the "Floodway - Flood Boundary and Floodway Map", done for the Town of Stow by the Federal Emergency Management Agency, Community-Panel Number 250216-0005 B, Effective Date: August 1, 1979, as modified November 1989. Stow has, through its Zoning Bylaw

Stow - Water Resources Protection District



(adopted October 23, 1968, recodified May, 1993) created a "Flood Plain/Wetland District" (Section 5.1), an overlay district to:"protect the public health and safety, persons, and property against the hazards of flood water inundation; to preserve and maintain the ground water table; to protect the community from the costs which may be incurred when unsuitable development occurs in swamps, marshes, along water courses, or in areas subject to flood; and to conserve natural conditions, wildlife and open spaces for the education, recreation and general welfare of the public."

The boundaries of the flood plain are given by Sect. 2.3.8 of the Zoning Bylaw:

> "Boundary lines outlining the flood plain of the Assabet River shall be the limits of the standard Project Flood Modified delineated on the plan entitled "Flood Plains and Profiles", Sheets 2,3 and 4 of the Assabet River Technical Report, Dept. of the Army, Corps of Engineers, dated June 1966 and on file with the Town Clerk. Boundary lines outlining the flood plain of Heath Hen Meadow Brook, Stow, Mass. by BSC Engineering, Inc. dated Feb. 21, 1975 and revised May 2, 1975, and on file with the Town Clerk. The Flood Plain/Wetland District shall also include all lands designated as Zone A, AO, AH or Zone A1-30 and A99 on the Town of Stow Flood Insurance Rate Map (FIRM), panel 250216-0005B dated Aug. 1, 1979 as amended November 1989."

Wetlands

The wetlands in Stow have generally been mapped, inventoried and evaluated by IEP in a study completed in 1977 and available at the Conservation Commission. The map on the next page depicts wetlands in Stow as mapped by the Fish and Wildlife Service's National Wetlands Inventory and the Massachusetts Department of Environmental Protection at the time of the study. Because many small wetlands are not shown, this map should not be viewed as a substitute for actual on-the-ground wetland delineation.

Stow has a local wetlands bylaw that is more stringent that the Massachusetts Wetlands Protection Act. The Conservation Commission administers the bylaw and is currently in process of updating its regulations to assist in administration with the bylaw.

