TOWN OF GILL

OPEN SPACE AND RECREATION PLAN 2005

Prepared by the
GILL OPEN SPACE ADVISORY COMMITTEE

With the Assistance of the

FRANKLIN REGIONAL COUNCIL OF GOVERNMENTS
PLANNING DEPARTMENT

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SECTION 1

PLAN SUMMARY

The Gill Open Space and Recreation Plan (OSRP) coalesces the interest, effort, and motivation of community members towards the identification, prioritization, conservation and protection of Gill's landscapes and ecosystems in the face of new residential development. Its purpose is to provide a framework for decisions dealing with land use, which may impact ecosystems and the lands that contain unique agricultural, historical, recreational, and scenic values.

The 2005 Gill Open Space and Recreation Plan is based on the community members' collective understanding of the interdependence of contiguous forests, open upland ridge line views, streams and wetlands, agricultural fields, scenic views, and significant historical structures and landscapes with the town's rural character. The OSRP also illustrates the role that all undeveloped lands have in providing wildlife habitat, in ensuring the integrity of drinking water supplies, and at least in part, in providing for residents' livelihoods.

The Plan highlights the town's natural and recreational resources, including:

- Prime farmland and working agricultural businesses;
- Large blocks of contiguous forest;
- Abundant supplies of high-quality ground and surface waters;
- Wetlands; and
- Other scenic and historic landscapes.

The Five-Year Action Plan gives concrete substance to the goals and objectives, which were developed from the results of the 2000 Open Space and Recreation Planning Survey and from community members' understanding of their town's significant yet vulnerable natural resource base.

The 2005 Gill Open Space and Recreation Plan prioritizes actions that will:

- Establish a standing Open Space Advisory Committee.
- Determine the need for a part-time planner that could be shared with surrounding towns.
- Develop a list of criteria that if found on a parcel made available for conservation, would signify priority for action by the town.

- Develop a protocol for how the town would consider using its right-of-first-refusal regarding Chapter lands that are put up for sale for development.
- Using the list of criteria developed and the geographic information systems (GIS) maps in the Gill Open Space and Recreation Plan (2005), identify priority areas for conservation.
- At Town Meeting, vote to set aside funding each year for land conservation.
- At Town Meeting, vote to adopt a Right-to-Farm Bylaw.
- Encourage Northfield Mt. Hermon and Gill –Montague schools and residents to participate in an annual training program in vernal pool certification.
- Have the Recreation Committee report on the status and needs of recreational facilities and programs in town.
- Include Northeast Utilities, the Gill –Montague School District, the Nature Conservancy, and Northfield Mt. Hermon on the mailing lists for the meetings of the Open Space Advisory Committee and the Recreation Committee to maintain a mutually beneficial relationship between these entities and the town.
- Use the Gill Newsletter to promote a meeting on trails and trail development. If interest is strong, encourage a secondary meeting to establish a course of action.

SECTION 2

INTRODUCTION

A. STATEMENT OF PURPOSE

The purpose of this plan is to provide an accurate and thorough basis for decision-making involving the current and future open space and recreation needs of the residents of Gill. This Open Space and Recreation Plan represents consensus on the most important community and natural resource needs in town and on the best solutions for addressing them. The Five-Year Action plan, when carried out by the Open Space Advisory Committee and other town boards and commissions, will successfully implement the town's open space and recreation goals and objectives.

B. PLANNING PROCESS AND PUBLIC PARTICIPATION

In January of 2000, with the assistance of Mount Grace Land Conservation Trust, the Gill Conservation Commission enlisted the help of a team of graduate students from the Department of Landscape Architecture and Regional Planning at the University of Massachusetts (UMass) at Amherst. The Conservation Commission invited twelve Gill residents to sit on an Open Space Advisory Committee, which was comprised of local residents, community leaders, farmers, and business people, and included representatives from Northfield Mount Hermon School, Northeast Utilities, the Gill Historical Commission, The Nature Conservancy, and the Gill Planning Board. Additional assistance was received from the Town Secretary and the Town Assessor.

The Open Space Advisory Committee met initially with the UMass team and outlined a strategy for completion of the Plan. At that time, the UMass team determined which aspects of the Plan they would be able to complete and which elements would be left to the Committee. The first step was to develop an open space and recreation survey for the purpose of understanding the needs and concerns of Gill residents pertaining to open space and recreation. This survey was mailed to all households in the Town of Gill.

The UMass team, under the direction of the Advisory Committee, tabulated the survey results, identified existing conservation and recreation lands in Gill, completed an environmental inventory and analysis, interviewed area experts, and compiled additional information necessary for the Plan's completion. Using the information gathered, the UMass team developed a list of recommendations for the Committee to consider for completion of the Plan.

In 2004, the Franklin Regional Council of Governments (FRCOG) was awarded a grant from the Massachusetts Executive Office of Environmental Affairs to develop municipal Open Space and Recreation Plans(OSRP) for two towns in the Northern Reach of the Connecticut River in Massachusetts: Gill and Northfield.

Given the vast amount of work already developed by the University of Massachusetts planning team, and the recently completed Gill Community Development Plan, it was determined by members of the Open Space Advisory Committee (OSAC) that FRCOG would develop and present to the Committee a preliminary draft of an update to the 2000 OSRP for review.

Between July 2004 and January 2005, FRCOG staff worked to update Sections 1-7 of the 2000 OSRP using recent U.S. Census data and analyses presented in the EO418 Community Development Plan. In addition, FRCOG staff developed a preliminary set of goals and objectives and updated the geographic information systems (GIS) maps.

Between January and June 2005, the Open Space Advisory Committee, met three times to review the draft OSRP including the GIS maps, and to create the Five-Year Action Plan. The Gill OSAC presented their action plan at a public forum held on May 19, 2005. Community members provided feedback on the plan at the forum. The Gill OSRP was then submitted to the Select Board, Planning Board, Conservation Commission, Recreation Committee, Mount Grace Land Conservation Trust, and the Massachusetts Division of Conservation Services for review.

SECTION 3

COMMUNITY SETTING

The Town of Gill contains rural landscapes that have been established, developed, and formed by its human inhabitants over thousands of years. Planning for open space in Gill must consider the complex relationships between people and the open spaces and natural resources upon which they depend. If development occurs without consideration for natural resources, such as drinking water supplies, the quality of life for current and future generations of Gill residents could be diminished over time.

A. REGIONAL CONTEXT

The Town of Gill is located in western Massachusetts, in the northern part of the Pioneer Valley region, approximately five miles south of the Vermont state line. Gill is situated in close proximity to three major transportation routes: Interstate 91 is two miles to the west, Route 2 runs along the southern portion of town, and Route 10, which accesses I-91 and Route 63 in Bernardston and Northfield, respectively, is just north of the Gill town line.

A.1 Natural Resources Context

In order to plan for the protection of open space and natural resources in the Town of Gill, residents should consider the role natural resources play across the region. Two regional landscape-level natural resources important in both Gill and in surrounding communities are abundant and contiguous forestland and watersheds. The presence and relatedness of these significant resources present both opportunities and challenges to open space and recreation planning for Gill.

A.1.1 Large Blocks of Contiguous Forestland

Forests constitute one of the most important natural resources in the Town of Gill and in the region. Forestland conserves water supplies by sustaining the soil's ability to receive precipitation and recharge ground and surface waters slowly. Woodlands and their changing foliage give residents gorgeous surroundings upon which to gaze and appreciate. Forests clean the air and provide cool air currents in warm months.

Large blocks of contiguous forestland that are not traversed or fragmented by paved roads, wide rivers, development, or by open fields are important regional resources for several reasons. Wildlife species that require a certain amount of deep forest cover tend

to migrate out of fragmenting landscapes. New frontage lots and subdivisions can often result in a widening of human activity into habitats, an increase in the populations of plants and animals that thrive alongside humans (i.e. raccoons and squirrels) and a reduction in the species that have larger home ranges and unique habitat needs. Larger blocks of forest are more suitable for active forest management as well.

A.1.2 Watersheds

Watersheds are the areas of land that drain to a single point along a stream or river. Sub-watersheds contain first and second order stream tributaries. These are the most extensive component of any watershed. They are also the most sensitive to land use, both the negative impacts of runoff and the positive effects of forest cover. Two of the most important things that result from protecting forestland are maintaining the long-term integrity of wildlife habitats and water quality within the watershed's surface and ground waters. Gill is contained within the Connecticut River Watershed.

The Connecticut River Watershed is the largest river ecosystem in New England and spans four states, including Vermont, New Hampshire, Massachusetts, and Connecticut. The river itself forms Gill's eastern border. Fall River, which forms the town's western border, as well as a other brooks and streams flow through the town on their way to the Connecticut River. From its beginnings on the Canadian border to its end in Long Island Sound, the Connecticut River drains a landscape that is 11,000 square miles in size, 410 miles long. The river drops 2,400 feet from its source to the sea and is one of the most developed rivers in the Northeast. It enters Massachusetts through the Town of Northfield and flows through forty-five communities before entering the state of Connecticut. The watershed is eighty percent forested, twelve percent agricultural, three percent developed, and five percent wetlands and surface waters.

The Connecticut River Watershed was designated the "Silvio O. Conte National Fish and Wildlife Refuge" by an act of Congress in 1991, the first refuge of its kind, encompassing an entire watershed ecosystem. The Connecticut River also received special attention in 1998 when it became one of only fourteen rivers in the U.S. designated as a National Heritage River. The Massachusetts Executive Office of Environmental Affairs has outlined watershed priorities for the Connecticut River which include: promoting and/or creation of riparian buffer zones along the waterways within the watershed; reducing barriers to migratory fish passages; reducing the negative effects of non-point source pollution, primarily storm run-off; and increasing the amount of water quality data available within the watershed.

B. HISTORY OF THE COMMUNITY

The Town of Gill with its natural resources have attracted and sustained human settlements for thousands of years. Native Americans frequented the area to fish the

waters of the Connecticut River and other streams, and to farm the rich floodplain soils. European Colonists also reveled in the land's bounty. Industrialists harnessed its rivers for power, and today, nature lovers flock to the Connecticut River to relax and have fun.

Native American presence in the Town of Gill dates as far back as 5,500 B.C. Artifacts from that time period have been unearthed in Gill. The Barton Cove area of Gill was a prime spawning area for salmon, shad and other migratory fish; tribes from as far away as Eastern New York would travel to the area to fish. This same area of the Connecticut River was the site of a brutal massacre of Native Americans by the English in the King Phillip's War (1675-1677). Due to violent Indian resistance to European settlement as well as inter-tribal conflicts in the region, permanent Colonial settlements were not noted in Gill prior to c.a. 1776 (Sammartino; 1991).

Gill was originally part of Deerfield in the seventeenth century, then part of Greenfield until Gill's incorporation in 1793. Over time, three distinct village centers have developed in the town.

B.1 Gill Center

Main Road served as the main north-south connector between Turners Falls and Northfield. The Gill Meeting House was erected in 1794 establishing Gill's civic center along this main transportation route. The Congregational Church (1803), a Federal period home, the original Meeting House and also the Town Hall (1867), the Slate Library (1921), and Gill General Store still remain the focus of Gill's civic life.

B.2 The Village of Riverside

The Turners Falls Dam, originally constructed in 1798 as a stone-filled crib dam created power that fueled many industries in the Turners Falls section of the Town of Montague. As industrial land in Turners Falls became increasingly scarce in the mid-1800s, industry began to develop on the Gill side of the Connecticut River.

Though a few small textile manufacturers sprang up along the Fall River in the Factory Hollow area on the Greenfield town line, Gill's primary industry was lumber. Extensive sawmill complexes at Riverside converted timber that was floated down the Connecticut River from Vermont in giant log drives.

Residential development intensified in Riverside following the 1878 completion of a suspension bridge crossing the Connecticut River between Turners Falls and the Riverside section of Barton's Cove. In addition to spurring economic development, the bridge made Riverside a desirable residential area for wealthy mill owners from Turners Falls.

Today, due to industrial decline and major flooding in 1936, little of the Victorian architecture or industrial structures remain. Riverside is now a quiet residential neighborhood comprised mostly of homes built after World War II. Northeast Utilities owns and manages a riverfront buffer along Barton Cove, affording views of the river and lending a spacious feel to the village.

Because of nearly 150 years of development, periodic flooding and human alteration of the river, many of the Riverside area's cultural artifacts have been destroyed or made inaccessible. Just how much of these remain is unknown, warranting further study and more rigorous protection for this historically important area.

B.3 The Northfield Mount Hermon School

The Mount Hermon School for Boys, founded in 1881 is a private boarding and preparatory school. The development of the Northfield Mount Hermon (NMH) School greatly expanded the market for Gill's agricultural products. Currently named the Northfield Mount Hermon School, it is the largest landholder in Gill, owning approximately 640 acres of property primarily in the northeastern portion of town.

According to the website for the NMH School, in 2004, their board of directors initiated several studies focused on studying ways that the school could continue to provide a high level of service to future students given certain fiscal challenges. As a result of these deliberations, NMH will be concentrating the school's facilities completely on the Mount Hermon campus. The facilities in Gill will be expanded to serve the increased population of students on the one campus. The campus is home to many architecturally significant structures representing a wide range of period styles and it is the intent of the campus master planners to ensure that the development of new facilities will improve the value and utility of the campus consistent with the school's goals. The NMH School will likely become an even more significant economic presence in the community.

B.4 The Connecticut River

The Connecticut River played a prominent role in the history of the Town of Gill. Over time, the Connecticut River has provided not only food and power, but transportation for whomever lived along its banks. Since transporting goods by boat was more efficient than transporting over land, nearly all trade prior to the development of the railroad occurred on or along the Connecticut River. Furs, timber, ice and produce were just a few of the commodities transported via the river to and from the Town of Gill.

In the mid-eighteenth century, river crossings were important factors in the town's economic development and social life. Prior to the railroad, ferries were the primary means of crossing rivers. Gill had three major ferry crossings on the Connecticut River (starting from the south): Smith's, Stacey's and Munn's ferries. Smith's Ferry went out of operation with the installation of the Old Red Suspension Bridge. Munn's and

Stacey's Ferries went out of operation in the 1930s due to lack of demand. Though it is in close proximity to a private residence, the Munn's Ferry landing is still graded and useable depending on the water level. The Town of Gill owns a one-acre parcel at Stacey's Ferry, which has some potential for development as a primitive boat launch and recreation site.

Located in Riverside, "The Old Red Bridge" was one of the largest and longest suspension bridges in the country at the time it was constructed. Though it survived severe flooding in 1936, it was eventually dismantled for scrap metal during World War II. The stone abutments remain today and have been designated as a Massachusetts Historic Engineering Landmark. The abutments are geologically significant as well containing rare fossilized "mudballs". These form as aggregates of mud and stone are rolled by the current along a riverbed becoming armored by leaching minerals over time.

In addition to the Suspension Bridge, Gill has another spectacular, award-winning bridge at French King Gorge between Erving and Gill. The French King Bridge, completed in 1932, received the Annual Merit Award as "the most beautiful steel bridge" from the American Institute of Steel Construction. Recently restored, the bridge is listed on the State Register of Historic Places.

In 1913, a portion of Route 2 between Erving and the New York State Line was designated as the Mohawk Trail Scenic Auto Route, in honor of the Mohawk Indians that frequented the area's fishing grounds. As a result of the designation, commercial development began along the route to supply tourists with food, gas, lodging and not-so-authentic Indian souvenirs. Route 2 continues to be the primary commercial and industrial corridor in Gill.

Other significant historical resources located in Gill include the following:

- Riverside Archeological District (National Registered of Historic Places);
- Grist Mill Site;
- Methodist Church;
- Old Bridge Crossing;
- Center Cemetery;
- Ballard and Janes Mill Sites;
- Factory Hollow;
- Capt. Turner Monument;
- Riverside Cemetery; and
- Old Red Bridge Anchor.

C. POPULATION CHARACTERISTICS

C.1 Demographic Information

C.1.1 Population and Population Change

Demographics are useful for forecasting the need for open space and recreational resources that may be required by residents over time. According to data gathered by municipal officials in the Town of Gill, the town had a population of 1,620 in the year 2000. This is different from the total population figure of 1,363 that the US census reported as of April 1, 2000. Gill municipal officials believe the US Census figure is inaccurate due to miscalculation of staff and faculty housing on the Mount Hermon campus as well as to a shared zip code with Turners Falls. For the purpose of this Open Space and Recreation Plan, the population figure determined by the Town of Gill will be used.

Table 3-1: Total Population from 1970, 1980, 1990 and 2000

Geography	1970 Population	1980 Population	1990 Population	2000 Population
Gill	1,100	1,259	1,583	1,620
Franklin County	59,223	64,317	70,092	71,535
Massachusetts	5,689,377	5,737,037	6,016,425	6,349,097

Source: U.S. Census Bureau – 1970 Census, 1980 Census, 1990 Census STF3A, and 2000 Census SF3; Town of Gill Census 2000.

Table 3-2: Population Change from 1970 to 2000

Geography	1970-1980 Change	1980-1990 Change	1990-2000 Change	1970-2000 Change
Gill	14.5%	25.7%	2.3%	47.3%
Franklin County	8.6%	9.0%	2.1%	20.8%
Massachusetts	0.8%	4.9%	5.5%	11.6%

Source: U.S. Census Bureau – 1970 Census, 1980 Census, 1990 Census STF3A, and 2000 Census SF3; Town of Gill Census 2000.

The population change in Gill in recent decades has indicated consistent growth. From 1970 to 1980, the population in the Town of Gill grew over 14 percent (*see Table 3-2*), and grew significantly from 1980 to 1990 by another 26 percent. For Franklin County, the rate of population growth was fairly consistent from 1970 to 1980 and 1980 to 1990 with approximately a 9 percent growth rate for each of those time periods. However, the growth rate from 1990 to 2000 in Franklin County diminished to 2 percent. The Town of Gill's growth rate also diminished to 2 percent during the same period. In contrast to these trends, the state did not grow as much since 1970; however, the rate of growth continued to rise each decade.

According to the Franklin Regional Council of Governments 2000-2025 Population Projections, developed as part of the 2003 Regional Transportation Plan, the Town of Gill will experience an increase in population during the twenty-five year period, 2000-2025. FRCOG projects the town will gain 787 residents, which would be an increase of 57.7 percent. The county's population is expected to increase by 21.2 percent during the same time period.

If we assume Gill could experience a 57.7 percent increase in population by the year 2025, how would this translate into demand for open space and recreational resources? Would these additional residents be young, middle-aged, or elderly and, what would be the age distribution of the population in 2025? How could these changes in population impact demand for open space and recreational resources?

According to the U.S. Census 2000 General Demographic Characteristics from 1990 to 2000 the Town of Gill experienced a decrease in the proportion of the population under 9 years of age, while the proportion of young adults from 10 to 19 years of age increased. For the age group from 20 to 24 years old, there have been consistent decreases in the proportion of these individuals in relation to the total population. A considerable decrease in the distribution of people in the 25 to 44 year age group was noted, however there was a dramatic increase of 8.5 percent in the distribution of 45 to 64 year olds over the ten-year period 1990-2000. This increase in the older age cohort represents the aging of the "Baby Boom" generation. The 65 + age group represents a relatively small portion of the total population and has seen a slight increase.

If the relatively large cohort of older (45-64) working-aged residents were to continue to reside in Gill, it could result in a significant population of individuals in the older age cohort in ten to twenty years. Over the past decade, the 75 and older age group increased by 38 percent, double the rate for the county. How will the Town of Gill provide recreational facilities and services for all of its residents, especially the elderly, which may require accessible walking paths, arts, and leisure programs? Residents of all ages may need facilities and programs that provide safe spaces for recreating as well as access to open space.