4D. Vegetation

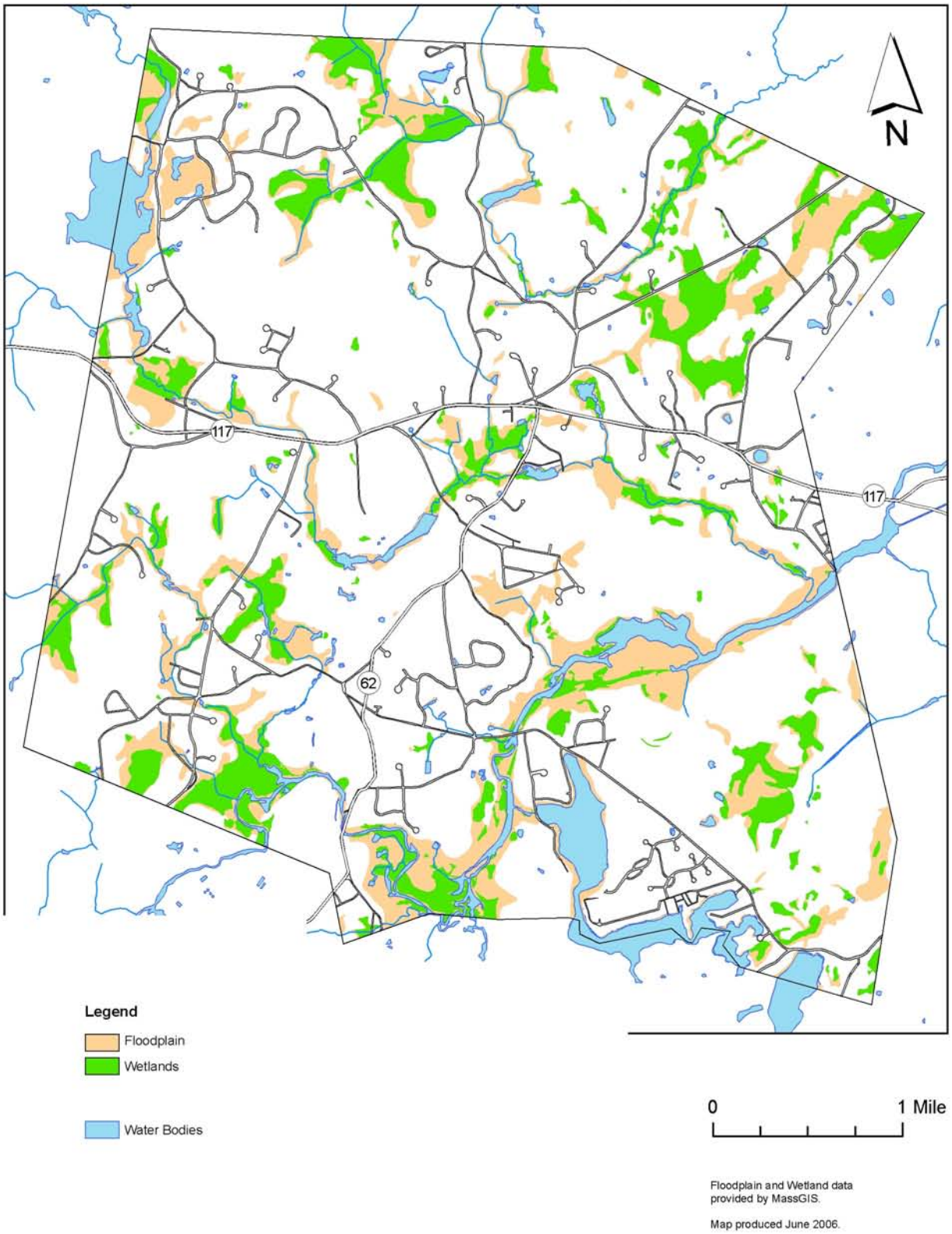
General inventory

There is a wide range of natural vegetative communities in Stow, including hardwood and pine forests, red maple swamps, cattail marshes, wet meadows and quaking (Sphagnum) bog-like wetlands know as fens. The Stow Acres Country Club golf course includes a cranberry bog in which pitcher plants and Jack-in-the-pulpits can be found. The Town Forest has two fens. In addition, topographic maps show cranberry bogs on the Assabet Refuge land in the southeast corner of Stow. Woodland wildflowers are common in some pine and oak forest areas. The Town contains several orchards, nurseries, greenhouses and farms. These non-residential, non-industrial land areas provide a wide variety of habitat for wildlife species as well as adding to the Town's aesthetic and economic resources.

Forest Land

The principal native forest trees in Stow are white pine, red oak, and mixed hardwoods in the upland areas along with hemlock groves and hickories; most wetlands are dominated by red maples. Birches are interspersed in the edge areas where more light is available and as an understory tree in some

Stow - Wetlands and Floodplains



younger forests. Understory vegetation consists of a variety of small trees and shrubs including, for example, evergreen shrubs, native dogwoods, viburnums, witch hazel and highbush blueberries.

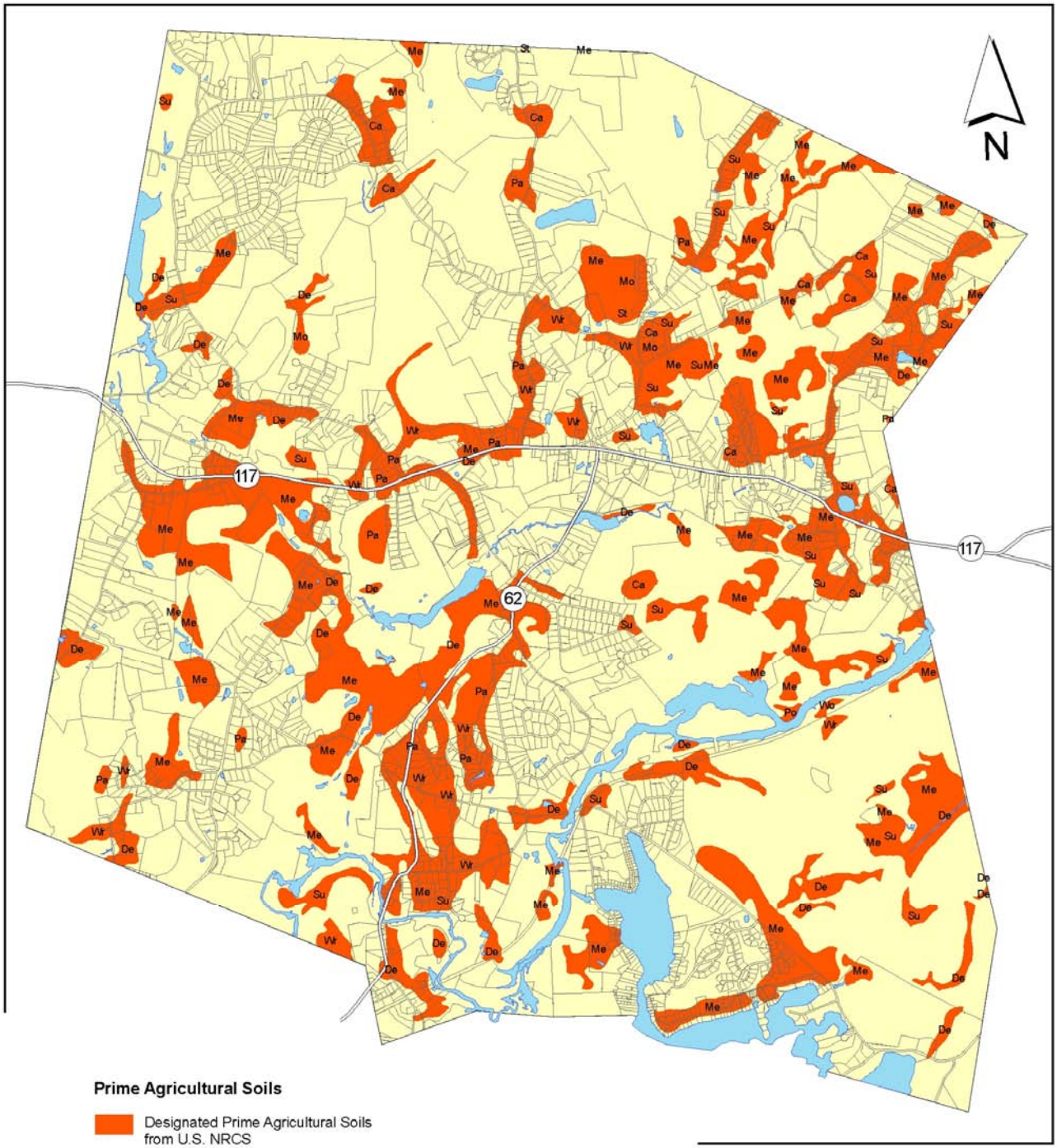
A number of mature groves of white pines are found especially in the conservation lands: Marble Hill, Gardner Hill, Capt. Sargent Farm, and the Town Beach area. Especially conspicuous is the grove of pines atop Pilot Grove Hill. In 1930 Clifford Martin set out a large number of red pine and European larch (off of Sudbury Road) that are now mature.

Since 1900 a variety of causes have served to limit the diversity of our woodlands. Chestnut blight eliminated the American Chestnut; American Elms have succumbed to Dutch Elm Disease; White Ash trees are now dying of Ash Decline. This lack of diversity could prove disastrous if new diseases appear; a good example was the massive damage done to oaks during the Gypsy Moth infestation of the early 1980s and in 1990-1991. Indeed we now face loss of hemlocks by the wooly adelgid. To address this problem the Town started a tree planting program with the acquisition of 100 seedling elm trees developed from resistant stock, and soon hopes to also include resistant American chestnuts.

Agricultural Land

Stow has a large number of parcels that are in agricultural use – ranging from large and highly visible agricultural properties including Pilot Grove Farm, Carver Hill, Shelburne Farm, Honey Pot Hill Orchards, Applefield Farm, and Small Farm, to smaller and less visible properties. These farms are important elements of the town's community character and play a key contributing role as scenic vistas both from public roads as well as the Assabet River, parcels linking existing conservation lands, and important lands for wildlife habitat. Taking direct action to preserve Stow's agricultural base is a priority of the Stow Conservation Trust which recently developed a brochure highlighting the many and varied farms and farm products available in Stow in an effort to encourage residents to support local agriculture. Protection of agriculture and agricultural lands is also a high priority in this Plan. The Appendix to this Plan contains a copy of an Executive Order designed to minimize development on prime farmland and to require mitigation for state funded or permitted projects on prime farmland. A map of prime farmland in Stow appears below.

Stow - Prime Agricultural Soils



0 1 Mile

Soils data from NRCS 2006.
Provided by MassGIS.

Map produced June 2006.

Rare species and Unique Natural Resources

The following is a list of rare plant and animal species – endangered (E), threatened (T), and special concern (SC) – that have been documented in Stow as reported by the Massachusetts Natural Heritage and Endangered Species Program. The date in the final column represents the most recent observation of a particular species. An asterisk (*) indicates that the species was most recently observed within the past 25 years. However, many rare species are difficult to detect even though they are present, and Natural Heritage does not conduct methodical species surveys in each town on a consistent basis. Therefore, the fact that the most recent observation of a species may be several years old should not lead to the interpretation that the species no longer occurs in a town.

STOW	*	Amphibian	Ambystoma laterale	Blue-Spotted Salamander	SC		1992
STOW	*	Reptile	Clemmys guttata	Spotted Turtle	SC		1999
STOW	*	Reptile	Terrapene carolina	Eastern Box Turtle	SC		1995
STOW		Bird	Accipiter striatus	Sharp-Shinned Hawk	SC	(PS)	1891
STOW	*	Bird	Ammodramus savannarum	Grasshopper Sparrow	T	(PS)	1994
STOW	*	Bird	Botaurus lentiginosus	American Bittern	E		1992
STOW	*	Bird	Gallinula chloropus	Common Moorhen	SC	(PS)	1992
STOW	*	Bird	Ixobrychus exilis	Least Bittern	E		1992
STOW	*	Vascular Plant	Carex oligosperma	Few-Fruited Sedge	E		1992
STOW	*	Vascular Plant	Liatris borealis	New England Blazing Star	SC		1992
STOW	*	Vascular Plant	Panicum philadelphicum	Philadelphia Panic-Grass	SC		1992
STOW	*	Vascular Plant	Spiranthes vernalis	Grass-LeavedLadies'-Tresses	T		1991

The locations of habitats of rare species have not been publicized in order to protect the species.

In addition to tracking rare species occurrences, the Massachusetts Natural Heritage and Endangered Species Program recently completed studies of both terrestrial and aquatic systems designed to identify those are most critical to the protection of biodiversity in Massachusetts – including rare species and priority habitats. These studies are called BioMap and Living Waters. While only small areas of Stow are identified in these reports, these are important areas to protect wherever possible.