Table 3-3: Age Distribution in 1990 and 2000

Geography	Total Population	% 9 Years & Under	% 10-19 Years	% 20-24 Years	% 25-44 Years	% 45-64 Years	% 65-74 Years	% 75 Years & Over
Gill								
1990	1,580	15.0%	12.7%	5.2%	33.9%	21.7%	6.6%	4.9%
2000	1,363	12.3%	14.5%	3.4%	26.8%	30.2%	5.9%	6.8%
Franklin County								
1990	70,092	14.5%	12.6%	6.4%	34.2%	17.7%	8.2%	6.3%
2000	71,535	11.5%	14.3%	5.4%	28.5%	25.9%	6.7%	7.5%
Massachusetts								
1990	6,016,425	13.1%	12.6%	8.4%	33.6%	18.6%	7.7%	5.9%
2000	6,349,097	13.0%	13.3%	6.4%	31.3%	22.4%	6.7%	6.8%

Source: U.S. Census Bureau – 1990 Census STF3A and 2000 Census SF3.
Note: Gill Town officials believe the U.S. Census Bureau's 2000 data understates the actual total population.

Identifying the best location for the development of new open space and recreation resources should consider where the concentration of population will occur and which parts of the local citizenry require specific needs. As will be seen in the fourth part of Section 3, Growth and Development Patterns, future growth depends in large part on zoning, slopes, soil and groundwater related constraints, and on which lands are protected

from development. Town officials could identify key parcels in town that might be future parks and walking trails that are close to the current distinct neighborhoods and/or areas that could be later developed for residential uses. Officials could be looking for opportunities to conserve land in Gill that protects valuable scenic and natural resources and provides public access to trail networks and open spaces.
Whatever the generational make up of the future community, recreation and open space needs may change over time. What would Gill's response be to these potential increasing and changing needs? How can these services and facilities be created in an inexpensive manner for both the town and the residents? The answers to these questions may depend in part on the current and potential economic well being of the Town of Gill and its residents.

C.1.2 Economic Wealth of Residents and Community

Measures of the income levels of Gill's residents as compared to the county and state are helpful in assessing the ability of the citizenry to pay for recreational resources and programs, and access to open space.

Table 3-4: Per Capita Income, Median Household Income, and Percentage Below Poverty Level in 1999 for Gill compared to Franklin County and the State

Geography	Per Capita Income in 1999	Median Household Income in 1999	Individuals Below Poverty Level*
Gill	$23,381	$50,750	4.4%
Franklin County	$20,672	$40,768	9.4%
Massachusetts	$25,952	$50,502	9.3%

* For whom poverty status was determined.
Source: U.S. Census Bureau – 2000 Census SF3
Please note that income data were reported for the previous year of when the Census survey was taken; in this case 1999.

Table 3-4 describes the earning power of residents in Gill as compared to the county and the state. The Gill per capita income reported for 1999 was $23,381, which was higher than the county figure of $20,672, and lower than the state figure of $25,952. The Gill per capita income was the tenth highest of the twenty-six towns of Franklin County. The median household income for Gill was $50,750 in 1999, which was much higher than the county ($40,768) and just over the state figure ($50,502). The Gill median household income in 1999 was the sixth highest of the twenty-six towns in Franklin County. Another way to describe a community's income and economy is the poverty rate. In Gill, 4.4 percent of residents for whom poverty status was determined (for Gill, this was the entire population), were living below the poverty level in 2000. Gill's poverty rate was significantly less than in the county (9.4 percent) and state (9.3 percent).

Although Gill's resources today are clearly both its people and its natural landscapes, the status of its finances could be affected by an interdependent relationship that exists between the two. The costs of the community services provided to residents are paid for with the tax revenues generated by different kinds of property, both developed and undeveloped. Some developed uses such as housing often require more services

including education and road maintenance. The costs associated with one household are rarely paid for by the revenues generated by that same property. One reason that towns encourage economic development is to have another type of property in town, other than residential, to share the tax burden. Protected open space on the other hand can cost towns very little in community services, provide a modest amount of tax revenues, and reduce the amount of housing that can ultimately occur in town. This relationship is explored in more detail in subsection D. Growth and Development Patterns.

C.2 Employment Statistics

Employment statistics like labor force, unemployment rates, numbers of employees, and place of employment are used to describe the local economy. Labor force figures can reflect the ability of a community to provide workers that could be employed by incoming or existing businesses. Unemployment rates can show how well residents are fairing in the larger economy while employment figures describe the number of employees in different types of businesses. Employment can be used as a measure of productivity. The number of people employed in each business can be used to determine the types of industries that should be encouraged in town. The town may decide to encourage business development to create more jobs and as a way of increasing taxable property values, which can help pay for municipal services and facilities, including recreational parks and programming as well as protected open space.

C.2.1 Labor Force: Gill residents that are able to work

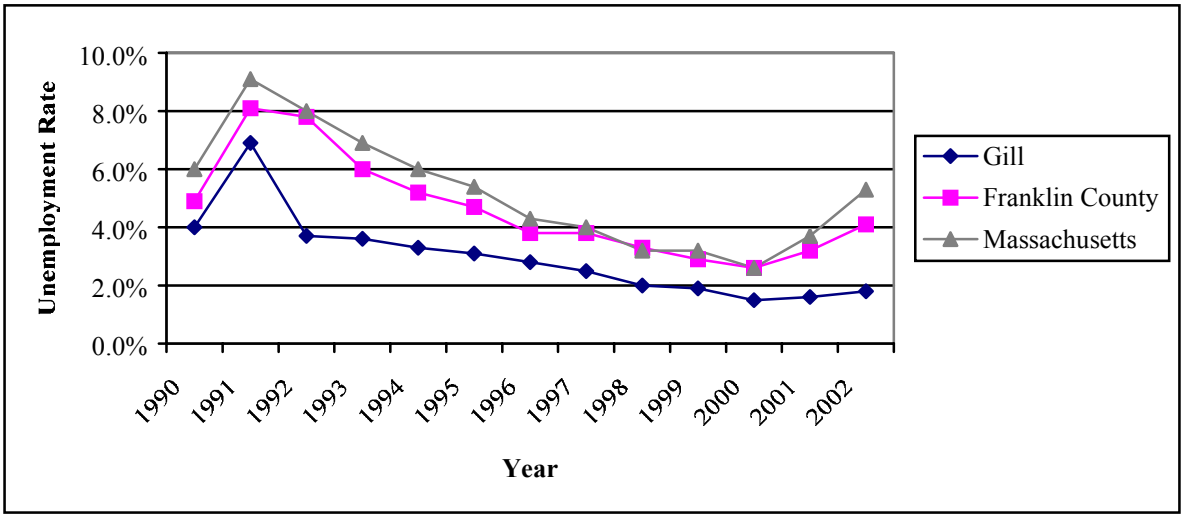
In 2002, the Town of Gill had a labor force of 1,012 with 994 residents employed and eighteen unemployed (Mass. Division of Employment and Training) (*see Table 3-5*). Gill experienced a 1.8 percent rate of unemployment, whereas Franklin County had a rate of 4.1 percent and the Commonwealth of Massachusetts had a rate of 5.3 percent. For the period 1990-2002, Gill had a consistently lower rate of unemployment than the county and state. This lower rate indicates that Gill had not been as severely impacted by the economic recessions and recoveries experienced over the past ten years as other areas have in terms of unemployment rates. However, it is also evident that Gill's labor force figures and the number of employed in town are influenced by the greater economy, as demonstrated by the highs and lows in Figure 3-1.

Table 3-5: Labor Force and Unemployment Data 2002

Geography	Labor Force	Employed Persons	Unemployed Persons	Unemployment Rate
Gill	1,012	994	18	1.8%
Franklin County	40,014	38,391	1,623	4.1%
Massachusetts	3,486,400	3,301,300	185,100	5.3%

Source: Massachusetts Division of Employment & Training, ES-202 data.

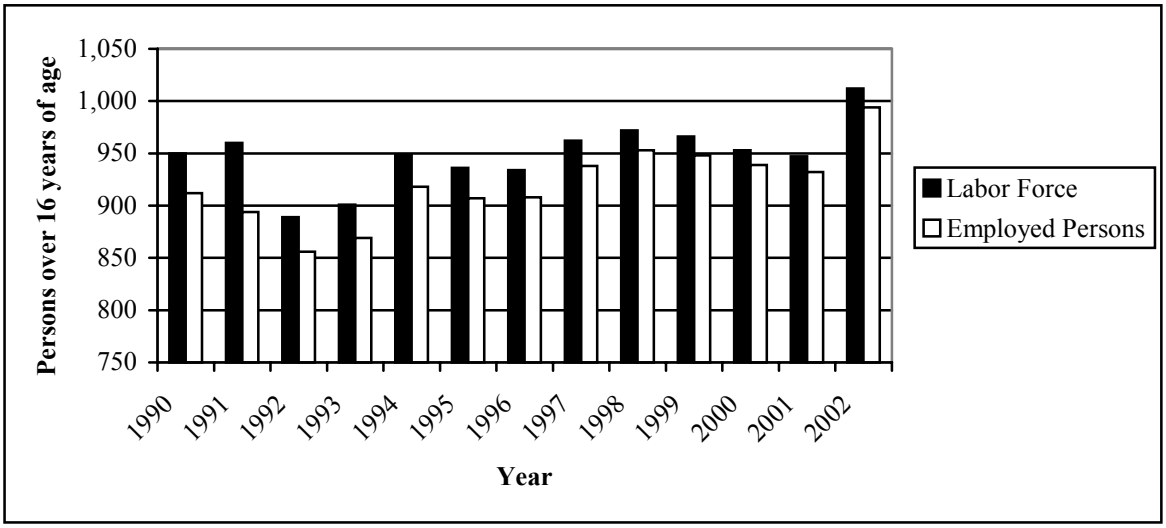
Figure 3-1: Unemployment Rates from 1990 to 2002



Source: Massachusetts Division of Employment & Training, ES-202 data.

As Figure 3-2 demonstrates, from 1990 to 2002, Gill experienced growth in the size of its labor force as well as the number of people employed within that labor force. In 2002, the size of the labor force and the number of people employed increased greatly. Increases in the labor force may be from increases in the resident population's participation in the labor force and/or overall population growth in a community.

Figure 3-2: Labor Force and Employed Persons in Gill



Source: Massachusetts Division of Employment & Training, ES-202 data.

C.2.2 Employment in Gill: People who work in town, whether they are residents or not

The largest sectors of employment for the Town of Gill are:

- Educational, Health and Social Services with 30.7 percent of all workers employed;

- Manufacturing with 15.9 percent of all workers employed; and
- Retail Trade with 10.2 percent of all workers employed.

The main difference between the makeup of businesses in Gill as compared to Franklin County and the State of Massachusetts is that the town has a smaller share of workers than the state and county in the Professional, Scientific, Management and Administrative Services sector and in the Financial, Insurance and Real Estate sector. This is not unexpected given that generally the percentage of employment in the professional services sector tends to be lower in small, rural towns.

The largest employer located within the Town of Gill is the Gill campus of the Northfield Mount Hermon School. Specific employment figures are not available because, although there is overlapping of staff between the Northfield and Gill campuses, the employment figures are reported for the Town of Northfield. The next largest employer is the town itself with the Gill Elementary School having twenty-three employees and the Town of Gill with six full-time employees. It is not uncommon in rural communities for the town government and school to be the major employers. Additional large employers located in Gill include Renaissance Community, Inc. with approximately twenty-five employees and the Kuzmeskus, Inc. bus company with a large number of part-time workers.

According to the 1990 and 2000 Census figures, the percentage of Gill residents who worked in town decreased from 16 percent to 13 percent, as did those who commuted to jobs in other towns in the county, from 73 percent to 66 percent. The greatest increase during the decade occurred with commuters traveling to jobs in other counties, from 8 percent to 17 percent.

Table 3-6: Worker* Commute Patterns in 1990 and 2000

Geography	Worked in Town of Residence	Worked out of Town but in County of Residence	Worked out of County but in State of Residence	Worked out of State of Residence
Gill				
1990	16.0%	73.2%	8.0%	2.8%
2000	13.3%	66.2%	16.8%	3.7%
Franklin County				
1990	35.8%	35.8%	24.9%	3.4%
2000	27.6%	34.9%	33.4%	4.1%
Massachusetts				
1990	36.5%	35.9%	24.5%	3.1%
2000	31.3%	35.4%	30.1%	3.3%

* Employed workers 16 years and over.
Source: U.S. Census Bureau – 1990 Census STF3A and 2000 Census SF3
Note: Gill Town officials believe the U.S. Census Bureau's 2000 data understates the actual total population.

D. GROWTH AND DEVELOPMENT PATTERNS

D.1 Patterns and Trends

Interspersed between Gill's three village centers are dairy farms and farms growing dairy-related crops in the Connecticut River floodplain, and rolling forested hills. Two-acre residential lots line the interior roads of Gill, especially along Main Road, West Gill Road and Mountain Road.

Commercial properties are located primarily along Route 2, and on Main Road close to where it intersects Route 2. This trend began in the early part of the 20th Century following the designation of Route 2 as the Mohawk Trail Scenic Auto Route.

D.2 Infrastructure

D.2.1 Transportation Systems

The major transportation routes in and around Gill are:

- Interstate 91, approximately 2 miles west of the town line;
- Route 2, which runs through the southern portion of town; and
- Route 10, which connects Route 63 and I-91, and crosses a portion of the northwestern corner of town.

Smaller arterials are evenly distributed throughout the interior of Gill.

There is no regular public transportation in Gill. In 1999, the Franklin Regional Transit Authority began offering the "G Link", a fixed bus route connecting Greenfield and Athol (with further connections to Gardner). The G Link makes several stops throughout the weekday in the Riverside area of Gill. Ridership has increased each year the service has been available. The Franklin Regional Transportation Authority (FRTA) provides demand-response transportation services for the elderly and people with disabilities in Gill.

D.2.2 Water Supply Systems

Except for those living on the Northfield Mount Hermon (NMH) School campus, or in the Riverside area, Gill residents rely on private wells for their water supply. NMH operates its own water supply system. The Riverside Water district, near Turners Falls and Greenfield, manages its own water system and purchases its water from the Town of Greenfield. Prior to 1976, the Riverside area got its water from a neighborhood spring that is now privately owned.

D.2.3 Wastewater Treatment

NMH and Riverside have their own wastewater treatment systems. After discovering that its 1962 sewage lagoon facilities were inadequate during storm events, NMH recently updated its system at a cost of $2 million.

Following a typhoid outbreak in 1957, the Riverside community began to pursue a municipal wastewater treatment facility. After years of debate and discussions over how to pay for it, the project was finally launched in 1976 and was operational by October of 1980. The Riverside district contracts with the Montague Wastewater Treatment Facility to treat its sewage.

D.3 Long-term Development Patterns

D.3.1 Land Use Controls

Gill's current zoning bylaws are straightforward. Only three zones are delineated: Residential/Agricultural, Residential, and Village Residential.

The majority of Gill is zoned Residential/Agricultural. The Residential zone is located for the first mile of Mountain Road beginning where it intersects Main Road. The Village Residential zone is located in the Riverside district.

The minimum lot size for single and two-family homes is 87,120 square feet, or just over two acres. Multi-family homes require a special permit. There is currently only one multi-family dwelling in Gill. The minimum frontage for single and two-family homes is 200 feet.

The town currently has no comprehensive plan or other growth limits in place. It does have Groundwater Protection bylaws as well as Subdivision Control Regulations.

While the subdivision control bylaws do require that developers make provisions for open space and parks, there are no specific performance standards. The subdivision bylaws allow for a less stringent approval process for development projects involving five or fewer dwellings. A plan in any form may be submitted as long as it is acceptable to the Registry of Deeds or Land Court. The only stipulations are that centerline road profiles, drainage, utilities and road construction must be explicitly shown. Projects with more than five dwellings must submit full engineering documents.

The zoning bylaws make no provision for, nor do they impose any limits on, commercial or industrial development. The bylaws also do not prevent the town's prime agricultural land from being developed for future residential use. Under the current bylaws, nearly 90 percent of Gill's land is vulnerable to residential development. To protect the resource that is so vital to Gill's sense of community character - its farm and forestland - the zoning and subdivision bylaws would merit a thorough review.

D.3.2 Build-out Analysis

To illustrate some of the long-term effects of current zoning, results of a build-out study are included here. This build-out study was completed in 2001 as part of a statewide effort funded by the Executive Office of Environmental Affairs. The methodology and results of the build-out study and associated GIS mapping are explained below. Of the entire 5,967 acres determined to be developable (of Gill's total 9,467 acres in land area), developable acreage was determined to be located in the following areas:

- 99% or 5,896 acres are in the Residential/Agricultural District;
- 1% or 73 acres are in the Residential District; and,
- 1 acre of developable land was estimated to be located in the Village Residential District.

The purpose of a build-out analysis is to determine potentially developable land areas for residential, commercial, and industrial development. The process, completed in 2001, started with identifying existing development based on 1997 MacConnell Land Use data and new subdivisions built since that time. Developed areas were subtracted from the town's total acreage and the remaining area is classified as undeveloped. Undeveloped areas were then screened for environmental constraints such as steep slopes in excess of 25 percent; wetland areas identified by the National Wetlands Inventory, Rivers Protection Act buffer areas and Zone I Recharge areas to public water supplies. In addition, protected open space was removed from consideration, but only those areas that were permanently protected, such as land owned by a state natural resources agency and farmland in the Agricultural Preservation Restriction Program. Some areas that many residents would expect to be protected, such as land owned by municipal water districts to protect public water supplies, were not considered to be off-limits to development unless a conservation restriction or some other legal mechanism was in place to permanently protect the land as open space. Slopes between fifteen and twenty-five percent were considered a partial constraint, since certain types of land use typically do not occur on relatively steep slopes. For purposes of this build-out analysis, it was assumed that slopes of fifteen and twenty-five percent would prevent commercial and industrial development and residential development on small lots. However, it was also assumed that large lot residential development could occur on slopes between fifteen and twenty-five percent given greater flexibility to grade and site structures. The areas that remained after the screening process are considered potentially developable.

Zoning districts were then overlain on the potentially developable areas and a "build factor" was calculated based on the requirements of each zoning district in terms of minimum lot size, frontage, setbacks, parking required and maximum lot coverage permitted. Once calculated, the build factor was used to convert potentially developable acreage into either house lots or commercial or industrial square footage depending on the zoning district. Once the number of house lots was calculated, it was then translated via averages into estimated population growth, miles of new roads and additional water consumption and solid waste generation (*see Table 3-7*). Commercial and industrial

square footage was similarly calculated and its associated demand for water was estimated.

Table 3-7 describes the results of the build-out in numerical terms. While it might take many decades to reach "build-out," it is quite clear that current zoning will not protect the community's rural character or natural resource base. Planning is needed to identify key resources to protect and the areas most suitable for development. Once completed, Open Space and Recreation Plan and Master Plans can be implemented by adopting zoning revisions and land protection programs to realize the balance desired by a community between the protection of natural and cultural resources and development.