There are three areas of BioMap Core Habitat, the more important terrestrial areas, in Stow. These are located 1) in the extreme northeast corner of town in a wetland system to the east of Red Acre Road at the confluence of the Acton, Maynard at Stow town lines; 2) in another wetland system just west of Harvard Rd along the Stow/Harvard line and 3) just south of Delaney Reservoir at the Stow/Harvard/Bolton line. These three areas include important marsh habitats that support one of the most diverse assemblages of freshwater wetland birds in Massachusetts including two different species of bittern, unprotected habitat for the Elderberry Longhorned Beetle, a species of special concern, and dry, sandy fields that are important for the threatened Grasshopper Sparrow. Areas of Supporting Natural Landscape – buffers and connections between these Core Habitat areas – have also been identified in Stow. These include 1) a large area in the vicinity of the Delaney Project connecting Core Areas #2 and #3 identified above, and extending across Harvard Road to include several large undeveloped parcels south of Harvard Acres and 2) a large area including portions of Maynard, Stow and Sudbury that incorporates portions of the Assabet Refuge, Sudbury State Forest and extends toward Lake Boon, including much of the area currently being developed as part of the Wildlife Woods subdivision.

While there are no Living Waters Core Habitat areas within the Town of Stow, there is a Core Habitat area located along the Assabet River in the town of Concord. The Supporting Watershed for this Core Habitat area extends upriver and includes a large area in Maynard and Stow. The Stow portion includes lands along the Assabet River within the Assabet Wildlife Refuge and extending to an area just south of Sudbury Road where it crosses the Assabet and also includes lands along Elizabeth Brook near the Town Forest.

In addition to these statewide mapping projects, the Sudbury Valley Trustees recently contracted with a botanist to analyze maps and conduct field work to identify areas of likely high wildlife habitat significance. These are shown on the Wildlife Habitat Map in this Plan.

4E. Fisheries and wildlife

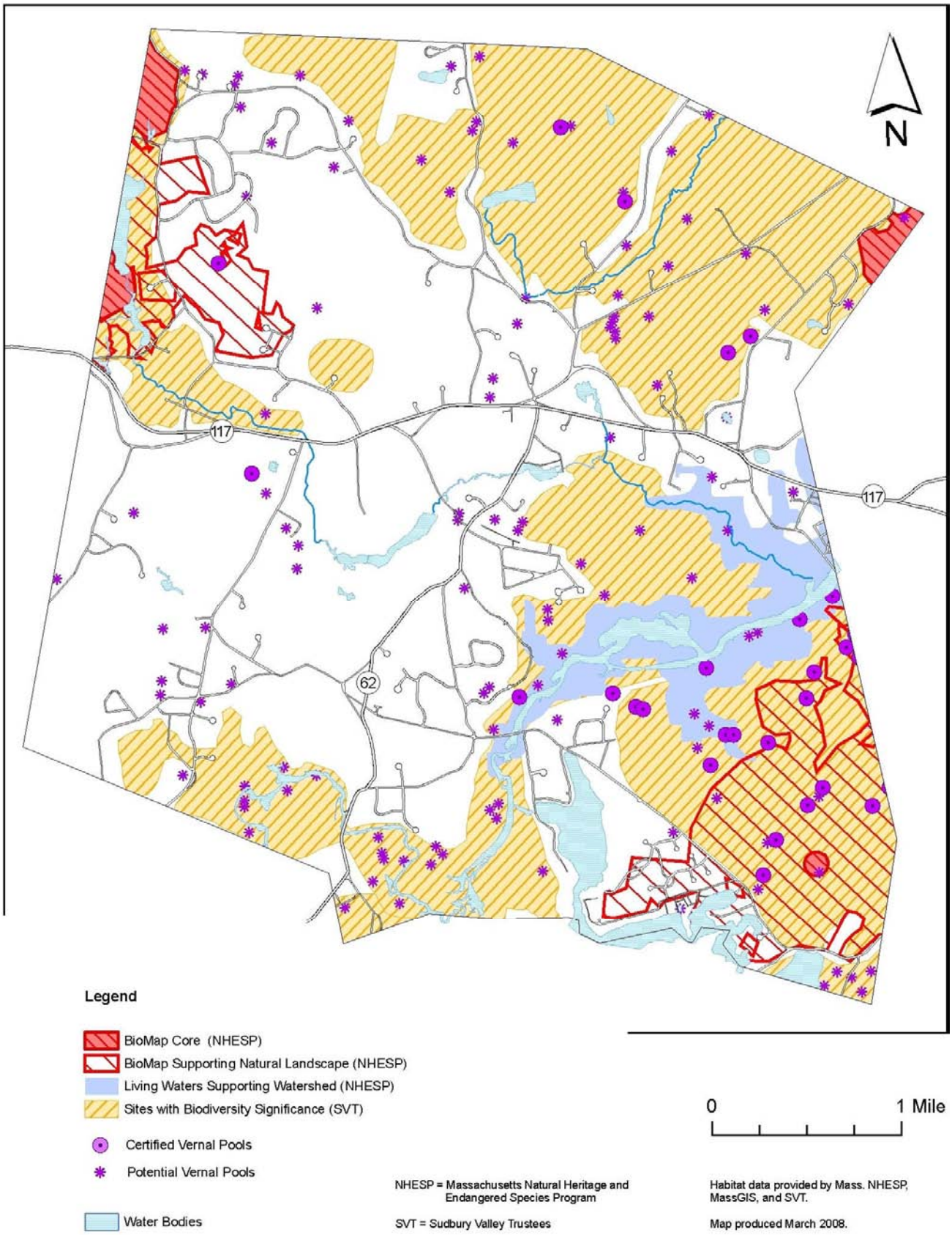
Inventory

Stow's diverse vegetative communities provide habitat for a wide variety of wildlife species. The transition zones between developed and undeveloped acreage or between wetland and upland provide particularly valuable 'edge' habitat suitable for many species because they combine the characteristics of both types of land.

There are now 4 major properties in Stow that are managed specifically to encourage wildlife: the Delaney Project (SUASCO Watershed flood control), the Assabet Wildlife Refuge (US Fish and Wildlife Service), and the Town-controlled Gardner Hill land and Flagg Hill lands. Many other properties in Stow, although not managed specifically to encourage wildlife, serve as links between many of these 4 main areas.

Stow is within the range of about 50 mammal species, 220 bird species, 20 reptile species, and 20 amphibian species. A list of these species is contained in the 1987 Stow Open Space and Recreation Plan. According to one local trapper, mink and otter have been trapped along the Assabet River at the Stow Acres Country Club golf course. He has also noted large snapping turtles, black ducks and wood ducks. Foxes, pheasant, and grouse are not uncommon in undeveloped areas. Beavers have been active since the mid 1980s at Fletcher's Pond, in Elizabeth Brook, also more recently in Hiley Brook and Heath Hen Meadow Brook. The Eastern Coyote are now common, and Moose have made regular appearances in Stow in the past few years. A moose (cow) has been seen at Lake Boon and along the Assabet River and is believed to over-winter in Stow.

Stow - Areas of Habitat Significance



Vernal Pools

There are a number of certified vernal pools in Stow and a large number of uncertified vernal pools. The Stow Wetlands Bylaw provides additional protection for vernal pools beyond what is contained in the Massachusetts Wetlands Protection Act. When development is proposed near a potential vernal pools, the Conservation Commission requires the applicant to research the area to determine whether it actually functions as a vernal pool. This process recently resulted in the certification of several vernal pools near the Villages at Stow site. The map on the next page depicts certified and potential vernal pools (as identified by aerial photography). Efforts should be undertaken to ensure that unprotected areas that function as vernal pools are certified to increase their protection. In particular, it is important to document, certify and protect clusters of vernal pools located within proximity to each other and large vernal pools as these provide the most viable habitat for species that depend on vernal pools for the breeding portion of their life cycle.

Wildlife Migration Corridors

Stow has extensive protected lands, totaling more than 2000 acres, that serve as important waterfowl migration corridors including, the US Fish and Wildlife Service's Assabet Wildlife Refuge, the Delaney Project, and the Assabet River. These areas provide large, rich relatively undisturbed locations for wildlife migration, feeding and breeding. The existence of other extensive wetland areas in Stow also provides feeding areas for migrating waterfowl.

4F. Scenic resources and Unique Environments

Scenic landscapes

Although there are many scenic spots in Stow the most dramatic include the following: Pilot Grove Hill and Farm, the McCassey/Perkins drumlin in Gleasondale, Honey Pot Hill Orchard, Shelburne Farm Orchard, and the Delaney Flood Control Project. The Assabet River and the Elizabeth Brook (sometimes known as Assabet Brook) are among the most scenic rivers and streams in the area.

Pilot Grove Hill and Farm is centrally located in Town, and thereby is a major contributor to the rural character of Stow. The farm is an active sheep farm with rolling hay fields and forested borders and fence rows, all of which are highly visible from public roadways. The farm is important in the history of the Town, and has been run by the same family for over 200 years. Pilot Grove Hill, despite the development of its slopes still offers a commanding view for passers-by.

Pilot Grove Farm from Pilot Grove Hill

The McCassey/Perkins drumlin offers a windswept open hill that juts out into the Assabet River forcing the river to bend sharply as it wends its way through Gleasondale. Although the view is partially obstructed by the homes along Route 62, it peeks out from behind the houses. If one stops to walk down to the river's edge or explores this area of the river by canoe, the drumlin makes a distinctive impression with its grazing livestock roaming its treeless but grassy slopes. This drumlin/esker feature is so significant that it is highlighted in the popular book "Roadside Geology of Massachusetts."

Honey Pot Hill Farm, an orchard located in the southern portion of Stow, is divided by Sudbury Road and Boon Road. The drive down either road is very scenic. During spring the fragrance of apple blossoms is quite noticeable. In fall, the sweet odor of ripe apples assaults the senses – and also attracts large numbers of visitors from Boston and surrounding areas for apple picking.

Shelburne Farm is adjacent to the Pilot Grove Farm near the center of town and has been permanently protected. This is a thriving orchard with rolling hills covered with apple trees that are prominently displayed to the public roadways. This orchard also attracts a clientele from a wide area.