Table 3-7: Summary Build-out Statistics of New Development and Associated Impacts

Potentially Developable Land (acres)	5,970
Total New Residential Lots	2,553
Total New Residential Units	7,769
Commercial/Industrial Buildable Floor Area (sq. ft.)	374,869
Residential Water Use (gallons per day) [2]	533,727
Commercial/Industrial. Water Use (gallons per day) [2]	28,115
Non-Recycled Solid Waste (tons/year) [3]	2,597
Total Population at Build-out	8,738
New Residents [4]	7,118
New Students [5]	1,202
New Residential Subdivision Roads (miles)	49

Notes:

1. All wetlands removed from potentially developable land
   No development on slopes in excess of 25%
   No development in Zone I Water Supply Protection Areas
   No development in permanently protected open space
   No development within 150-foot buffer of transmission lines
2. Estimate from the Department of Housing & Community Development's Growth Impact Handbook
3. Statewide Average
4. 1990 Census; Population/Housing Units
5. MISER; 1997 School Children/Population

Although it is not possible to determine exactly when build-out might occur, this may not even be necessary. Long before the last acre was developed in Gill, residents could experience drinking water shortages. In addition, with over 1,200 new school children at build-out many new elementary schools would be needed. New subdivisions could result in the need for 49 new miles of roads. Fire and police services would have to expand to protect the increased population.

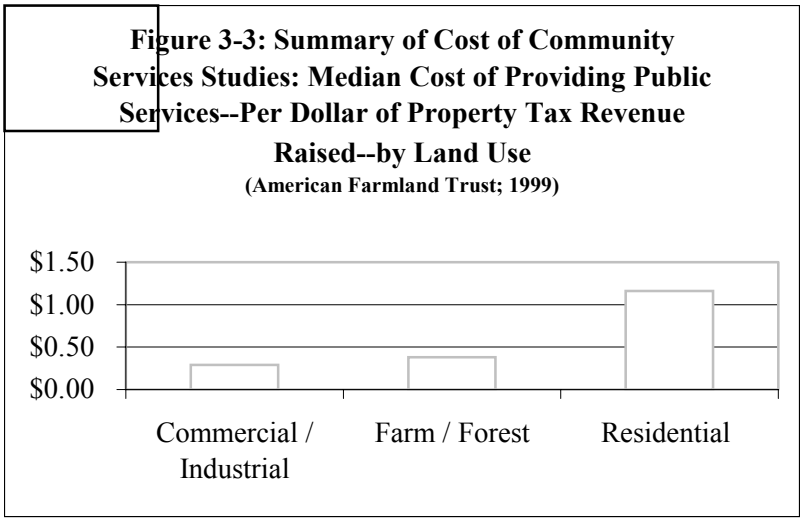
The economic impacts of this level of population growth and development would be felt well before maximum build-out was reached. Would the additional commercial and industrial property help to pay for the costs of supporting the increasing demand for municipal services like education as well as the loss of the local farms? The challenge for Gill and many small rural towns is to identify a model for growth that protects vital natural resource systems like aquifers while also promoting a stable property tax rate.

In designing the model it is important to understand the measurable fiscal impacts of different land uses. For instance, open space (e.g. farm and forestland), residential, and commercial/industrial development each contribute differently in the amount of property tax revenues generated and they often require different levels and types of municipal services.

Over the past fifteen years, the American Farmland Trust (AFT) and other organizations conducted Cost of Community Services (COCS) analyses for many towns across the country. A COCS analysis is a process by which the relationship of tax revenues to municipal costs is explored for a particular point in time. The results of these studies show that residential uses require more in services than they provide in tax revenues and that these communities, at the time of the study, were balancing their budgets with the tax revenues generated by other land uses like open space and commercial and industrial property.

Figure 3-3 demonstrates the summary findings of fifty-eight COCS studies from around the country. For every dollar of property tax revenues received from open space, the amount of money expended by the town to support farm/forestland was under fifty cents. Open space can therefore help to produce fiscal stability over time.

Figure 3-3: Summary of Cost of Community Services Studies: Median Cost of Providing Public Services--Per Dollar of Property Tax Revenue Raised--by Land Use
(American Farmland Trust; 1999)

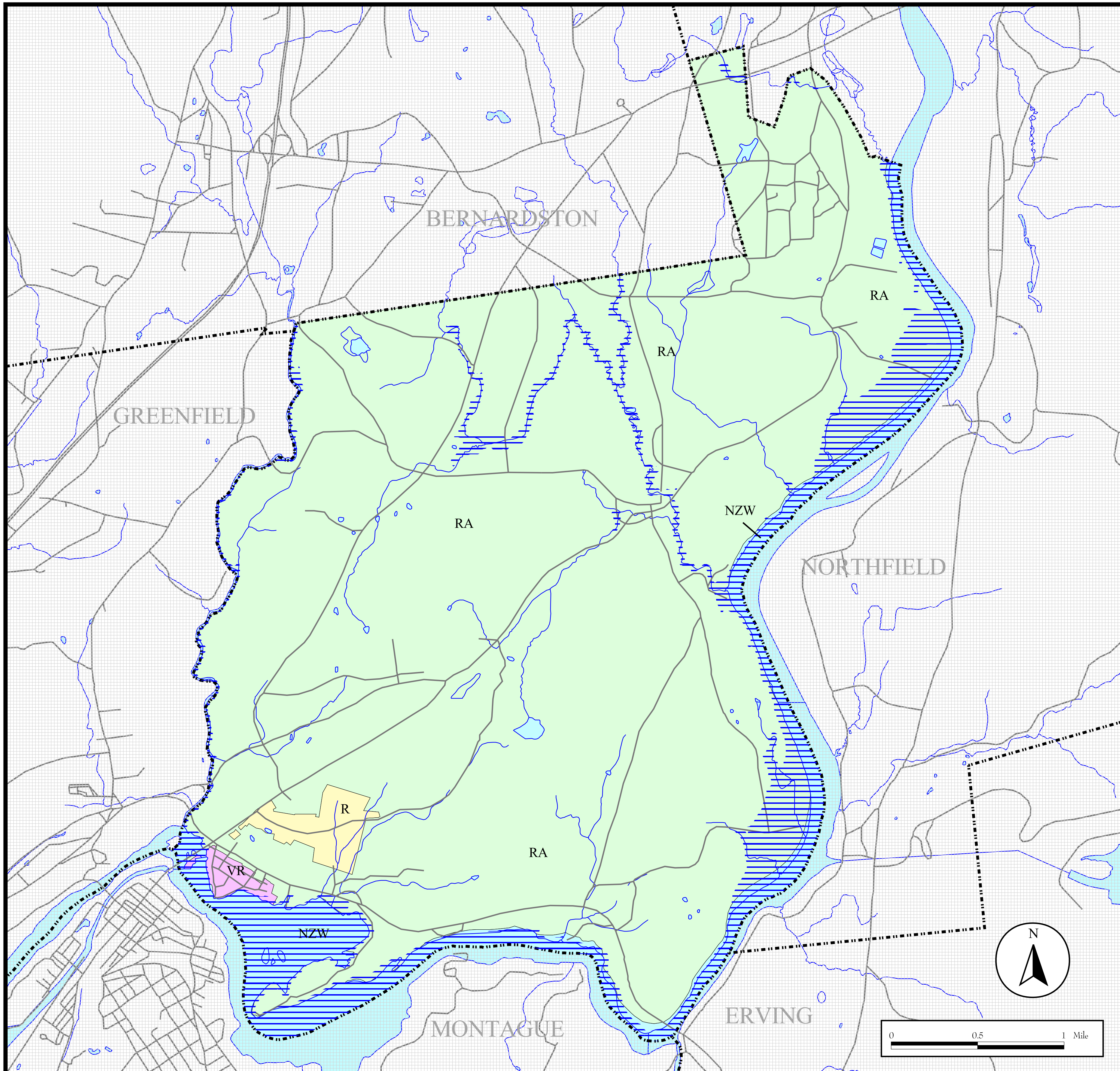


Source: American Farmland Trust; 1999.

The second component of a balanced land use plan concerns the development of other tax- generating land uses beyond open space. The COCS studies showed that for every dollar of taxes generated by commercial and industrial uses, the cost to towns for these uses resulted in a positive net gain. Patterns of commercial and industrial uses vary considerably between towns but all communities need consider the impact of commercial and industrial development on the overall quality of life for residents. The best types of commercial and industrial development to encourage in Gill might have some of the following characteristics: locally owned and operated; in the manufacturing sector; use of a large amount of taxable personal property; being a "green industry" that does not use or generate hazardous materials; businesses that add value to the region's agricultural and

forest products; and, businesses that employ local residents. It is also important to consider that successful commercial and industrial development often generates increased demand for housing, traffic congestion and some types of pollution. Therefore, the type, size, and location of industrial and commercial development require thorough research and planning. The EO418 Gill Community Development Plan, completed in June 2004, recommended further consideration of potential locations for future residential development in Gill Center and north of Rte. 2 and for a mixture of residential and commercial development in the Riverside area.

By continuing to pursue strategies that involve active land conservation, zoning measures that direct development while protecting natural resources and other important environmental values, and sustainable economic development, Gill will be able to sustain and enhance the community's agricultural and rural village character as well as help to maintain a high quality of life for residents despite changes in the state and national economies.



Town of Gill

Open Space and Recreation Plan

Current Zoning

Legend

- Town Line
- Roads
- Streams and rivers
- Water body
- Flood Plain Overlay District (100-year flood zone)

Zoning

- Residential (R)
- Residential - Agricultural (RA)
- Village Residential (VR)
- No zoning - water (NZW)

Map Sources:

Map produced by The Franklin Regional Council of Governments Planning Department. GIS data sources include the FRCOG Planning Department, the Massachusetts Highway Department and MassGIS. Digital data obtained from MassGIS represent the efforts of the Massachusetts Executive Office of Environmental Affairs and its agencies to record information from the sources cited in the associated documentation. EOEA maintains an ongoing program to record and correct errors in the GIS data that are brought to its attention. EOEA makes no claims as to the reliability of the GIS data or as to the implied validity of any uses of the GIS data. EOEA maintains records regarding all methods used to collect and process these digital data and will provide this information on request. Executive Office of Environmental Affairs, MassGIS EOEA Data Center, 251 Causeway Street, Suite 900, Boston, MA, 617-626-1000.

Road data provided by Massachusetts Highway Department. Town line, rail line, open space (Chapter 61 and Protected Open Space), National Wetlands Inventory, river, stream, and pond data provided by MassGIS.

Note: Depicted boundaries are a approximate and are intended for planning purposes only. Portions of the source data were obtained from 1:100,000 scale maps, therefore the accuracy of the line work on this map is +/- 100 feet.

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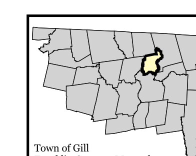
Greenfield, Massachusetts 01301

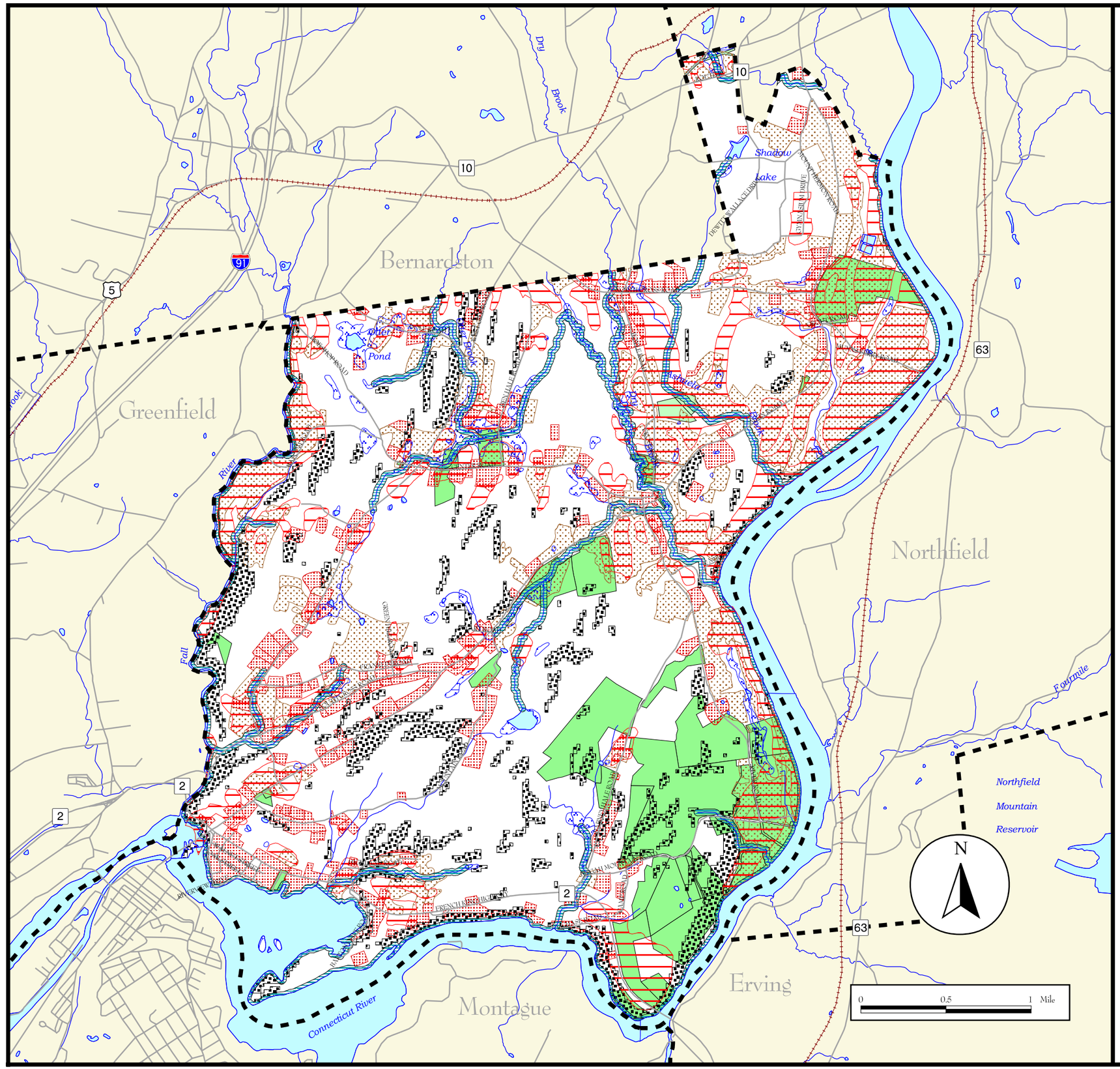


January 24, 2005

Town of Gill

Open Space and Recreation Plan

Prime Farmland and Development Constraints



Legend

- Town Line
- Rail Lines
- Roads
- Streams and Rivers
- Water body
- National Wetland Inventory wetland
- Slope greater than 25%
- Prime Farmland Soils

Open Space

- Open Space with Permanent Protection
- Open Space with Limited Protection

Land Use

- Crop land
- Residential

River Protection Act

- 0-100 feet from river bank

Map Sources:

Map produced by The Franklin Regional Council of Governments Planning Department. GIS data sources include the FRCOG Planning Department, the Massachusetts Highway Department and MassGIS. Digital data obtained from MassGIS represent the efforts of the Massachusetts Executive Office of Environmental Affairs and its agencies to record information from the sources cited in the associated documentation. EOEA maintains an ongoing program to record and correct errors in the GIS data that are brought to its attention. EOEA makes no claims as to the reliability of the GIS data or as to the implied validity of any uses of the GIS data. EOEA maintains records regarding all methods used to collect and process these digital data and will provide this information on request. Executive Office of Environmental Affairs, MassGIS EOEA Data Center, 251 Causeway Street, Suite 900, Boston, MA, 617-626-1000.

Farmland soils digitized from "Important Farmlands of Franklin County" map (U.S. Soil Conservation Service, 1979) by FRCOG Planning Department staff. Road data provided by Massachusetts Highway Department. Town line, rail line, slope, land use, open space, River Protection Act, National Wetlands Inventory, river, stream, and pond data provided by MassGIS.

Note: Depicted boundaries are a approximate and are intended for planning purposes only. Portions of the source data were obtained from 1:100,000 scale maps, therefore the accuracy of the line work on this map is +/- 100 feet.

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Town of Gill
Franklin County, Massachusetts

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January 24, 2005

SECTION 4

ENVIRONMENTAL INVENTORY AND ANALYSIS

The natural resources and scenic landscapes of the Town of Gill have been cherished by residents for generations. This Open Space and Recreation Plan is intended to help residents protect the town's scenic value and natural resources in the face of increasing development pressure, while recognizing that people need places to live, learn, work and play. These needs require infrastructure: homes, roads, power, water, wastewater systems, etc. These collective needs, in turn, both depend upon and impact critical natural systems like the water cycle. One way to understand the impact of development on natural resources is to study ecosystems of the town and the region.

An ecosystem is a concept that describes how living organisms (plants, animals and microorganisms) interact with each other and their physical environment (soil, climate, water, air, light, etc.). Ecosystems exist at different scales. A large forest can be an ecosystem and so can a decayed tree trunk. The integrity of ecosystems depends on the interdependent relationship between living beings and their environment. Wetlands, for example, are ecosystems consisting of plants and animals that depend on water from the surface and the ground. Wetland vegetation grows where soils are saturated by water for at least several weeks a year. This vegetation provides shade, food, and habitat for a wide variety of insects, birds, and fish.

Ecosystems provide a variety of "services" that are very important to human communities. Wetlands, for example, trap and remove sediments, nutrients and toxic substances from surface water. They store floodwaters during and after storms, preventing damage to public and private property, recharge water to groundwater aquifers, and retain it during droughts. These functions are vulnerable to the impacts of land development. Construction in and around wetlands not only displaces the animals that depend on this ecosystem, it may also result in increased flooding, storm damage, and reduction in the quality and quantity of drinking water. Gill residents need to understand the impact of their actions and land uses on the environment and on their quality of life.

The information provided in this section explores the biological and physical components of the town's ecosystems. These components include soils, surface and ground water, vegetation, fisheries and wildlife. *Topography, Geology, and Soils* provides a general understanding of the ways different soil characteristics can impact land use values. *Landscape Character* provides an overall scenic context. *Water Resources* describes all of the water bodies in town, above and below ground, including their recreational value,

public access, and any current or potential quality or quantity issues. In the subsection *Vegetation*, Gill's forest, farmland, and wetlands are documented and in *Fisheries and Wildlife*, wildlife, habitat, special corridors, and rare, threatened, and endangered species are discussed. Gill's *Scenic Resources and Unique Environments* are identified. Finally, *Environmental Problems* addresses current and potential problems that may influence open space or recreation planning.

A. TOPOGRAPHY, GEOLOGY, AND SOILS

Decisions relating to open space and recreation planning should take into consideration the inherent suitability of a site for different uses. Geology, soils, and topography are essential in determining potential sites for future residential, commercial, and industrial development and for new parks, hiking trails, and open space.

A.1 Topography

The Town of Gill's topography is a result of glacial deposition and river erosion. Gill's terrain varies greatly in slope from level floodplains to steep river valley terraces. Elevations in Gill range from 150 feet at the junction of the Fall and Connecticut Rivers to 816 feet at the top of Pisgah Mountain. Unsorted glacial deposits of soil and rocks, or drumlins, are present throughout Gill's landscape. A fault line, inactive for more than 140 million years, is located along the French King Gorge at the border of Gill and Erving. Significant geologic features include the plunge pools at Barton Cove and the falls at the Turners Falls Dam.

A.2 Geology

The Town of Gill as we know it today is the result of millions of years of geologic history: great upheavals of the earth's crust and volcanics, and the sculpting power of moving water, ice and wind. This distinctive physical base has determined the distribution of the town's water bodies, its soils and vegetation and its settlement patterns, both prior to and since colonial times. Understanding Gill's current landscape requires a brief journey back in time and a review of some basic geological concepts.