Spindle Hill, a drumlin near the center of Stow, has been used for recreational purposes for many years. At one time there was a small ski tow on the hill. It presents an attractive view towards the north from Wheeler pond on the Elizabeth Brook. This unspoiled view, considered a valuable scenic resource, supports a cell tower located atop the hill – although efforts were made to minimize the visual impact of this structure through its design as a monopole.

One of the town's many scenic golf course views

The McDonald Farm is located on Route 62 near the Stow Acres golf course. The farm is operated part time and is under a 25-year conservation restriction. The pastures represent a significant portion of the visible open space along Route 62 in Stow.

The Delaney Project is a flood control area in the northwestern sector of Town. Because of its large area of water bordered by tall pines, some grassy ridges and fields, a large number of wildlife frequent the area. The open expanse of the area makes it a very attractive site for hiking, horseback riding, fishing and cycling. It is also widely used for dog walking as well as dog training classes. Portions of this area are also located in the adjacent towns of Bolton and Harvard.

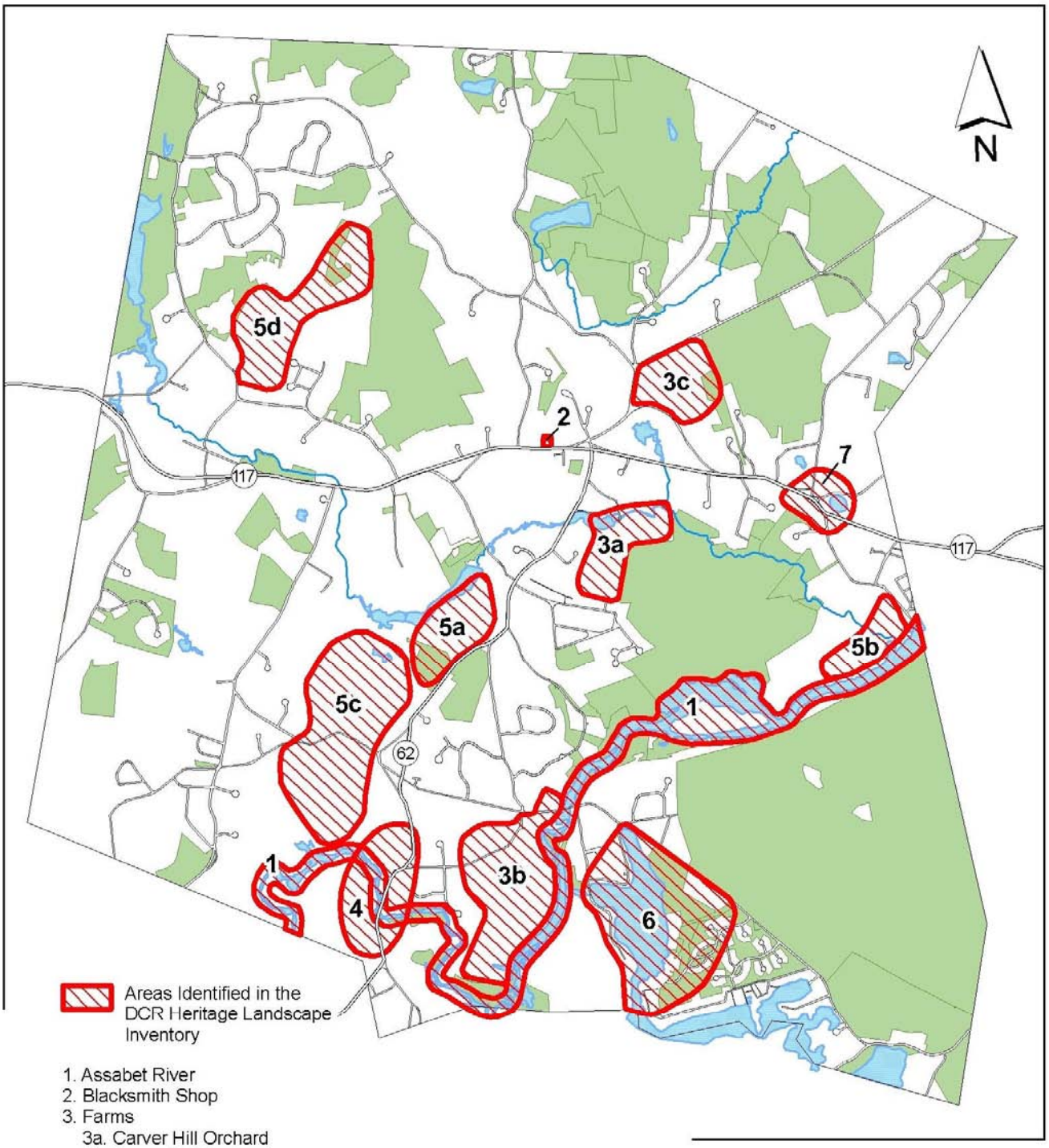
The Assabet River and Elizabeth Brook were working streams in the early history of the town, with mills located along both. Since the mills generally owned the banks of the rivers well upstream in order to be able to control the level of the water, the banks were not developed and so these two streams still retain large undeveloped stretches which enhance the attractiveness for river activities. Significant stretches of the river have almost no development visible from the banks and are extremely beautiful especially in fall. In winter the river has been known to freeze enough to allow

cross country skiers to pass from one sector of Town to the other. The Elizabeth Brook Association is a group that was formed initially to enjoy the brook's charms, but has developed into a group which also maintains the stream by annual spring cleanup expeditions. In an effort to enhance environmental awareness, a local teacher and the third grade have "adopted" the Elizabeth Brook as a project. The Organization for the Assabet River (OAR) is active in trying to clean up the river and enhance the natural beauty while also encouraging responsible recreational use.

Although the inventory section of this Plan identifies parcels that contribute to the scenic character of the Town, there is no formal scenic inventory that identifies those parcels – both large and small – that contribute to the rural character of Stow, as well as key cultural and historical landscape attributes such as stone walls, granite hitching posts and historic structures. Completion of such an inventory is identified as a priority in this plan so that important aspects of the town's character are not inadvertently lost to development. The Stow Historical Commission and others have worked with the Massachusetts Heritage Landscape Inventory to develop the "Stow Reconnaissance Report" for the Freedom's Way Landscape Inventory that identifies many of these important scenic attributes. A map of the areas identified can be found on the following page, with the full list in the Appendix.

Another initiative which should be considered by the town is the designation of scenic roads to prevent the loss of large trees and stone walls that contribute so significantly to the town's rural character. At this time, the town has no designated scenic roads, although many roadways are considered scenic by the community such as Whitman Road, Sudbury Road, Red Acre Road, and Walcott Street. This is also identified as a need in the action section of the Plan.

Stow - Unique Areas as Identified in the Heritage Landscape Inventory



1. Assabet River
2. Blacksmith Shop
3. Farms
   - 3a. Carver Hill Orchard
   - 3b. Honey Pot Orchard
   - 3c. Pilot Grove Farm
4. Gleasondale
5. Golf Courses
   - 5a. Butternut Farm Golf Course
   - 5b. Stowaway Golf Club
   - 5c. Stow Acres Country Club
   - 5d. Wedgewood Pines
6. Lake Boon & Cottage Neighborhood
7. Lower Village

Protected Open Space Lands

Water Bodies

0 — 1 Mile

Polygons based on the DCR Heritage Landscape Inventory (2006). Automated by The Trustees of Reservations. Base map features provided by MassGIS.

Map produced March 2008.

Cultural, Archeological and Historic Areas

Although there are a large number of historic sites and homes in Stow, only the most prominent are mentioned here. A more complete listing of historical sites and places has been complied by the Stow Historical Commission and is available to the public at Stow's Randall library. Pilot Grove Farm and Hill are again of central historic significance. The Stow West School is a restored one room school house on Harvard Road which is opened to the public during the summer. The Town recently funded a project to create a small parking area and other access enhancements at the West School site using Community Preservation funds. The Gleasondale Mill area has a number of structures dating back to its operation as a woolen mill. The Town Center has a number of old homes and structures (e.g. old Town Hall, blacksmith shop, First Parish Church etc.) which make the area both culturally and historically important to preserve.

Unique Environments

Stow currently has no designated Areas of Critical Environmental Concern (ACECs). Other areas with significant or unique resources include the Assabet River and Lake Boon, and the rare species and BioMap Core habitat areas described above. At present, there are no plans to seek ACEC designation for any of these areas.

4G. Environmental Challenges

Hazardous waste sites

Many of the hazardous waste sites in Stow as well as some broader hazardous waste problems noted in the 1997 Open Space Plan have been rectified. The specific sites included the Fort Devens Sudbury Annex, the Stow Shopping Plaza, and a contamination plume moving from GenRad in Bolton into a northwestern portion of Stow. The Fort Devens site has two classification areas:

- A1-A12 areas include demolition grounds, old waste dumps (general refuse, solvents etc.), buried contaminated test clothing (from Army Natick Labs), and a PCB spill area.

- P1-P56 areas include clothing burial sites, chemical, waste and drum storage, burn sites, rocket and pyrotechnic test sites; a number of the P areas are NOT contaminated but are listed as tested.

The Stow Shopping Plaza is designated as a cleanup site as is the old Gleasondale Mill area. Center School has been using bottled water for a few years because due to elevated levels of lead in the water. Studies have not been able to pinpoint the source. All of these specific sites are in the process of being analyzed and addressed in terms of clean-up. Recently, test wells have indicated that there is a plume of contamination moving from GenRad in Bolton into Stow. This site is presently under investigation.

More generalized hazardous waste problems include underground fuel tanks many of which have been replaced in the Town although it is not a requirement to do so. The Board of Health strongly recommends that such tanks be tested after 20 years. The fuel tank at the Pompositticut Elementary School was found to be leaking. Replacement of the tank has been completed, but the clean up process is continuing. Bioremediation has been chosen as the method to remove the oil on the site and adjacent properties.