The earth's crust is a system of plates whose movements and collisions shape the surface. As the plates collide, the earth's crust is compressed and forced upward to form great mountain ranges. In the northeastern United States, the plates move in an east-west direction, thus the mountains formed by their collisions run north to south.

The pressure of mountain building folded the earth, created faults, and produced the layers of metamorphosed rock typically found in New England. Collision stress also

melted large areas of rock, which cooled and hardened into the granites that are found in some of the hill towns in Massachusetts today. Preceding the collisions, lines of volcanoes sometimes formed, and Franklin County shows evidence of this in bands of dark rock schist metamorphosed from lava flows and volcanic ash.

Hundreds of millions of years ago, a great continent, known as Pangaea, formed through the collisions of plates. Pangaea began to break apart almost 200 million years ago, and continues to do so as the continents drift away from each other today. This "continental drift" caused earthquakes and formed large rift valleys, the largest of which became the Atlantic Ocean. The Connecticut Valley was one of many smaller rifts to develop. Streams flowing into the river from higher areas brought alluvium, including gravels, sand and silt. At the time, the area that is now the Town of Gill was located south of the equator. The Dinosaur era had begun, and the footprints of these giant reptiles are still visible in the rock formed from sediments deposited on the valley floor millions of years ago.

By the close of the Dinosaur age, the entire eastern United States, including Gill, was part of a large featureless plain, known as the peneplain. It had been leveled through erosion, with the exception of a few higher, resistant areas. Today, these granite mountaintops, called monadnocks, are still the high points in this region. Local examples include Mt. Wachusett, Mt. Greylock, and Mt. Monadnock in New Hampshire.

As the peneplain eroded, the less resistant rock eroded to form low-lying areas, while bands of schist remained to form upland ridges. By this time, the Connecticut Valley had been filled with sediment, while streams that would become the Deerfield, Westfield, and Farmington Rivers continued to meander eastward. The westward-flowing streams would become more significant later on.

A long period of relative quiet in geologic terms followed the Dinosaur era. Then, as the Rocky Mountains were forming in the west eight million years ago, the eastern peneplain shifted upward a thousand feet. As a result of the new, steeper topography, stream flow accelerated, carving deep valleys into the plain. Today, the visible remnants of the peneplain are the area's schist-bearing hilltops, all at about the same 1,000-foot elevation.

Mountain building, flowing water, and wind had roughly shaped the land; now the great glacial advances would shape the remaining peneplain into its current topography. Approximately two million years ago, accumulated snow and ice in glaciers to the far north began advancing under their own weight. A series of glaciations or "ice ages" followed, eroding mountains and displacing huge amounts of rock and sediment. The final advance, known as the Wisconsin Glacial Period, completely covered New England before it began to recede about 13,000 years ago. This last glacier scoured and polished the land into its final form, leaving layers of debris and landforms that are still distinguishable.

The glacier picked up, mixed, disintegrated, transported and deposited material in its retreat. Material deposited by the ice is known as *glacial till*. Material transported by water, separated by size and deposited in layers is called *stratified drift* (Natural Resource Inventory for Franklin County, University of Massachusetts Cooperative Extension, May 1976). The glacier left gravel and sand deposits in the lowlands and along stream terraces. Where deposits were left along hillsides, they formed kame terraces and eskers. Kames are short hills, ridges, or mounds of stratified drift, and eskers are long narrow ridges or mounds of sand, gravel, and boulders.

During the end of the last ice age, a great inland lake formed in the Connecticut River Valley. Fed by streams melting from the receding glacier, Lake Hitchcock covered an area approximately 150 miles long and twelve miles wide, stretching from St. Johnsbury, Vermont to Rocky Hill, Connecticut. Streams deposited sand and gravel in deltas as they entered the lake, while smaller silts and clays were carried into deeper waters.

Four forms of bedrock can be found in the Town of Gill: Turners Falls Sandstone, Mount Toby Conglomerate, Sugarloaf Arkose and Deerfield Basalt.

A.3 Soils

Soil is the layer of minerals and organic material that covers the rock of the earth's crust. All soils have characteristics that make them more or less appropriate for different land uses. Scientists classify soils by these characteristics, including topography; physical properties including soil structure, particle size, stoniness and depth of bedrock; drainage or permeability to water, depth to the water table and susceptibility to flooding; behavior or engineering properties, and biological characteristics such as presence of organic matter and fertility (Natural Resource Inventory for Franklin County, University of Massachusetts Cooperative Extension; May 1976). Soils are classified and grouped into associations that are commonly found together.

The majority of Gill's soils fall into two major soil groups: Hollis-Charlton (approximately 45 percent) and Hinckley-Windsor-Merrimac (approximately 40 percent).

The Hollis-Charlton group is typically well drained, varies in soil depth and can be characterized by both rolling and steep wooded hills. Ledges and rock outcroppings are also common to this group. Many of the soil types have prime farmland capabilities. Those areas with a prime farmland classification are good candidates for land conservation and use restrictions.

The Hinckley-Windsor-Merrimac group also has prime farmland capabilities. It is characterized by deep well-drained soils consisting of glaciofluvial deposits of sand, gravel and cobbles.

Additional soil types in Gill are those in the Hadley-Winooski-Limerick group and the Hartland-Ninigret group. These soil groups are typically deep and moderately to well drained, occurring at floodplains or in areas of transition from river bottom to upland terrain respectively.

All of the above soil groups also have types that are classified by the National Fish and Wildlife Service as "hydric," or those soils occurring in or near a wetland. Hydric soils are good indicators for wetland delineation. The identification of hydric soils can aid in the preservation and remediation of freshwater wetlands as mandated by the Wetlands Protection Act.

B. LANDSCAPE CHARACTER

The landscape character of Gill is one of rolling hills, river terraces and upland forests. Distinguishing Gill from other towns in the area are its woodland brooks and streams, the Connecticut and Fall Rivers that form its eastern, southern, and western borders, and Barton Cove in the southwestern corner of town. In addition, the majority of Gill is still either forest or rolling pasture, and it boasts a number of distinctive archaeological and geologic sites of interest. Gill also has a number of wooded wetland areas, which contribute greatly to the overall scenic quality of the town.

Gill's rural character stems from its long history as both a farming community and a mill town. Turn of the century architecture, cemeteries and former mill sites dot the landscape, making Gill a very picturesque and beautiful place to live and visit.

C. WATER RESOURCES

C.1 Watersheds

Gill is rich in water resources, including brooks, streams, ponds, vernal pools, and wetlands, (*see the Water Resources Map at the end of this section*). This section focuses on waters within the Town of Gill, but it is important to keep in mind those improvements in water quality within the town have impacts beyond town borders. By "drinking locally" and thinking regionally, Gill residents can ensure the future of its own groundwater quality while contributing to recovery of the Connecticut River.

C.1.1 Connecticut River Watershed

The Town of Gill lies in the Connecticut River Watershed. The Connecticut River spans more than eleven miles along the eastern and southern borders of the town. It is also one of fourteen National Heritage Rivers designated in the United States.

The Connecticut River has a "Class B" water quality designation from the New Hampshire-Vermont border to Holyoke and is classified as a warm water fishery. Class B waters are supposed to provide suitable habitat for fish and other wildlife, and to support primary contact recreational activities such as fishing and swimming. The water should also be suitable for irrigation and other agricultural uses. The classification of rivers and streams in Massachusetts does not necessarily mean that the river meets that classification, rather, classifications represent the state's goal for each river.

According to the "Connecticut River Basin 1998 Water Quality Assessment Report" published by the Massachusetts Department of Environmental Protection, the Connecticut River is impaired by polychlorinated biphenyls (PCBs) along its entire length and by fecal coliform from its confluence with the Deerfield River to the Montague town line. A report published in January 1998 by the New England Interstate Water Pollution Control Commission (NEIWPCC) listed bioaccumulation and toxicity as water quality issues for the entire length of the Connecticut River in Massachusetts. Bioaccumulation refers to the concentration of toxins in organisms at higher levels in the food chain. The report specifically identified PCBs in fish. As recently as April, 2004, the Massachusetts Department of Public Health, Bureau of Environmental Health Assessment issued a public health advisory for certain species of fish contaminated by PCBs in the Connecticut River (Department of Public Health website; 2004). The general public is warned not to eat any affected fish species, which include channel and white catfish, American eel and yellow perch. Pregnant women and nursing mothers are advised not to eat any fish from the Connecticut River.

Although wastewater treatment facilities constructed throughout the watershed have been treating major pollution discharges for more than twenty years, the Connecticut River is still plagued by pollution from PCBs, chlorine heavy metals, erosion, landfill leachate, storm water runoff and acid rain. These pollutants come from both point sources, like wastewater treatment plants and manufacturing plants, and non-point sources, including failed residential septic systems, improperly managed manure pits and stormwater runoff carrying herbicides.

According to the Connecticut River Five Year Action Plan 2002-2007 developed by the Mass. Executive Office of Environmental Affairs, the Town of Gill lies in the most rural portion (the Northern Reach) of the Connecticut River Watershed in Massachusetts. Important characteristics of this part of the watershed include agricultural lands, large tracts of forestland, and the presence of two hydroelectric facilities. The Plan lists the following objectives for the Northern Reach:

- Increase awareness of the importance of riparian buffers along the mainstem of the Connecticut River and its tributaries;
- Reduce human-influenced erosion along the mainstem and its tributaries;
- Restore vegetative riparian buffers where appropriate;
- Protect water quality through the implementation of growth management strategies;
- Obtain additional water quality data;
- Reduce non-point source pollution with a particular focus on the mainstem and four priority tributaries;
- Assist communities with the protection of drinking water resources;
- Improve fish passage;
- Encourage the protection of important wildlife habitat;
- Complete an updated inventory of existing boat access points;
- Implement an education program for boaters; and
- Assist with the development of a public access point on the Fall River in Bernardston.

The Living Waters project is a statewide biodiversity conservation planning project conducted by the Massachusetts Natural Heritage and Endangered Species Program (NHESP) that was completed in 2003. The project identified and delineated Core Habitats, which are the rivers, streams, lakes and ponds that are the most important for freshwater diversity conservation in Massachusetts. These Core Habitats represent those water bodies with the most viable rare plant and animal populations. Areas adjacent to these water bodies, Riparian Areas, are where NHESP believes land conservation efforts should be focused, in order to protect the Core Habitats from human impact. The Connecticut River and its tributaries, including the middle portion of the River in Gill, are considered particularly important Core Habitat areas. The Core Habitats and their respective Riparian Areas in Gill are habitat for two rare plants, six rare invertebrates and four rare fish.

Barton Cove Boat Access and Campground

A part of the Connecticut River Greenway State Park, the Barton Cove Access Ramp is located 1.5 miles east of Turners Falls on Rte. 2. The boat ramp can accommodate recreational motorboats, canoes, and fishing boats. The Barton Cove state boat ramp is one of three state-managed public access points on the Connecticut River in Franklin County. The two others are Pauchaug Access in Northfield and the Sunderland Access.

Barton Cove Campground

Located on a rocky peninsula jutting into the Connecticut River, Barton Cove is a recreational area owned and managed by Northeast Utilities. People can use the site for

day trips and picnicking or for a week-long camping trip. Barton Cove has bathroom and tent camping facilities and minimal automobile access. The area boasts a nature trail along a scenic rocky ridge overlooking the river, an abandoned dinosaur footprint quarry, unusual rock formations, a multitude of ferns and wildflowers, plunge pools of ancient waterfalls, and views of sunsets and bald eagles over the Connecticut River. Canoes and kayaks can be rented on an hourly or daily basis in season.

Surface Water Resources in the Connecticut River Watershed

Otter Run

Otter Run flows into the Connecticut River approximately opposite the midpoint of Kidd Island's western shore.

Otter Brook

Otter Brook is located in the northern portion of Gill and is a tributary of Dry Brook. There is also a sixty-acre marsh on Otter Brook off Ben Hale Road.

Dry Brook

Dry Brook originates in the Town of Bernardston and flows into the Connecticut River near Grist Mill Road. At one time, Dry Brook was used to power five mills along its banks. Two of the mills were known as Janes' Grist Mill and were located approximately 1,500 feet from the brook's confluence with the Connecticut River.

The entire length of Dry Brook is considered to be a Living Waters Core Habitat, an area of rare and important species. Land adjacent to the Brook is considered a Riparian Area, those areas around the Living Water Core that are necessary to provide a buffer for better protection of the rare species. Dry Brook supports a dense population of Eastern Pearlshell, a species of freshwater mussel known from only twenty-two water bodies in Massachusetts. This species inhabits streams and rivers that are cool and clean enough to support trout, its fish host. Dry Brook is also habitat for the Eastern Silvery Minnow, a fish listed by the state as a Species of Special Concern.

Ashuela Brook

Ashuela Brook originates at Shadow Lake and flows into the Connecticut River approximately opposite the downstream end of Kidd Island. Near its confluence with the Connecticut River, Ashuela Brook is considered a Living Waters Core Habitat, and land adjacent to the Brook is designated a Riparian Area in support of the Core Habitat.

Barton Cove

Approximately 200 acres in size, Barton Cove is located on the Connecticut River in the southwestern corner of Gill. Barton Cove is recognized by NHESP as an important Living Waters Core Habit for its biodiversity. Of special significance is the Bald Eagle, an Endangered Species, which uses the shoreline as nesting, feeding and perching habitat. Land surrounding Barton Cove is designated as a Riparian Area for the Core Habitat.

Lily Pond
Lily Pond is located off Barton Cove. It is considered part of the same Living Waters Core Habitat and Riparian Area as Barton Cove.

Shadow Lake
Shadow Lake is a five and one-half acre lake located on the Mount Hermon Campus in the northeastern portion of Gill.

There are a number of other un-named streams, ponds and wetlands in Gill that are located in the Connecticut River Watershed.

C.1.2 Fall River (sub-watershed of the Connecticut River)

The Fall River Watershed is a sub-watershed of the Connecticut River. The Fall River is located along the town's western border with Greenfield. This river empties into the Connecticut just below the Turners Falls dam and is a scenic and historic asset to the town. There are former mill sites along the Fall River, and its course meanders between cascades, small waterfalls and pools. The mills once used it for hydropower, but it is now primarily a place for fishing, swimming and is an important habitat corridor for wildlife. The Fall River is considered by the NHESP to be a Living Waters Core Habitat with adjacent land considered Riparian Areas in support of the Core Habitat.

Surface Water Resources in the Fall River Watershed

Cascade Brook
Cascade Brook, located in western Gill, flows into the Fall River near South Cross Road. The brook has a set of falls known as the Cascades located off South Cross Road. A wheelwright shop was once located at the falls. Cascade Brook is a Living Waters Core Habitat and land along its banks is a Riparian Area supporting the Core Habitat.

Otter Pond
Otter Pond is a shallow six-acre pond located in the northwestern corner of Gill between Hoe Shop Road and Dole Road.

C.2 Flood Hazard Areas

Flooding along rivers is a natural occurrence. Floods happen when the flow in the river exceeds the carrying capacity of the channel. Some areas along rivers flood every year during the spring, while other areas flood during years when spring runoff is especially high, or following severe storm events. The term "floodplain" refers to the land affected by flooding from a storm predicted to occur at a particular interval. For example, the

"one hundred-year floodplain," is the area predicted to flood as the result of a very severe storm that has a one percent chance of occurring in any given year. Similarly, the 500-year floodplain is the area predicted to flood in a catastrophic storm with a 1 in 500 chance of occurring in any year. According to the Town of Gill Local Hazards Mitigation Plan, there are relatively few areas in Gill within the 100-year floodplain due to the town's elevated topography. Those areas within floodplain include the area along the Connecticut River in the farmland area northeast of Stacey Mountain, and in the area of Barton Cove, along the Fall River, Dry Brook and Otter Brook.

C.3 Wetlands

Wetlands are transitional areas where land-based and water-based ecosystems overlap. Inland wetlands are commonly referred to as swamps, marshes and bogs. Technically, wetlands are places where the water table is at or near the surface or the land is covered by shallow water. Sometimes, the term wetland is used to refer to surface water as well.

Historically, wetlands have been viewed as unproductive wastelands, to be drained, filled and "improved" for more productive uses. Over the past several decades, scientists have recognized that wetlands perform a variety of extremely important ecological functions. They absorb runoff and prevent flooding. Wetland vegetation stabilizes stream banks, preventing erosion, and trap sediments that are transported by runoff. Wetland plants absorb nutrients, such as nitrogen and phosphorus, which would be harmful if they entered lakes, ponds, rivers and streams. They also absorb heavy metals and other pollution. Finally, wetlands are extremely productive, providing food and habitat for fish and wildlife. Many plants, invertebrates, amphibians, reptiles and fish depend on wetlands to survive. Wetlands have economic significance related to their ecological functions: it is far more cost-effective to maintain wetlands than build treatment facilities to manage stormwater and purify drinking water, and wetlands are essential to supporting lucrative outdoor recreation industries including hunting, fishing and bird-watching.

In recognition of the ecological and economic importance of wetlands, the Massachusetts Wetlands Protection Act is designed to protect eight "interests" related to their function: public and private water supply, ground water supply, flood control, storm damage prevention, prevention of pollution, land containing shellfish, fisheries, and wildlife habitat. To this end, the law defines and protects "wetland resource areas," including banks of rivers, lakes, ponds and streams, wetlands bordering the banks, land under rivers, lakes and ponds, land subject to flooding, and "riverfront areas" within two hundred feet of any stream that runs all year. Local Conservation Commissions are responsible for administering the Wetlands Protection Act; some towns also have their own, local wetlands regulations.

Many of Gill's wetlands can be found in its uplands in isolated forested areas. Some of these wetlands are mapped by the National Wetlands Inventory (NWI). Most upland wetlands are associated with the headwaters of the major stream systems in town.

Vernal Pools

Vernal pools are temporary bodies of fresh water that provide critical breeding habitat for many vertebrate and invertebrate wildlife species. They are defined as "basin depressions where water is confined and persists for at least two months during the spring and early summer of most years, and where reproducing populations of fish do not survive." Vernal pools may be very shallow, holding only 5 or 6 inches of water, or they may be quite deep. They range in size from fewer than 100 square feet to several acres (Natural Heritage & Endangered Species Program, Massachusetts Division of Fisheries & Wildlife, *Massachusetts Aerial Photo Survey of Potential Vernal Pools,* Spring 2001). Vernal pools are found across the landscape, anywhere that small woodland depressions, swales or kettle holes collect spring runoff or intercept seasonal high groundwater, and along rivers in the floodplain. Many species of amphibians and vertebrates are completely dependent on vernal pools to reproduce. Loss of vernal pools can endanger entire populations of these species.

NHESP certifies the existence of vernal pools when evidence is submitted to document their location and the presence of breeding amphibians that depend on vernal pools to survive. Certified vernal pools are protected by the Massachusetts Wetlands Protection Act and by additional state and federal regulations. There are forty-six potential vernal pools in Gill and three certified vernal pools, which are located on the Mount Hermon Campus.

C.4 Potential Aquifers

Aquifers are composed of water-bearing soil and minerals, which may be either unconsolidated (soil-like) deposits or consolidated rock. Consolidated rock, also known as bedrock, consists of rock and mineral particles that have been welded together by heat and pressure or chemical reaction. Water flows through fractures, pores and other openings. Unconsolidated deposits consist of material from the disintegrated consolidated rock like gravel and sand. Water flows through openings between particles.