There are three landfills in Stow: the old site on Harvard Road which was closed a couple of decades ago, Fletcher's dump on South Acton Road on the Acton line (closed and sealed in the early 1980s)

and the more recent site mostly located in Hudson off of Hudson Road at the Stow-Hudson line. Recent analysis of the test wells at the current site have indicated that there may be some leachate escaping the landfill. Several illegal dumps have been identified in some of the wooded areas in Stow that have vehicle access.

A complete list of the reported sites available from DEP as of the end of 2004 follows:

Release Tracking Number(RTN)	Release Address	Site Name/Location Aid	Notification Date	Chemical Type
0013899	11 ASSABET ST	JANE MACCLELLAN	07/11/2001	Oil
2-0000722	FT DEVENS	FORT DEVENS TRAINING ANNEX	01/15/1990	Oil
2-0000427	501 GLEASONDALE	FAHEY EXHIBITS BUILDING	01/15/1989	Oil and Hazardous Material
2-0000280	124 GREAT RD	MOBIL SERVICE STATION 01 JEJ	04/15/1988	Oil
2-0000364	147 GREAT RD	STOW SHOPPING CTR	02/17/1988	Hazardous Material
2-0000316	155 GREAT RD	DATACHECKER DTS	01/15/1988	
2-0010438	511 GREAT RD	POMPOSITTICUT ELEMENTARY SCHOOL	08/07/1994	Oil
2-0012504	626 GREAT RD	SERVICE STATION	11/18/1998	Oil
2-0014651	626 GREAT RD	COMMUNITY CONVENIENCE TRUST	01/31/2003	Hazardous Material
2-0012413	875 GREAT RD	ET AND L CONSTRUCTION	09/22/1998	
2-0010789	GREAT RD	AT INTERSECTION OF HUDSON RD	05/23/1995	Oil
2-0014665	26 HERITAGE LN	WASTE MGT INC ROADWAY RELEASE	02/10/2003	Oil
2-0013499	47 MARLBOROUGH	RESIDENCE	09/27/2000	Oil
2-0010012	150 NORTH SHORE DR	RESIDENCE	10/06/1993	Oil

2-0012639	PNE STOW	SMITH PROPERTY	02/02/1999	Oil
2-0013979	58 RANDALL RD	STOW ACRES CC	09/06/2001	Oil
2-0012145	STATE RD	NEAR SUDBURY RD	03/16/1998	Oil
2-0014565	10 WHEELER RD	WASTE MANAGEMENT INC	11/25/2002	Oil
2-0013854	45 WHITE POND RD	NEXTEL COMMUNICATIONS	05/17/2001	Oil
2-0014741	45 WHITE POND RD	ASTRO CRANE SERVICES INC	04/23/2003	Oil
2-0015271	45 WHITE POND RD	ASTRO CRANE SERVICES, INC	05/19/2004	Hazardous Material
2-0010279	77 WHITE POND RD	J MELONE & SONS INC	04/21/1994	Oil
2-0010347	77 WHITE POND RD	J MELONE & SONS INC	06/21/1994	Oil
2-0013851	15 WOODMAN PL	WETLAND BEHIND PROPERTY	05/14/2001	Oil
3-0014656	ACCESS RD	BOSTON SAND & GRAVEL	12/23/1996	Oil

Erosion, Sedimentation and Flooding

Lake Boon has several areas where steep banks are susceptible to erosion in heavy storm and from ice, and as a result of wash from power boats and inappropriate recreational use of the shoreline. Agricultural fields which are plowed regularly can be vulnerable to erosion, but there are few of these fields that are on significant slopes so this problem is minimal. The only other erosion which occurs in Stow is transient as a result of disturbance of the soils during development. Within 100 feet of wetlands, the Conservation Commission has been conscientious in requiring erosion mitigation and control measures.

Agricultural run-off from Stow's farms and orchards and from the golf courses in Stow is considered by some to be a possible source of ground and surface water pollution. However, a more likely source is the unregulated and uncontrolled application of fertilizer and pesticides to lawns and the incremental impact of nutrients from septic systems. A plume of organic chemical pollutants was identified at the Stow Shopping Center on Route 117, and another plume has been identified arising from GenRad in Bolton on Route 117. Groundwater problems have been identified at the closed dump on Hudson Road on the Stow/Hudson line.

Areas subject to chronic flooding include Heath Hen Meadow Brook, Elizabeth Brook (mostly due to the beaver dams), the Hiley Brook area, and portions of the Assabet River in Gleasondale just below the dam and at the Sudbury road crossing. Flooding also occurs regularly in a low wetlands area on Maple St. near the Hudson/Bolton Town line.

New Development

More recent development has caused minimal pollution in Stow because the Town has been relatively vigilant in upholding its health and conservation regulations and its zoning by-laws. However this development is gradually fragmenting Stow's forest lands and wildlife habitat, reducing opportunities to provide trail linkages between protected lands and affecting the town's rural and historic character. Particularly noticeable is the fact that new residential developments tends to consist of large homes that are intrusive on the landscape and out of character with much of the existing development in Stow, particularly when they require extensive grading and clearcutting. The Planning Board has worked diligently to revise and modify zoning bylaws and regulations to encourage low impact development and retention of a roadside buffer, and has succeeded in convincing applicants to revise plans to reduce required clearing and grading.

New Development on Harvard Road