As water travels through the cracks and openings in rock and soil, it passes through a region called the "unsaturated zone," which is characterized by the presence of both air and water in the spaces between soil particles. Water in this zone cannot be pumped. Below this layer, water fills all spaces in the "saturated zone". The water in this layer is referred to as "groundwater". The upper surface of the groundwater is called the "water table" (Masters, Gilbert. *Introduction to Environmental Engineering and Science, Second Edition*, 1998).

The route groundwater takes and the rate at which it moves through an aquifer is determined by the properties of the aquifer materials and the aquifer's width and depth. This information helps determine how best to extract the water for use, as well as determining how contaminants, which originate on the surface, will flow in the aquifer.

Aquifers are generally classified as either unconfined or confined (EPA and Purdue U.; 1998). The top of an unconfined aquifer is identified by the water table. Above the water table, in the unsaturated zone, interconnected pore spaces are open to the atmosphere. Precipitation recharges the groundwater by soaking into the ground and percolating down to the water table. Confined aquifers are sandwiched between two impermeable layers (Masters; 1998). Almost all the public wells in Massachusetts, including those in Gill, and many private wells tap unconfined aquifers (Mass. Audubon Society; 1985). Wells that rely on confined aquifers are referred to as "artesian wells."

Gill's surficial geology has characteristics that would support medium yield aquifers. A medium-yield aquifer provides a yield of between 25 and 1000 gallons per minute. According to MassGIS and the United States Geological Survey (USGS), the following areas support medium-yield aquifers:

- An area approximately three-fourths of a mile to the north of Munn's Ferry Road and approximately one mile to the south of Munn's Ferry Road, along the Connecticut River;
- An area approximately one half mile to the north of Pisgah Mountain Road and approximately one half mile to the south of Pisgah Mountain Road, along the Connecticut River; and
- An area bordered by the town's border with Bernardston, Boyle Road, the intersection of Main Road and Cross Road and Dry Brook (*see Water Resources Map*).

C.5 Potential Sources of Public and Private Drinking Water Supply Contamination

Potential sources of contamination of public and private wells include septic systems, sub-surface fuel tanks, manure piles, improper use, storage and disposal of hazardous materials, herbicide runoff from farmland, utility rights-of-way, and state highway vegetation control, and road runoff.

D. VEGETATION

Plants are a critical component of ecosystems in Gill. Plants convert solar energy into food, which supports all animal life. Plants cycle energy through the ecosystem by decaying, by removing carbon from the atmosphere and by shedding oxygen. Plants help moderate temperatures and act as shelter and feeding surfaces for herbivores, omnivores, and carnivores.

Plants and animals together make up *natural communities*, defined as interacting groups of plants and animals that share a common environment and occur together in different places on the landscape (NHESP; 2001). Over the past decade, ecologists and

conservationists in Massachusetts have devoted increasing effort to studying and protecting these natural communities, rather than focusing on individual species. This section and the following section will address both natural communities and their component species.

D.1 Forests

Approximately 70 percent of Gill is forested. The woodlands in Gill are used for hiking and nature study and are important habitat for wildlife. They also add to the scenic and rural character of the town. Gill's forests include species associations common to the Hemlock-Northern Hardwoods Forest to the north and the Appalachian-Oak Forest to the south.

Forested lands in Gill are at varied stages of growth due to the changes in landscape, elevation and exposure to elements. Table 4-1 gives a general inventory of the typical species in Gill.

Table 4-1: General Inventory of Forest Types in the Town of Gill

	Common Trees, Shrubs and Herbaceous Vegetation
Hemlock-Northern Hardwoods Forest	Eastern hemlock, sugar maple, red maple, American beech, yellow birch, paper birch, white ash, white pine, willow, speckled alder, sedges
Appalachian-Oak Forest	
Higher elevations	White oak, red oak, shagbark hickory, bitternut hickory, black cherry, white ash, American basswood, Eastern cottonwood
Lower elevations	American sycamore, silver maple, box elder, staghorn sumac, smooth sumac

Source: Open Space and Recreation Planning in Gill, Mass., 2000.

D.2 Agricultural Land

In 1999, agricultural land in Gill, which includes cropland, pastureland, orchards and nurseries, comprised approximately 20 percent of the town's total land area. Active farmland with prime farmland soils in Gill is primarily located along the Connecticut River, the upper Fall River, Cascade Brook, Otter Brook, Dry Brook, Ashuela Brook, and along Main Road. Other active farmland can be found along West Gill Road, River Road, North Cross Road and Mount Hermon Road.

D.3 Rare, Threatened, and Endangered Plant Species

The Natural Heritage and Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries and Wildlife has designated several "Priority Habitat" areas in the Town of Gill. A Priority Habitat is an area where plant and animal populations protected by the Massachusetts Endangered Species Act Regulations (321 CMR 10.00) may occur. These areas include:

- Along the banks of the Connecticut River;
- An area in the northeastern corner of Gill along Mount Hermon Road and the intersection of Mount Hermon Road and Main Road;
- An area along the eastern end of North Cross Road;
- Along Ashuela Brook from its confluence with the Connecticut River to approximately three-fourths of a mile upstream;
- An area along Main Road in the central portion of Gill, just northeast of Wyart Road;
- Along Pisgah Mountain Road; and
- An area to the west of Barney Hale Road (see Water Resources and Wildlife Habitat Maps).

Table 4-2: Rare Plant Species in the Town of Gill

Species Name	Common Name	Status
Aplectrum hyemale	Putty-Root	Endangered
Deschampsia cespitosa ssp. *Glauca*	Tufted Hairgrass	Endangered
Elatine americana	American Waterwart	Endangered
Morus rubra	Red Mulberry	Endangered
Malaxis brachypoda	White Adder's-Mouth	Endangered
Scirpus ancistrochaetus	Northeastern Bulrush	Endangered
Arabis missouriensis	Green Rock-Cress	Threatened
Carex grayi	Gray's Sedge	Threatened
Crassula aquatica	Pygmyweed	Threatened
Cryptogramma stelleri	Fragile Rock-Brake	Threatened
Minuartia michauxii	Michaux's Sandwart	Threatened
Prunus pumila var depressa	Sandbar Cherry	Threatened
Amelanchier nantucketensis	Nantucket Shadbush	Special Concern
Aster tradescantii	Trandescant's Aster	Special Concern
Pellaea atropurpurea	Purple Cliff-Brake	Special Concern

Source: NHESP BioMap and Living Waters, 2004.

NHESP has identified 241 native plant species as rare in the Commonwealth, and a number of rare plants have been documented in the Town of Gill (*see Table 4-2*). These plants occur in some of the Priority Habitats identified above. Plants (and animals) listed as *endangered* are at risk of extinction (total disappearance) or extirpation (disappearance of a distinct interbreeding population in a particular area). *Threatened* species are likely to become endangered in the foreseeable future. Species of special concern have been documented to have suffered a decline that could result in its becoming threatened, or

occur in very small numbers and/or have very specialized habitat, the loss of which could result in their becoming threatened (NHESP and The Nature Conservancy, *Our Irreplaceable Heritage: Protecting Biodiversity in Massachusetts*; 1998).

E. FISHERIES AND WILDLIFE

Gill's forests, rivers, wetlands and open farmland provide habitat for a variety of common and rare wildlife species. This section discusses wildlife species and their habitats from the perspective of natural communities, individual species, and patterns of wildlife distribution and movement across the landscape.

The Massachusetts Natural Heritage & Endangered Species Program (NHESP) BioMap Project has identified areas throughout the state that are critical to supporting the maximum number of terrestrial and wetland plant and animal species, and natural communities. It uses Estimated Habitats and other documentation to identify the areas most in need of protection in order to protect the native biodiversity of the Commonwealth. The BioMap focuses primarily on state-listed rare species and exemplary natural communities and was developed to promote strategic land protection of those areas that would provide suitable habitat over the long term. The BioMap shows those areas designated as Core Habitats and Supporting Natural Landscapes. The Core Habitat areas, identified through field surveys, include the most viable habitat for rare plants and rare animals and exemplary natural communities. The Supporting Natural Landscapes, determined through analyses using Geographic Information Systems (GIS) mapping programs, include buffer areas around the Core Habitats, large undeveloped patches of vegetation, large "roadless" areas, and undeveloped watersheds.

In the Town of Gill, there are several BioMap Core Habitat areas:

- Along the Connecticut River including Barton Cove;
- An area along Main Road in the northeast corner of Gill;
- An area to the east of Main Road between Ashuela Brook and Dry Brook;
- Along Barney Hale Road, Pisgah Mountain Road and River Road to the Connecticut River; and
- Stacey Mountain (*see Open Space and Wildlife Habitat Map*).

E.1 General Description and Inventory of Wildlife and Wildlife Habitats

E.1.1 Amphibians and Reptiles

Vernal pools and wetlands are essential habitat for two-thirds of the Commonwealth's amphibious species. The Jefferson salamander is a species of concern that inhabits upland forest areas near ponds or vernal pools. The spotted turtle is another species of

special concern in Gill that inhabits primarily wooded wetlands. Identifying and protecting wetlands are the best means to ensure that these species remain a part of the New England biota.

The forests, wetlands and other surface waters in Gill are home to nine snake species, five turtle species, nine frog and toad species and seven species of salamanders, such as the spotted salamander and the eastern newt.

E.1.2 Fish

Migratory fish species such as shad and salmon once inhabited the Connecticut River in great numbers. When the Turners Falls dam was built in 1798 and subsequent dams were built further downstream, the salmon stopped running in the Connecticut River. Northeast Utilities is maintaining a fish ladder at Turners Falls in order to aid the comeback of this once abundant species.

The two endangered fish species found in Gill are the yellow lamp mussel (*Lampsilis cariosa*), and the shortnose sturgeon (*Acipenser brevirostrum*). The yellow lamp mussel has only been sited once in the Connecticut River since 1982. It is thought that this species has virtually disappeared from the River because of pollution and as a result of dam-building. The varying water levels created by the Holyoke Dam and the Turners Falls Dam leave the riverbank, their habitat, exposed for extended periods of time. The shortnose sturgeon is a migratory species that has suffered from predation by introduced species such as the channel catfish. Its migratory path has been blocked by dams on the Connecticut and the species is also sensitive to water pollution.

Other migratory species found in Gill are shad, blueback herring and alewife. Non-migratory species present in the Connecticut River are walleyed pike, carp and bass. Shadow Lake has a native population of blue-gill, crappie, perch and pickerel.

The Fall River and Dry Brook are stocked with trout for recreational fishing and native brook trout are found throughout the town's waterways.

E.1.3 Birds

The Connecticut River Valley is a part of a major migratory flyway from North to South and vice versa. Game birds include ruffed grouse, woodcock, black duck, and mallard. Many shorebirds visit the Connecticut riverbanks in the summer months. Some examples of Gill shorebirds are killdeer, yellow legs, green heron, great blue heron, and spotted sandpiper. Other species in Gill include the common loon, osprey, snow geese, wild turkey, Canada goose, hawks, falcons, nighthawks and swallows. A nesting pair of American Bald Eagles has resided on Barton Island for about a decade. The American Bald Eagle is the only endangered bird species in Gill.

E.1.4 Mammals

Though many larger mammals were driven out or killed off by colonists in the nineteenth century, some are slowly returning to the area as forests have grown back across the landscape. Black bear, white-tailed deer and beaver are making a comeback in some parts of the region. Mammal species common to Gill and surrounding towns are: Eastern coyote, opossum, gray fox, red fox, eastern cottontail, New England cottontail, flying squirrel, gray squirrel, red squirrel, varying hare, mink, otter, porcupine, skunk, raccoon, and weasel.

E.2 Rare Wildlife Species

The Massachusetts Natural Heritage and Endangered Species Program has mapped areas of important habitat for rare species in Gill. The following areas have been found to have rare wildlife and are noted in the Massachusetts Natural Heritage Atlas, 2000-2001 Edition:

- The Connecticut River and its surrounding floodplain and wetlands;
- A small area on Main Road between Mason and Darby Hill;
- Along Pisgah Mountain Road starting at Rte. 2 and spanning across Camp Road and the southern portion of River Road; and
- The lands surrounding the intersection of North Cross Road, Munns Ferry Road and Main Road (*see Open Space and Wildlife Habitat Map*).

The Natural Heritage Atlas also provides mapping for rare wildlife habitat in adjacent towns. Ecological corridors do not stop at municipal boundaries. It is important to be aware of environmentally sensitive areas in adjacent towns in order to ensure a continuum of healthy habitat.

Table 4-3: Rare, Threatened and Endangered Wildlife Species found in Gill

Scientific Name	Common Name	Status
Invertebrates		
Metarranthis apiciaria	Barrens Metarranthis Moth	Endangered
Apodrepanulatrix liberaria	New Jersey Tea Inchworm	Endangered
Alasmidonta varicosa	Brook Floater	Endangered
Lampsilis cariosa	Yellow Lamp Mussel	Endangered
Zanclognatha martha	Pine Barrens Zanclognatha	Threatened
Alasmidonta undualta	Triangle Floater	Special Concern
Ligumia nasuta	Eastern Pond Mussel	Special Concern
Strophitus undulatus	Creeper	Special Concern
Enallagma carunculatum	Tule Bluet	Special Concern
Hemaris gracilis	Slender Clearwing Sphinx Moth	Special Concern
Invertebrates		
Euchlaena madusaria	Sandplain Euchlaena	Special Concern
Psectraglaea carnosa	Pink Sallow	Special Concern
Zale sp. 1 near lunifera	Pine Barrens Zale	Special Concern
Itame sp. 1 near inextricata	Pine Barrens Itame	Special Concern

Scientific Name	Common Name	Status
Satyrium favonius	Oak Hairstreak	Special Concern
Callopyrus irus	Frosted Elfin	Special Concern
Hemileuca maia	Barrens Buckmoth	Special Concern
Gomphus vastus	Cobra Clubtail	Special Concern
Vertebrates		
Haliaeetus leucocephalus	Bald Eagle	Endangered
Ambystoma opacum	Marbled Salamander	Threatened
Ammodramus savannarum	Grasshopper Sparrow	Threatened
Terrapene carolina	Eastern Box Turtle	Special Concern
Ambystoma jeffersonianum	Jefferson Salamander	Special Concern
Fishes		
Acipenser brevirostrum	Shortnose Sturgeon	Endangered
Lota lota	Burbot	Special Concern
Hybognathus regius	Eastern Silvery Minnow	Special Concern

Source: NHESP BioMap and Living Waters, 2004.

E.3 Conserving Gill's Biodiversity

There are two concepts that can be used to help explain Gill's options for pursuing the conservation of the town's biodiversity: Island Biogeography and landscape ecology.

The theory of Island Biogeography is based on observations that biodiversity is greater on large islands than on small ones, and greater on islands that are close to the mainland. The concept of islands surrounded by water has been applied to the idea of "islands" of protected open space surrounded by developed areas. Based on this theory, ecologists predict that increasing the size of a protected area increases its biodiversity (MacArthur and Wilson; 1967). Therefore, connecting two protected areas via a protected corridor to create one large area should also increase natural biodiversity (Wilson and Willis; 1975).

Another model for wildlife habitat protection aggregates similar land uses while allowing other uses in discrete areas (Forman; 1997). This model is reflected in Gill in areas where agriculture is concentrated along river or stream corridors. This model allows large blocks of forest to remain intact.

Individual animals move within a landscape. When and where wildlife and fish species move is not completely understood by wildlife biologists. However, it is known that animals pay little attention to political boundaries. Wildlife seek natural cover for shelter and food, but some species willingly forage where human uses, such as farm fields, gardens and even trash cans, provide browse or food. As the land within Gill continues to be fragmented by development, it is reasonable to expect that remaining large blocks of undeveloped forest and the parcels of land connecting them will become more important to area wildlife, and that conflicts between the needs of wildlife and residents will become more common.

Many species of wildlife in Gill have home ranges greater than fifty acres in size. Even those species with smaller home ranges move across the landscape between sources of shelter, water, food and mating areas. Some animals, including white-tailed deer and black bear, seek both interior forest habitat and wetland edges where food sources may be more abundant.

Roads are a form of connection for humans but they can be an impediment to some wildlife movement. Wildlife benefit from having land to move within that is isolated from human uses. Conservation planning that recognizes this need often focuses on the development of wildlife corridors. Permanently protected wildlife corridors are particularly critical in a landscape which is experiencing development pressures, to ensure that animals have the ability to travel across vegetated areas between large blocks of habitat.

Connections between bodies of water and sub-watersheds are also important for wildlife and fisheries species. Some of the more common animals that use river and stream corridors are beaver, muskrat, raccoon, green heron, kingfish, snapping turtle, and many species of ducks, amphibians, and fish. Since many species rely on a variety of habitats during different periods of their life cycle, species diversity is greatest in areas where several habitat types occur in proximity to each other. With this in mind, the protection of all habitat types is vital for maintaining and enhancing biodiversity in Gill.

How will the Town of Gill determine the most appropriate conservation strategies for wildlife habitat? There are three general paths to follow in conserving the health of wildlife populations. One is to protect the habitat of specific species that are rare, threatened, or endangered. It is thought that other species will also benefit from this strategy. A second path is to conserve landscape-level resources such as contiguous forest or riparian areas. This helps to protect the habitats of a large number of species, but it might not meet the needs of all rare and endangered species. The third method is a combination of the first two. Maintaining the biodiversity of Gill over the long term will likely require the protection of both unique habitats for specific species and networks of habitat across the landscape. Conservation strategies for the town to consider include monitoring of species locations, numbers, and movements; the protection of core habitat areas as identified by the NHESP BioMap and Living Waters Core Habitat Area (*see Open Space and Wildlife Habitat Map*); the continued protection and linkage of large blocks of contiguous forestland; the retention of early successional habitats like fields and grasslands; and the protection of vernal pools, wetlands, and riparian corridors that sustain the greatest diversity of life in Gill.

F. SCENIC RESOURCES AND UNIQUE ENVIRONMENTS

The characteristics that allow a stranger to distinguish Gill from other towns in the region may be different than the unique qualities and special places that only residents can really

know. This section identifies the scenic resources and unique environments that most town residents would agree represent the essence of Gill's character. In many ways the history of Gill--how people came to settle the land, use its resources, and enjoy its forests, streams, and bodies of water--can be seen in the landscapes that have retained a sense of the past. The unique environments in Gill play a very important role in providing residents with a sense of place. Brooks, mountains, wetlands, and village centers provide markers on the landscape within which we navigate our lives.

Scenic landscapes often derive their importance from their location relative to other landscape features. The purpose of inventorying scenic resources and unique natural environments in Gill is to provide a basis for setting resource protection.

Table 4-4: Significant Historic/Recreation/Natural/and Scenic Landscapes/Environments in Gill

Map #	Historic Resources
H1	Riverside Archaeological District*
H2	Grist Mill Site
H3	Methodist Church
H4	Old Bridge Crossing
H5	Center Cemetery
H6	Ballard & Janes Mill Sites
H7	Factory Hollow
H8	Capt. Turner Monument
H9	Riverside Cemetery
H10	Old Red Bridge Anchor
Map #	**Recreation Resources**
R1	Oak Ridge Golf Course
R2	Riverside School Recreation Area
R3	Barton's Cove Recreation Area
R4	Route 2 Rest Area
Map #	**Natural Resources**
N1	Shadow Lake
N2	Otter Pond
N24	Lily Pond
N3	Otter Brook
N4	Dry Brook
N5	Ashuela Brook
N6	River Banks near Kidd's Island
N7	Fall River
N8	Fall River Tributary "Cascades"
N9	Darby Hill
N10	Dry Brook "Cascades"
N11	Connecticut River
N12	Great Falls & Great Island
N13	Route 2 Geologic Corridor
N14	Submerged Dinosaur Footprint Quarry
N15	Armored Mud Balls
N16	Dinosaur Footprint Quarry
N17	Dinosaur Footprint Quarry
N18	Barton Island & Eagle's Nest
N19	Dinosaur Footprint Quarry
N20	King Phillip's Abyss
N21	Deep Hole
N22	French King Gorge
N23	French King Rock

Map #	Scenic Resources
S1	Mt. Hermon Campus & Scenic Vista
S2	Bascom Hollow/Bascom Road
S3	West Gill Road
S4	Dry Hill
S5	Barnard Hill
S6	Historic & Scenic Farm Area (Main Road north)
S7	Munn's Ferry Road
S8	Franklin Road
S9	Pisgah Mountain
S10	Mason Hill
S11	Historic & Scenic Farm Area (Main Road south)
S12	Main Road
S13	Grist Mill Road
S14	Barney Hale Road
S15	Pisgah Road
S16	Stacey Mountain & Scenic Vista
S17	River Road
S18	Riverview Drive
S19	Route 2 Scenic Vista
S20	Mohawk Trail
S22	French King Bridge & Scenic Vista

Source: Community Development Plan for the Town of Gill, 2004.

G. ENVIRONMENTAL PROBLEMS

There are two main environmental problems in Gill:

- Fragmentation of farm and forestland, and
- Connecticut River bank erosion.

G.1 Farm and Forestland Fragmentation

Although there may not be agreement as to its severity or solution, the demand for single-family detached housing in Gill and in the region appears to be growing at a faster rate than in the state overall. Gill is far from immune to these regional trends. Taking other constraints into consideration including wetlands and buffer areas to surface waters, 5,900 acres of land could still be developed in town. This is equal to 62 percent of the town. There is enough land in town to fit 2,500 more building lots. This means that 7,000 residents and 1,200 more school-aged children could live in Gill at some point in the future.

Many of the largest undeveloped parcels in town are also the most suitable for development and include farm and forestland with slopes under 25 percent, which are also not protected from development. These open and forested lands contribute most to the town's rural character and are owned by a handful of families. Their agricultural businesses maintain the landscapes as they are: pastoral, historic, and overall, simply

breathtaking. Were these farm businesses to fail, the future of the farms and their families, the farm and forestlands, as well as the rural character of the town itself, would be in jeopardy.
Unplanned residential development across town would also increase non-point source pollution like road runoff and reduce the value of remaining wildlife habitat. Increases in runoff would diminish the biodiversity in the stream network all over town. One solution to the problem could be a combination of zoning techniques applied to encourage development in suitable areas and land conservation to minimize development in those areas with the greatest agricultural, scenic, ecological, cultural, and historical values, which are also most threatened from development.

G.2 Erosion on the Connecticut River

G.2.1 Northfield Mountain Pumped Storage Project

The following text was developed by the Natural Resources Program of the Franklin Regional Council of Governments Planning Department, for the Final Project Report for the Connecticut River Watershed Restoration Phase II.

The Northfield Mountain Pumped Storage Project, completed in 1970, is located about five miles upstream of the Turners Falls dam. The concept behind the Pumped Storage Project is simple. This facility only provides power when it is needed; for example, during periods of peak demand. Water is pumped from the lower reservoir (the Connecticut River) to the upper reservoir (elevation 1,000 feet) that is located atop Northfield Mountain. The 300-acre upper reservoir holds 5.5 billion gallons of water. During periods of peak demand, water is released to the lower reservoir via the turbines to generate electricity. The power generating/pumping facility is located completely underground and consists of four 250 thousand kilowatt reversible pump turbines. Each of these turbines can pump a maximum of 22,500 gallons per second of river water up to the upper reservoir. To generate electricity, each turbine can discharge water from the upper reservoir back to the river at a maximum rate of 33,700 gallons per second.

During the construction of the Pumped Storage Project, the dam at Turners Falls was raised to accommodate a power generating facility to elevation 185.5 feet. A 2,500-acre lower reservoir, known as the Turners Falls Power Pool, was created behind the dam. The Turners Falls Power Pool is a 22-mile long reach of the Connecticut River between the Turners Falls Dam and the Vernon Dam in Vernon, Vermont. The Turners Falls Power Pool, an impoundment of the Connecticut River, is referred to as the "lower reservoir," although it was never designed to act as such in support of the Northfield Mountain Pump Storage Facility. The hydrodynamics of the Turners Falls Power Pool are primarily controlled by the three hydroelectric generating facilities: Turners Falls, Vernon, and the Northfield Mountain Pumped Storage Project. The joint operations of the Turners Falls facility and the Northfield Mountain Pumped Storage Project have resulted in larger and faster pool fluctuations, which have significantly changed the daily

regime of this reach of the Connecticut River. Typical pool fluctuations average 3.5 feet per day. Much higher pool fluctuations, on the order of 9-10.5 feet, may occur over the course of the weekly pump/release cycle.

The banks of non-cohesive, alluvial sand and silt, which dominate the Turners Falls Power Pool section of the Connecticut River, typically exceed twenty (20) feet in height. Erosive forces have destabilized many sections of bank resulting in slumping and mass wasting of large sections of bank and the loss of trees and other riparian vegetation on the top of the banks. Over the years, several studies have been undertaken to inventory and assess erosion sites, identify the possible causes of the erosion, and propose various bank stabilization techniques for the Turners Falls Power Pool. In 1979, the Army Corps of Engineers (ACOE) issued a "Report on: Connecticut River Streambank Erosion Study, Massachusetts, New Hampshire and Vermont." This document presented the results of a detailed study of the numerous variables that contribute to bank erosion in the 141-mile reach of the river from Turners Falls Dam to the headwaters of the Wilder Hydro Pool in Haverhill, New Hampshire and Wells River, Vermont. One of the six index sites evaluated by the ACOE was located in the Turners Falls Power Pool approximately eight miles upstream of the Turners Falls Dam.

The ACOE's analysis in 1979 found that the natural shear stress exerted on a bank by flowing water can be increased by as much as 60 percent by such factors as flood stage variations, pool fluctuations, boat and wind waves, gravitational forces, etc. Further, they reported that causes of bank erosion in the 141-mile reach of the Connecticut River stretching north from Massachusetts into New Hampshire and Vermont, in descending order of importance were: shear stress (velocity), pool fluctuations, boat waves, gravitational forces, seepage forces, natural stage variations, wind waves, ice, flood variations, and freeze-thaw cycles. In July 1991, the ACOE released the results of a follow-up study on the erosion in the Turners Falls Power Pool. This study concluded that bank erosion in the Power Pool had increased almost threefold since the 1979 study and approximately one-third of the bank in the Power Pool was actively eroding.

In the spring of 1994, the Franklin County Commission (now the Franklin Regional Council of Governments) convened the stakeholders to encourage a cooperative approach to assessing and mitigating the erosion in the Turners Falls Power Pool. The Connecticut River Streambank Erosion Committee (CRSEC) was formed and its membership is comprised of local officials, state and federal agencies, non-profit environmental groups, landowners, and utility representatives. This time, the stakeholders reached consensus and the utility prepared a Draft Environmental Impact Report, which described a bank project that would stabilize several thousand feet of eroding riverbank using bioengineering techniques. The necessary environmental permits were secured and the utility committed $1.2 million over six years toward what would be called Phase I of the bank stabilization work.

The Franklin Regional Council of Governments (FRCOG) was awarded $142,000 from the Massachusetts Department of Environmental Protection's s.319 Non-point Source

Competitive Grant Program in order to monitor, document and report on three of the sites to be restored under Phase I, to staff the CRSEC, and to provide partial funding for construction of one of the sites. The purpose of Phase I was to demonstrate the feasibility and effectiveness of using various bioengineering techniques, an innovative, "soft" alternative to rip-rap, gabions, and other traditional "hard" engineering solutions. Bioengineering techniques incorporate woody and/or herbaceous plants and plant materials to construct a living system of bank protection. Using bioengineering to stabilize eroding banks has many advantages when compared to traditional armored bank treatments, including: the restoration and enhancement of wildlife habitat, the restoration of aesthetic resource values and the compatibility of the treatment with on-site environmental resources. The use of vegetation to stabilize banks also provides a buffer that can reduce the pollutant and sediment loading associated with overland runoff and flood flows. The June 1999 report prepared by the Franklin Regional Council of Governments for the s.319 grant describes the work completed at three Phase I sites. A total of 2,250 linear feet of eroding riverbank were stabilized.

Following the completion of work at the three sites monitored under the s.319 grant, the CRSEC and NU continued their bank stabilization work. Two additional sites, approximately 3,180 linear feet in total length, were stabilized between 1998 and 2000 using bioengineering techniques. In April 2000, the FRCOG was awarded a second s.319 grant for Phase II of the Connecticut River bioengineering restoration work. The details of the project, including site selection, construction and monitoring, and technology transfer, are described in the following sections of this report. This project, like the Phase I project, was a cooperative effort between the Franklin Regional Council of Governments, the members of the FRCOG's Connecticut River Streambank Erosion Committee, and Northeast Utilities.

The remaining issue regarding erosion along the banks of the Turners Falls Power Pool is that erosion is occurring at a faster rate than the completion of the riverbank bioengineering restoration work. The full restorative work, paid for by NU, takes time to do correctly. There have been some discussions as to the best strategies for stemming the erosion by faster, less expensive means in advance of the full bioengineering method.

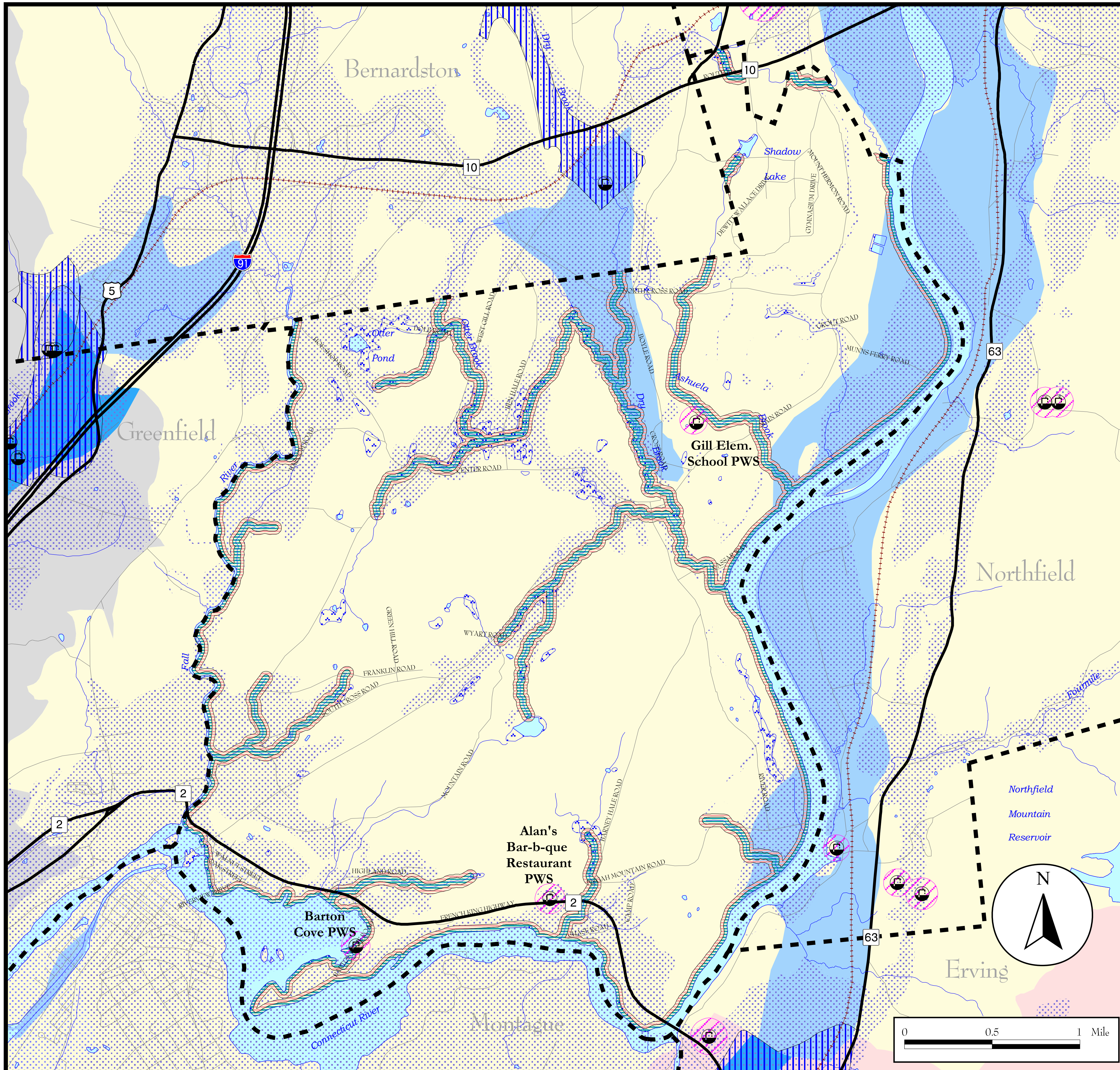
G.2.2 Recreational Boating Waves

Boat waves continue to be a significant problem on the Connecticut River in Gill. As is mentioned in the ACOE's 1979 study, stream bank erosion and other problems are caused by boat waves. The Commonwealth of Massachusetts General Laws include a prohibition of open water speeds in excess of 45 mph. However, there are no restrictions on motor craft speed near the banks of a river or on the number of craft that can be in operation at any one time. Other problems that are associated with the amount and speed of motor craft on the Connecticut River in Gill include water pollution from silt and mud churned-up by motorboats, noise pollution, and the impacts of large numbers of big motor craft on other forms of recreational boating (e.g. canoeing and kayaking).

Town of Gill

Open Space and Recreation Plan

Water Resources



Legend

- Town Line
- Rail Lines
- Roads
- Major roads
- Streams and Rivers
- Deerfield River Watershed
- Connecticut River Watershed
- Millers River Watershed
- Public water supply sources
- Water body
- National Wetland Inventory wetland
- Interim Wellhead Protection Area
- Surficial Geology (sand/gravel and flooodplain alluvium)
- Aquifer yield 25-1,000 gpm (medium yield)
- Aquifer yield >200 gpm (high yield)

River Protection Act

- 0-100 feet from river bank
- 100-200 feet from river bank

Map Sources:

Map produced by The Franklin Regional Council of Governments Planning Department. GIS data sources include the FRCOG Planning Department, the Massachusetts Highway Department and MassGIS. Digital data obtained from MassGIS represent the efforts of the Massachusetts Executive Office of Environmental Affairs and its agencies to record information from the sources cited in the associated documentation. EOEA maintains an ongoing program to record and correct errors in the GIS data that are brought to its attention. EOEA makes no claims as to the reliability of the GIS data or as to the implied validity of any uses of the GIS data. EOEA maintains records regarding all methods used to collect and process these digital data and will provide this information on request. Executive Office of Environmental Affairs, MassGIS EOEA Data Center, 251 Causeway Street, Suite 900, Boston, MA, 617-626-1000.

Road data provided by Massachusetts Highway Department. Town line, rail line, zone II, interim wellhead protection area, River Protection Act area, public water supply, aquifer, surficial geology, major basin, National Wetland Inventory, river, stream, and pond data provided by MassGIS.

Note: Depicted boundaries are a approximate and are intended for planning purposes only. Portions of the source data were obtained from 1:100,000 scale maps, therefore the accuracy of the line work on this map is +/- 100 feet.

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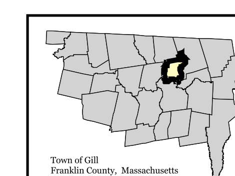
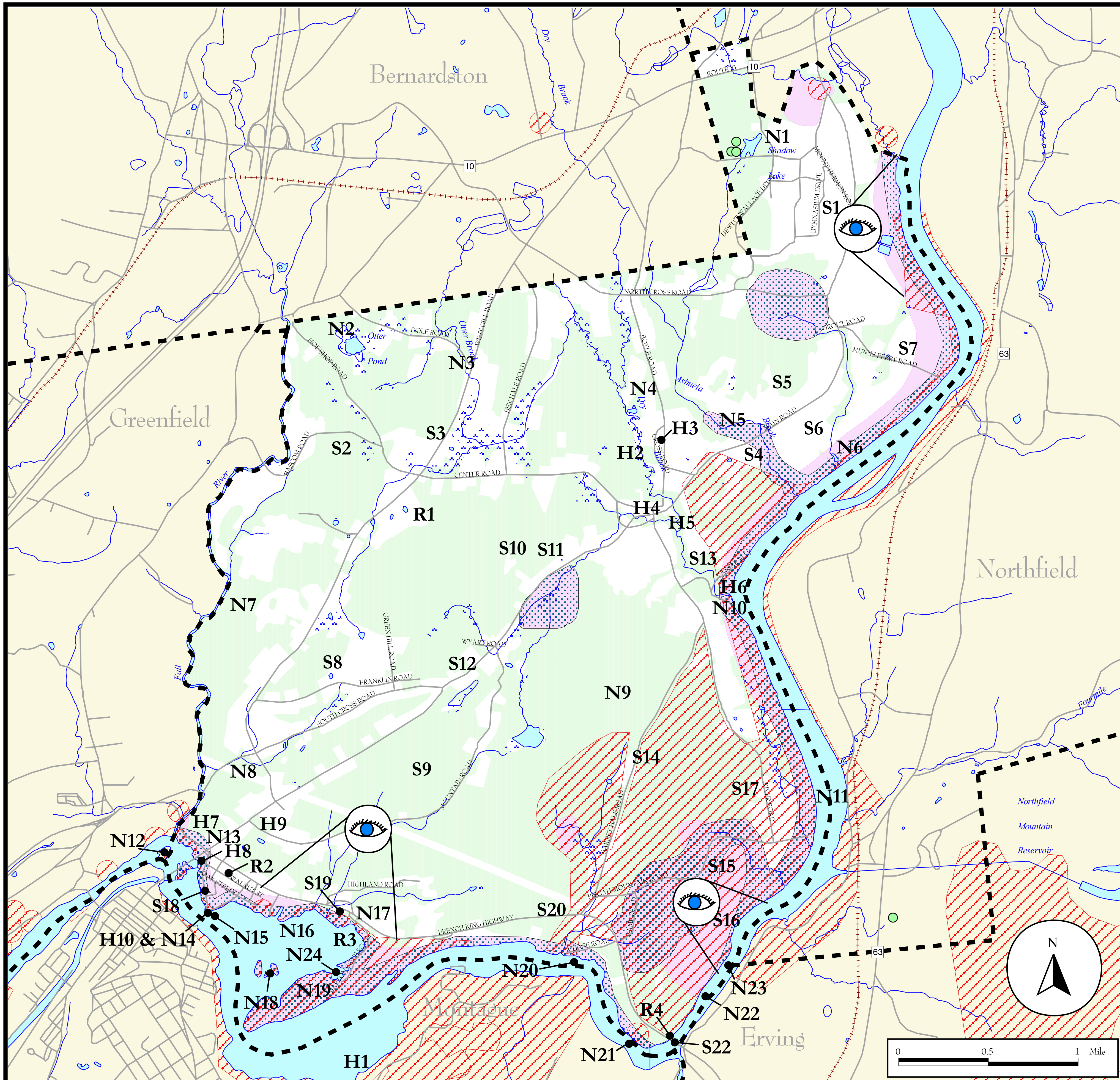


January 24, 2005



Town of Gill

Open Space and Recreation Plan

Scenic Resources and Unique Environments

Title	Code
Historic Resources	
Riverside Archaeological District	H1
Grist Mill Site	H2
Methodist Church	H3
Old Bridge Crossing	H4
Center Cemetery	H5
Ballard & Janes Mill Sites	H6
Factory Hollow	H7
Capt. Turner Monument	H8
Riverside Cemetery	H9
Old Red Bridge Anchor	H10
Natural Resources	
Shadow Lake	N1
Otter Pond	N2
Lily Pond	N24
Otter Brook	N3
Dry Brook	N4
Ashuela Brook	N5
River Banks near Kidd's Island	N6
Fall River	N7
Fall River Tributary "Cascades"	N8
Darby Hill	N9
Dry Brook "Cascades"	N10
Connecticut River	N11
Great Falls & Great Island	N12
Route 2 Geologic Corridor	N13
Submerged Dinosaur Footprint Quarry	N14
Armored Mud Balls	N15
Dinosaur Footprint Quarry	N16
Dinosaur Footprint Quarry	N17
Barton Island & Eagle's Nest	N18
Dinosaur Footprint Quarry	N19
King Phillip's Abyss	N20
Deep Hole	N21
French King Gorge	N22
French King Rock	N23
Recreational Resources	
Oak Ridge Golf Course	R1
Riverside School Recreation Area	R2
Barton's Cove Recreation Area	R3
Route 2 Rest Area	R4
Scenic Resources	
Mt. Hermon Campus & Scenic Vista	S1
Bascom Hollow/Bascom Road	S2
West Gill Road	S3
Dry Hill	S4
Barnard Hill	S5
Historic & Scenic Farm Area (Main Road north)	S6
Munn's Ferry Road	S7
Franklin Road	S8
Pisgah Mountain	S9
Mason Hill	S10
Historic & Scenic Farm Area (Main Road south)	S11
Main Road	S12
Grist Mill Road	S13
Barney Hale Road	S14
Pisgah Road	S15
Stacey Mountain & Scenic Vista	S16
River Road	S17
Riverview Drive	S18
Route 2 Scenic Vista	S19
Mohawk Trail	S20
French King Bridge & Scenic Vista	S22

Legend

- Town Line
- Rail Lines
- Roads
- Streams and Rivers
- Water body
- National Wetlands Inventory wetland
- Forest
- Estimated Habitats of Rare Wildlife (NHESP)
- Priority Habitats of Rare Species (NHESP)
- NHESP BioMap Core Habitat
- Alpha-numeric codes: Scenic Resources and Unique Environments (see table)
- Certified Vernal Pool (Additional vernal pools that have not been certified or mapped by the State are not included.)

Map Sources:

Map produced by The Franklin Regional Council of Governments Planning Department. GIS data sources include the FRCOG Planning Department, the Massachusetts Highway Department and MassGIS. Digital data obtained from MassGIS represent the efforts of the Massachusetts Executive Office of Environmental Affairs and its agencies to record information from the sources cited in the associated documentation. EOEA maintains an ongoing program to record and correct errors in the GIS data that are brought to its attention. EOEA makes no claims as to the reliability of the GIS data or as to the implied validity of any uses of the GIS data. EOEA maintains records regarding all methods used to collect and process these digital data and will provide this information on request. Executive Office of Environmental Affairs, MassGIS EOEA Data Center, 251 Causeway Street, Suite 900, Boston, MA, 617-626-1000.

Road data provided by Massachusetts Highway Department. Town line, rail line, river, stream, pond, land use, core habitat, Natural Heritage, and open space data provided by MassGIS.

NHESP 2003 Estimated Habitats of Rare Wildlife: For use with the Massachusetts Wetlands Protection Act regulations (310CMR 10).

NHESP 2003 Priority Habitats for State-protected Rare Species: NOT equivalent to Significant Habitat' as designated under Massachusetts Endangered Species Act.

NHESP 2003 Massachusetts Certified Vernal Pools.

Note: Depicted boundaries are approximate and are intended for planning purposes only. Portions of the source data were obtained from 1:100,000 scale maps, therefore the accuracy

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SECTION 5

INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST

The previous sections have identified areas within the Town of Gill that are significant for their cultural, scenic, or ecological values. This information is helpful for understanding the character of Gill and for outlining issues, which may be of particular interest in open space and recreation planning decisions. This next section provides a detailed parcel-by-parcel inventory of existing open space land containing these significant values. It identifies public and private parcels, current land use, the degree of protection, as well as existing land management practices.

Table 5-1: Summary Areas of Farmland and Forest Open Space by Ownership and Level of Protection from Development in Gill

PRIVATELY OWNED OPEN SPACE	Acres	% Of Total Land Area in Gill
Farmland		
Protected by Agricultural Preservation Restriction	292.02	3.1%
Temporarily Protected Farmland under Ch. 61A	1,733.13	18.3%
Forestland		
Protected by Conservation Restriction	266.25	2.8%
Temporarily Protected Forestland		
Chapter 61	680.30	7.2%
Chapter 61B	404.20	4.3%
TOTAL PRIVATELY OWNED OPEN SPACE WITH SOME LEVEL OF PROTECTION	**3,375.90**	**35.6%**
PUBLICLY and QUASI-PUBLICLY OWNED OPEN SPACE		
Forestland		
Protected by State Conservation Agencies		
Department of Conservation and Recreation	335.20	3.5%
Protected by the Town of Gill		
Gill Conservation Commission	0.91	0.001%
Protected by State Conservation Organizations		
Mount Grace Land Conservation Trust	5.60	.06%
Connecticut River Watershed Council	7.40	.08%
The Nature Conservancy	178.1	1.9%
Land with Limited Protection & Owned by Town of Gill	19.10	0.2%
Other Protected Land		
Cemeteries	7.38	0.1%
TOTAL PUBLICLY AND QUASI-PUBLICLY OWNED OPEN SPACE WITH SOME LEVEL OF PROTECTION	**553.69**	**5.8%**
TOTAL OPEN SPACE WITH SOME LEVEL OF PROTECTION	**3,929.60**	**41.5%**

Source: Community Development Plan for the Town of Gill, 2004; Town of Gill Assessor's Maps, 2003;

A. PRIVATELY OWNED OPEN SPACE PARCELS

A.1 Privately Owned Agricultural Land

Farmland, including farm woodland, constitutes approximately 60 percent of the total amount of privately owned open space in Gill with some level of protection from development, 51.5 percent of all undeveloped land with some level of protection and 21.4 percent of the town's total land base. Tables 5-2 and 5-3 display information on those farm parcels in Gill which have a level of protection from development, including their ownership, management, and acreage.

Table 5-2: Privately Owned Agricultural Land Protected from Development in Gill

Owner/ Manager	Holder of Restriction/ CR* or APR*	Assessor's Map	Assessor's Lot	Acres	Value
Dunklee	Department of Agricultural Resources/APR	203	3	92.00	Prime Farmland Soils
French	Franklin Land Trust/APR	209	8	20.00	Prime Farmland Soils
Hatch	Department of Agricultural Resources/APR	210	8.2, 8.3, 8.4, 8.5, 8.6	10.07	Prime Farmland Soils
Lilly	Department of Agricultural Resources/APR	213	15	43.85	Prime Farmland Soils
French	Franklin Land Trust/APR	213	4, 17	73.00	Prime Farmland Soils
Hatch	Mount Grace Land Conservation Trust/CR	214	5.1	12.10	Prime Farmland Soils
Giknis	Department of Agricultural Resources/APR	228	6	41.00	Prime Farmland Soils
Total				**292.02**	

Source: Community Development Plan for the Town of Gill, 2004; Town of Gill Assessor's Maps, 1999; Town of Gill Tax List, 2003; Richard French, personal communication, 2005.
*Note: CR = Conservation Restriction; APR = Agricultural Preservation Restriction

Approximately 14.4 percent of Gill's farm acreage with some level of protection includes land "protected" by the Agricultural Preservation Restriction (APR) Program. These restrictions are overseen by the Massachusetts Department of Agricultural Resources.

Information on "protected" farmland in Gill is included in Table 5-2. This land is in the Residential/Agricultural zoning district.

Land enrolled in Chapter 61A is considered to be "temporarily protected." Approximately 85.6 percent of Gill's farmland, including parcels with prime farmland soils, falls into this category (*see Table 5-3*). In some cases, farmland enrolled in Chapter 61A abuts "protected" land. Conversion of even a small percentage of this land to residential use could affect the viability of farming on the remainder. Location of new homes in proximity to active agricultural operations can often result in conflict between new residents and farmers over the noise, dust, and odors that are part of normal agricultural practices. Increased commuter traffic on roads in agricultural areas can also make it difficult for farmers to move their equipment between fields.

Table 5-3: Privately Owned Agricultural Land Enrolled in Chapter 61A in Gill

Owner	Assessor's Map	Assessor's Lot	Acres
Giknis	103	5	50.00
Urgiel	203	5.2, 5.3, 5.11, 5.12	105.96
Urgiel	204	2, 3.1, 6,	89.70
Flagg	204	8, 13.2, 14	331.00
Cutting	206	1	77.95
Matthews	206	28.21	34.03
Cutting	207	1.1, 1.2, 4.1, 4.2	143.60
Hastings	207	5, 6.1	123.00
McComb	208	11.1	11.57
Schechterle	209	3.1, 3.2, 5	96.45
Flagg	211	10.1	40.00
Zak	211	22	43.00
Johnson	212	15	13.47
Brown	212	18	31.00
Zak	212	8, 20, 22	230.80
Zak	213	5, 6	11.60
Remillard	215	24	44.00
Berniche	216	4	79.00
Keech	216	14	45.00
Storrow	219	7	28.00
French	219	9	30.00
Wallace	220	9	33.00
Caron	226	21	41.00
Total			**1,733.13**

Source: Community Development Plan for the Town of Gill, 2004; Town of Gill Assessor's Maps, 1999; Town of Gill Tax List, 2003.

Much of the land enrolled in Chapter 61A also abuts rivers and streams. While agriculture can have negative impacts on water quality, these impacts can be reduced or

avoided through the use of best management practices. When best management practices are observed, agriculture is compatible with watershed protection, because it keeps the land open, while development results in conversion of land to impervious surfaces, with negative impacts on water quality.

Agricultural lands enrolled in the Chapter 61A program offer much value to the town, even if the farmlands are only "temporarily protected." Firstly, the agricultural parcels often contain prime farmland soils, which should be preserved for continuing use. These privately owned open spaces also contribute to the town's tax base and generate revenue, employment, and food products. In addition, some landowners may allow access to their property for recreational purposes, like hiking or snowmobiling. Most Chapter 61A landowners take pride in their land, while practicing good stewardship. They help to define a sense of place for Gill and contribute to community stability over time.

A.2 Privately Owned Forested Land

Approximately 27.6 percent of Gill's open space with some level of protection is privately owned forest in one of the Chapter 61 tax abatement programs, accounting for approximately 1,084 acres, or 11.4 percent of the town's total land area. There are also eight conservation restrictions in town protecting approximately 266 acres of forest. The conservation restrictions are held by the Mount Grace Land Conservation Trust, The Nature Conservancy and the Massachusetts Department of Conservation and Recreation.

Table 5-4: Privately Owned Forested Land Protected from Development

Owner/Holder of Conservation Restriction	Assessor's Map	Assessor's Lot	Acres
French/Mount Grace Land Conservation Trust	217	22	10.50
French/Dept. of Conservation and Recreation (DCR)	218	4	103.00
French/(DCR)	219	14	15.00
Gallagher & Bathory/Ct. River Watershed Council and DCR	220	5/10	105.00
French/DCR	221	11.1	13.50
French/Mount Grace Land Conservation Trust	227	3	17.0
Plante/The Nature Conservancy	227	13.2	2.25
Total			**226.25**

Source: Community Development Plan for the Town of Gill, 2004; Town of Gill Assessor's Maps, 1999; Town of Gill Tax List, 2003; The Nature Conservancy, personal correspondence, 2004; Ct. River Watershed Council, personal correspondence, 2004; Mount Grace Land Conservation Trust, personal communication, 2004; Richard French, personal communication, 2005.

Privately owned forestland with temporary protection from development is shown in Tables 5-5 and 5-6. Approximately 62.7 percent of privately owned forest with temporary protection in Gill is enrolled in the Chapter 61 tax program for Forestry, while 37.3 percent is enrolled in the Chapter 61B program for Recreational Open Space.

Table 5-5: Privately Owned Forestlands with Temporary Protection from Development Enrolled in the Ch. 61 Forestland in Gill

Owner	Assessor's Map	Assessor's Lot	Acres
Streibel	205	10	50.00
French	207	2, 3,	52.00
Sandri	208	1, 4, 6, 7	99.00
Georgian	217	37	77.00
Parsons	218	3.1	67.80
Jenkins	218	5	83.30
French	219	14	19.00
French	222	5.2, 11	54.50
Hisz	222	14	81.00
Stotz	223	7, 12	25.70
Stotz	224	45	31.00
Cowls	227	12	40.00
Total			**680.30**

Source: Community Development Plan for the Town of Gill, 2004; Town of Gill Assessor's Maps, 1999; Town of Gill Tax List, 2003.

All of the parcels in Tables 5-5 and 5-6 are temporarily protected in the Ch.61 Forestland and the Ch.61B Recreational Open Space Classification and Taxation Programs and the degree of protection of these parcels is short term. There are no public grants awarded as a result of the Program, however, the owner agrees not to change the land's use for ten years while paying reduced property taxes during that time period. These lands are located in the Residential/Agricultural zoning district.

Privately owned forestland offers many values to the community and is an important resource for several reasons. First, many forestlands are large parcels with a low degree of fragmentation, so wildlife and plant habitats are preserved. When these forestlands are protected from development, they help to protect and provide clean water, air, and healthy wildlife populations. Forest soils have a high infiltration capacity, so they absorb moisture and permit very little surface runoff. Once absorbed, water is released gradually so flooding is reduced during large rain events and streamflow is maintained during low water months. Forests recycle nutrients, so the nutrients do not pass into waterways, and water quality is preserved. Because forest soils are absorptive, soil erosion is reduced and fish habitat is preserved. Chapter 61 lands are managed for forest products, which result in employment of loggers, foresters, and local mill workers, income for landowners, and the availability of locally grown wood for flooring, furniture making and firewood. Many forested lands also provide recreational value for Gill residents. The Chapter 61 forests help to preserve the character of the wooded landscape prized in Gill.

Table 5-6: Privately Owned Forestlands with Temporary Protection from Development Enrolled in the Ch. 61 B Recreational Open Space Taxation Program in Gill

Owner	Assessor's Map	Assessor's Lot	Acres
Matthews	210	14	19.0
Holmes	214	3.1	37.0
Grant	215	6	20.0
Mackin	217	35, 36	102.0
Girard	219	10, 12	48.0
Giknis	221	5, 6	36.3
Giknis	222	1	26.0
Conway	224	34, 35	16.0
Giknis	226	22	80.0
Pratt	227	17.112	7.7
Chase	227	9, 16.1	12.2
Total			**404.2**

Source: Community Development Plan for the Town of Gill, 2004; Town of Gill Assessor's Maps, 1999; Town of Gill Tax List, 2003.

Other privately owned land in Gill that has temporary protection from development is land owned by Northeast Utilities. Northeast Utilities currently has licenses to operate the Turners Falls and Northfield Mountain Hydroelectric Projects on the Connecticut River. These projects affect the Turners Falls Pool, which borders the town of Gill. The Federal Regulatory Energy Commission (FERC) licenses for the operations have been granted for fifty years and have fifteen years remaining.

The FERC license agreement requires that Northeast Utilities (NU) obtain flowage rights to the land bordering the river. Flowage rights are similar to land easements, which allow for the effects of a project dam backwatering onto the property of others. The company is responsible for minimization and prevention of soil erosion and other adverse effects associated with the hydroelectric projects within the flowage boundary. The company currently owns a number of parcels bordering the river and has obtained the necessary flowage rights for the remainder of the flowage boundary. NU has implemented an Erosion Control Plan to manage these properties. This plan outlines the repair and preventive measures, which will be undertaken while NU operates the projects.

The primary purpose of the management plan is riverbank stabilization and erosion control, however the company has also made a commitment to provide recreation and environmental education facilities in the areas impacted by the projects to protect the scenic and historical assets as well as wildlife species habitat. These are located in Gill and the bordering towns of Northfield and Turners Falls.

The property owned by NU is considered temporarily protected as open space for the duration of the project license. The company owns ten parcels totaling 232.9 acres (*see Table 5-7*).

Table 5-7: Other Privately Owned Land with Temporary Protection from Development in the Town of Gill

Owner/Manager	Assessor's Map	Assessor's Lot	Acres
Northeast Utilities	101	58, 89, 118, 119	15.8
Northeast Utilities	102	26	2.1
Northeast Utilities	103	17	96.0
Northeast Utilities	203	6	21.0
Northeast Utilities	204	7	18.0
Northeast Utilities	228	9	34.0
Northeast Utilities	229	5	46.0
Total			**232.9**

Source: Open Space and Recreation Planning in Gill, Mass., 2000.

B. PUBLICLY AND QUASI-PUBLICLY OWNED OPEN SPACE PARCELS

Publicly owned and quasi-publicly owned protected open space equals approximately 14 percent of all of the open space that has some level of protection in town. The following inventory includes those parcels that are owned by the Commonwealth of Massachusetts, the Town of Gill, and state conservation organizations.

B.1 Publicly Owned Open Space

There are 554 acres of publicly and quasi-publicly owned open space in Gill, accounting for about 14 percent of the total amount of open space with some level of protection from development and 5.8 percent of the town's land area. In Gill, publicly owned open space includes land owned by the Commonwealth of Massachusetts and the Town of Gill. These lands are described in Tables 5-8, 5-9 and 5-10. For the purposes of this section, the town's publicly owned cemeteries are included in this category. Cemeteries are listed in Table 5-10. Most of the publicly owned open space in Gill is forested or occupied by cemeteries.

Table 5-8: Publicly Owned State Land Protected from Development in Gill

Property Manager	Site Name	Acres	Map	Lot	Current Use
Department of Conservation and Recreation (DCR)	Connecticut River Greenway State Park (CRGSP)	259.8	220	4, 11, 13	Conservation and Recreation
DCR	CRGSP	57.4	227	9, 10	Conservation and Recreation
DCR	CRGSP	14.2	228	1	Conservation and Recreation
Department of Fish and Game	Barton Cove Boat Ramp	3.8	102	28	State Boat Ramp
Total		**335.2**			

Source: Community Development Plan for the Town of Gill, 2004; Town of Gill Assessor's Maps, 1999; Town of Gill Tax List, 2003; Dept. of Conservation and Recreation, personal communication, 2004.

The Massachusetts Department of Conservation and Recreation (DCR) owns six parcels in the Town of Gill totaling 331.4 acres. One parcel is south of Rte. 2 on the Connecticut River below the French King Bridge. The remaining parcel abuts The Nature Conservancy property off of Pisgah Mountain Road. These parcels are owned outright by the DCR and protected under the Office of Natural Resources Greenways and Trails program.

The Department of Fish and Game also manages a public boat ramp in Bartons Cove. This boat ramp is regulated for public access according to the state's regulations. The parcel is 3.8 acres and abuts the land owned by Northeast Utilities and, the Franklin County Boat Club

Table 5-9: Town-owned Land Protected from Development in Gill

Owner/Property Manager	Site Name	Acres	Assessor's Map	Assessor's Lot	Use
Town of Gill/Conservation Commission	Stacy's Ferry	0.91	227	10	Potential Boat Landing on the Connecticut River
Total		**0.91**			

Source: Community Development Plan for the Town of Gill, 2004; Town of Gill Assessor's Maps, 1999; Town of Gill Tax List, 2003.

The Town of Gill owns a small parcel of land that is less than an acre in size off the Connecticut River at a site associated with the historic Stacy's Ferry. The land was transferred to the Gill Conservation Commission, and is therefore protected from development under Article 97 of the amendments to the Massachusetts State Constitution. The land is in poor condition now, often used as a brush dump. The recreation value for the site could be high if the town was to invest in the development of a boat ramp or other facility that would improve the access to the Connecticut River from River Road.

Table 5-10: Town-owned Land with Limited Protection from Development in Gill

Owner/Property Manager	Site Name	Acres	Assessor's Map	Assessor's Lot	Use
Town of Gill	Boyle Road Elementary School	12.5	211	5	Elementary School
Town of Gill	Boyle Road Nature Area	6.6	211	6	Education
Total		**19.1**			

Source: Community Development Plan for the Town of Gill, 2004; Town of Gill Assessor's Maps, 1999; Town of Gill Tax List, 2003.

The Town of Gill owns 19 acres of open space, which have limited protection (*see Table 5-10*). The parcels comprise the Boyle Road Elementary School and Nature Study Area located off of Boyle Road and mostly west of Ashuela Brook, which runs through the nature area in back of the school. These parcels are under the authority of the Select Board and are therefore considered to have limited protection from development. If residents wanted to sell town land for development, the Select Board or a Town Meeting vote could provide the authority. If the Conservation Commission held the land, it would take a majority vote by the Massachusetts State Legislature to convert open space to a non-conservation use. Some of these open spaces may be set aside for municipal uses like schools, parks, or historic sites.

It is not unusual for a community to set aside land for future expansion of schools, sports fields, police and fire stations, and drinking water supplies. Open space planned for these purposes might be used as open space today and placed under the authority of the Select Board. It may also be sensible to place town-owned land that clearly contains wetlands or wildlife habitat, but which does not provide for easy development, under the authority and protection of the Conservation Commission.

Table 5-11 lists the cemeteries in Gill that are owned by the town or by an association and are protected from development. Most cemeteries represent well-maintained open space areas that are sometimes appropriate for walking and bird watching.

Table 5-11: Cemeteries in Gill

Owner/Property Manager	Site Name	Assessor's Lot	Assessor's Map	Acres
Town of Gill	North Cemetery	204	15	1.80
Town of Gill	Town of Gill Cemetery	212	1	0.71
Town of Gill	Town of Gill Cemetery	214	11	0.47
Riverside Cemetery Assn.	Riverside Cemetery	224	6	1.60
Riverside Cemetery Assn.	Riverside Cemetery	224	7	2.80
Total				**7.38**

Source: Community Development Plan for the Town of Gill, 2004; Town of Gill Assessor's Maps, 1999; Town of Gill Tax List, 2003.

B.2 Quasi-Publicly Owned Open Space

In the Town of Gill there are 191.73 acres of quasi-publicly owned open space accounting for 5 percent of the total amount of open space with some level of protection and 2 percent of the town's land area. Quasi-publicly owned land in Gill includes land owned by conservation organizations such as the Mount Grace Land Conservation Trust, the Connecticut River Watershed Council and The Nature Conservancy. The Nature Conservancy owns a number of parcels totaling 135.55 acres for which a conservation restriction is held by the Mass. Dept. of Conservation and Recreation.

Table 5-12: Quasi-Publicly Owned Forested Land Protected from Development

Owner	Assessor's Map	Assessor's Lot	Acres
Mount Grace Land Conservation Trust	209	6	5.60
Ct. River Watershed Council	223	9	7.40
The Nature Conservancy	227	10,11,14,16.2	43.18
The Nature Conservancy/DCR*	227	13.1, 15	63.85
The Nature Conservancy/DCR*	228	8, 10	71.70
Total			**191.73**

Source: Community Development Plan for the Town of Gill, 2004; Town of Gill Assessor's Maps, 1999; Town of Gill Tax List, 2003; The Nature Conservancy, personal correspondence, 2004; Ct. River Watershed Council, personal correspondence, 2004; Mount Grace Land Conservation Trust, personal communication, 2004; Dept. of Conservation and Recreation, personal communication; 2004. *Note: Conservation Restriction held by DCR.

Town of Gill

Open Space and Recreation Plan

Open Space and Wildlife Habitat

Legend

- Town Line
- Rail Lines
- Roads
- Streams and Rivers
- Water
- National Wetlands Inventory wetland

Open Space

- Open Space with Permanent Protection
- Open Space with Limited Protection

Open Space with Temporary Protection

- Chapter 61A (Agriculture)
- Chapter 61B (Recreation)
- Chapter 61 (Forestry)

Natural Heritage and Endangered Species data

- Estimated Habitats of Rare Wildlife (NHESP)
- Priority Habitats of Rare Species (NHESP)
- NHESP BioMap Supporting Natural Landscape
- NHESP Biomap Core Habitat

Map Sources:

Map produced by The Franklin Regional Council of Governments Planning Department. GIS data sources include the FRCOG Planning Department, the Massachusetts Highway Department and MassGIS. Digital data obtained from MassGIS represent the efforts of the Massachusetts Executive Office of Environmental Affairs and its agencies to record information from the sources cited in the associated documentation. EOEA maintains an ongoing program to record and correct errors in the GIS data that are brought to its attention. EOEA makes no claims as to the reliability of the GIS data or as to the implied validity of any uses of the GIS data. EOEA maintains records regarding all methods used to collect and process these digital data and will provide this information on request. Executive Office of Environmental Affairs, MassGIS EOEA Data Center, 251 Causeway Street, Suite 900, Boston, MA, 617-626-1000.

Road data provided by Massachusetts Highway Department. Town line, rail line, open space (Chapter 61 and Protected Open Space), National Wetlands Inventory, river, stream, and pond data provided by MassGIS.

Note: Depicted boundaries are a approximate and are intended for planning purposes only. Portions of the source data were obtained from 1:100,000 scale maps, therefore the accuracy of the line work on this map is +/- 100 feet.

FRANKLIN REGIONAL COUNCIL OF GOVERNMENTS
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Town of Gill
Franklin County, Massachusetts

January 24, 2005

SECTION 6

COMMUNITY GOALS

A. DESCRIPTION OF PROCESS

The Town of Gill's open space and recreation goal statement was developed through the following planning process:

- In 2000, an open space and recreation survey was developed by a team of graduate students from the Department of Landscape Architecture and Regional Planning at the University of Massachusetts (UMass) under the direction of the Town of Gill Conservation Commission. This survey was mailed to approximately 500 households in Gill (*see Appendix A for a copy of the survey*). Although the responses may not reflect the opinions of all residents, they do represent a significant source of community input, which was used to develop the preliminary draft Section 8-Goals and Objectives.

- The UMass team, under the direction of the Conservation Commission, developed draft sections of the town's Open Space and Recreation Plan with input from the Gill Open Space Advisory Committee. This Committee was comprised of twelve residents and included community leaders, farmers, business people, and members of the Gill Historical Commission, and the Planning Board. There were also representatives from Northfield Mount Hermon School and Northeast Utilities. The planning process used several methods for involving public participation in addition to the Advisory Committee:
    - The results of the 2000 Open Space and Recreation Planning Survey were used as the basis for the development of the goal statement as well as the goals and objectives.
    - Community experts were consulted regarding their particular area of expertise and included the town assessor, a local forester, and the building and grounds manager from the Northfield Mount Hermon School.
    - The Gill Draft Open Space and Recreation Plan included Sections 1-7, but did not include Goals and Objectives, an Action Plan, and GIS maps. Between 2002 and 2003, the Franklin Regional Council of Governments helped the Town of Gill develop their Executive Order 418 Community Development Plan which included most of the required GIS maps for a Division of Conservation Services-approved Open Space and Recreation Plan.
    - In 2004, FRCOG was awarded a grant by the Executive Office of Environmental Affairs to develop Open Space and Recreation Plans in the Northern Reach of the Connecticut River for Gill and Northfield. FRCOG

updated the 2000 Open Space and Recreation Plan with information from the recently completed Community Development Plan and revised the open space mapping information. The Open Space Advisory Committee reconvened in 2005 to develop the goals and objectives, the Five-Year Action Plan, and to present the Plan at a public forum on May 19, 2005.

B. STATEMENT OF OPEN SPACE AND RECREATIONAL GOALS

Gill residents appreciate the town's small town rural character and agrarian heritage. They value the town's diverse landscapes, which include a mix of working farms, forests, rivers and streams, wetlands, and floodplain corridors. The sentiment most strongly voiced by citizens of Gill throughout the planning process was that they love their town, and they want to preserve its small town rural character and its agrarian heritage. They wish to avoid the pitfalls of contemporary suburban development, and they want to achieve this goal by limiting further development, and by protecting Gill's farmland, forests and historical sites. Here, it is best to let the residents speak for themselves:

> "If towns like Gill do not come up with strong plans for protecting open space, the developers will surely turn it into just another collection of subdivisions and strip malls... I hope that the town does not go down the path to Anyplace, USA."

> "Over the years, we have lost a lot of prime agricultural land to commercial and residential use. It won't be long before we are a big suburb of what?"

> "I'd hate to see the farmland sold off and subdivided to a developer. Land should be kept as farmland. That is the beauty of Gill. Also forested acreage should be protected for wildlife. Keep Gill beautiful!"

Residents who responded to the Open Space and Recreation Survey and participated in the process of developing this plan have a vision for the future of Gill's natural, recreational, and historical resources. In this ideal world, the town's active farmland and large blocks of forest will be preserved as a result of town purchase as well as cooperative efforts between private landowners, the Gill Conservation Commission, Gill Planning Board, and local private non-profit organizations like Franklin Land Trust and Mount Grace Land Conservation Trust. Due to the methods used, these lands will mostly remain in private hands and control, and continue to contribute property taxes in support of the town. Historical landscapes and the town's scenic areas will also be preserved.

Residents of all ages and abilities will continue to enjoy access to the Northfield Mount Hermon School's facilities, as well as the Gill School Playground and Barton Cove. A town-wide system of well-maintained trails for non-motorized activities, a town swimming area (other than the Connecticut River), and a town park with playground, picnic, and community gathering space will also be enjoyed.

SECTION 7

ANALYSIS OF NEEDS

The Gill Open Space and Recreation Plan incorporates the inventory of all the land-based natural, scenic, and cultural resources that are available in town (Section 4), identifies the areas that contain these resources (Section 5), and based on the community's general goals (Section 6), makes comparisons between the supply of resources and the demand (Section 7). In the following subsection, A. Summary of Natural Resource Protection Needs, the most important environmental issues are highlighted. In B. Summary of Community's Needs, the recreation and open space needs of the residents are discussed. Finally, in C. Management Needs, the obstacles to the effective resolution of these needs are addressed.

A. SUMMARY OF NATURAL RESOURCE PROTECTION NEEDS

Gill residents value their town's natural environment, farmland, forests, diverse wildlife habitats, clean drinking water and air, and scenic areas. According to the 2000 Open Space and Recreation Planning Survey, survey respondents weighted the following as having nearly equal importance for preservation: rivers and streams, scenic areas, wildlife habitat, forests, agricultural land, floodplains, historical landscapes, and wetlands.

The previous sections examined the variety of these natural and cultural resources, which provide Gill its distinctive rural character. In addition, public input from the survey helped determine what resources are of priority concern to Gill's residents. The follow section outlines the key natural resource protection needs. Each resource need is followed by a recommended strategy. The strategies are reflected in the Goals and Objectives and the Action Plan.

Areas of Conservation Interest

The Environmental Inventory and Analysis includes a list of areas of conservation interest in Gill. Prioritizing areas on this list would be a helpful step for determining a strategy for their protection.

> Recommendation 1: This list should be ranked according to priority and should include strategic plans for their protection. It is important that private landholders and local residents be involved in this process.

Farmland and Forests

Farmland and forests are scattered throughout most of Gill and the roadside views of these areas are a scenic asset to the town. Farmland and forests provides multiple public benefits to Gill residents. The support of local farms affords Gill residents access to fresh vegetables, fruits, and dairy products, as well as the opportunity to buy forest products grown by neighbors. Farms also provide passive recreational value as roadside views and scenic vistas. Forests cover sub-watershed slopes and help replenish streams and wetlands over time. Forests provide habitat for wildlife and can provide public and private landowners periodic income. In addition, local residents value these areas for their passive recreational value for, although on private land, many multi-purpose trail networks traverse sections of these properties.

Since many of these areas are actively logged and farmed, the losses of these open spaces may not appear to be a real threat. However, with Gill's aging farming community, it is not known if subsequent generations will be taking over family farms. The Town may lose these areas to development. While these lands are privately held, their protection is reliant on the willingness of the owner to make the decision to protect them with an agricultural preservation restriction (APR) or a conservation restriction (CR). At present eleven parcels are protected with an APR, many of these in the last ten years. However, there are a significant number of parcels, which are temporarily protected from development by having Chapter 61A tax status. As town residents have indicated in the survey that they support private and local efforts to protect open space, there appears to be a reason to encourage more private landowners to consider an APR or CR on their land.

Recommendation 2: The Town should continue to encourage private conservation efforts. Outreach efforts could include informational meetings and distribution of publications summarizing the options.

Recommendation 3: Coinciding with outreach, the Town should make an effort to address landowners' immediate concerns about their land. These concerns relate to the physical upkeep of the land, which may be impacted by erosion or flooding or other natural or man-made factors. In addition, local landowners may benefit from increased promotion of local grown products. Ultimately the financial success of these lands will have a significant influence on conservation decisions as well as their contribution to the welfare of the community as a whole.

Wildlife and Habitat Preservation

As outlined in the Environmental Inventory, Gill possesses a rich array of plant and animal species. These species are valued for their ecological significance as well as the wildlife viewing opportunities they offer to local residents and visitors to the Town. At this time, there are a few areas in Town, which are devoted to conservation of species

habitat. These include Barton's Island and Bennett Meadow Wildlife Management Area, which are owned and managed by Northeast Utilities, and the Stacy's Mountain land, which is owned by The Nature Conservancy. While this is an important start, there are other areas which contain important species habitat and which are not yet protected.

> Recommendation 4: The Town should undertake a comprehensive biological inventory of wildlife species and habitats. Such an inventory would be helpful for prioritizing areas of conservation interest. In addition, a biological inventory can be used to gauge the environmental impact of land use changes.

The Massachusetts Natural Heritage and Endangered Species Program provides protection for vernal pools that have been certified according to specific guidelines. Currently, there are three certified vernal pools in Gill, but there are many more that have not yet been certified. Certifying vernal pools is important for wildlife habitat protection, particularly for rare and endangered species, and for groundwater quality. As these pools are seasonal in occurrence, there are limited times during the year when they can be located and identified.

> Recommendation 4: An inventory of vernal pools is necessary to ensure their protection. A good method to carry out such a project would be to involve Gill's youth. Elementary students, Northfield Mount Hermon students, and nature study groups can gain important knowledge of wooded wetlands while providing an important service to the community at the same time. The involvement of the Town's youth in this project is also important to include them in the Open Space and Recreation planning process.

Scenic Corridors

Any visitor or explorer of Gill is likely to take notice of the scenic views of all varieties. These include rolling farmlands, hilltop vistas, waterways, abundant forests, and historic sites. These areas provide opportunities to observe wildlife, explore Town's geologic and cultural history, or to simply enjoy the scenery for its own sake. Many of these scenic sites will disappear if open space is not protected. The Town would benefit from efforts to identify scenic corridors along roadways, waterways, or other known trails and overlook points.

> Recommendation 5: Identifying significant scenic corridors or viewsheds would help to prioritize areas for protection and would assist in providing linkages between various protected parcels around the Town.

Water Resources

It is not easy to arrive in Gill from any of the main transportation routes without encountering water. Not only is Gill bordered by water on three sides, but it also has numerous small streams, which run through it along with various wetlands, vernal pools, and ponds. Protection of Gill's water resources is important for a number of reasons. First, water quality is of concern particularly as many of the homes in Gill rely on well supplies. Second, many valuable wildlife species rely on water resources for habitat. Third, there are a number of historic sites such as former mill sites and ferry crossings on some of the minor waterways in the town. Fourth, waterways provide numerous recreational opportunities.

Recommendation 6: The Town will need to determine a strategy for addressing each of these factors and determine how to best balance their use. This will play a key role in guiding future land-use decisions.

Balancing Development and Conservation: Planned vs. Unplanned Development

The challenge for many rural towns in the Commonwealth is to grow in population without diminishing natural resources like clean drinking water and contiguous forests beyond the capacity of local ecosystems. Although exact capacity thresholds for water supplies and forest habitat acreage are not yet known, most Gill residents would probably agree that poorly planned development can detract from their town's rural character and erode the quality of the environment over time.

Of course, some types of residential, commercial, and industrial development can be very beneficial to a community especially if it is consistent with a town plan that balances growth with natural resource protection. Well-planned economic development, for example, could help provide jobs for low and moderate-income households and lower the expense per household for community services. In comparison, poorly planned economic development could result in higher costs than the revenues it generated via property taxes.

Promoting traditional economic development that attracts new residents to fill created jobs may not be the best strategy for Gill. Generally, as more families move to Gill, a greater level of municipal services would be required to serve the growing population, including schools and road infrastructure. Based on regional trends, the average residential tax bill will likely rise as the population of Gill increases because service costs are typically greater than the revenues generated from residential property. In addition, residential development could reduce the number of acres in agricultural uses over time since active farmland often contains the most developable soils.

Not all development is undesirable, nor could the town over-control land development, even if this was the consensus of residents and officials. Most residents understand the

need for balance and respect the rights of property owners, including the right to develop land. Through zoning and non-zoning techniques the town could provide incentives to developers so that development could contribute as much as possible to the residents' shared vision for their town. For example, by encouraging smaller lot sizes near historic village centers, forest or farmland could remain undeveloped.

Another way the town could promote and preserve active farmland, help stabilize local residential property tax bills, and create jobs, is by seeking to increase the market value of local agricultural and forest-based goods and services. Increasing revenue to farms and forest landowners via direct sales might create a small number of local jobs. A town with a greater number of its residents working locally feels different than a bedroom community. Local workers can support stores and other services with their purchases.

In summary, one of the most important natural resource needs is for a continuing discussion on how residents want their town to develop over time, and which areas should be protected from development so that water, forests, habitat, and farmland can be conserved for the next year, and the next 100 years.

B. SUMMARY OF COMMUNITY NEEDS

This section will outline the recreational needs of local residents as determined from the survey tabulation, public meeting and input from the Open Space Advisory Committee.

Recreational Areas

Responses to the survey identified recreational facilities that are needed in the Town of Gill. Among those identified were the development and maintenance of a town-wide trail system. A number of residents indicated that they enjoy exploring areas of town informal trail networks along private and public parcels. The survey responses also indicated a support for local efforts to protect and maintain recreational areas. At present there are no local guides on Town trail systems or recreational facilities, however.

Recommendation 7: Cooperation between the Open Space Advisory Committee and the Gill Recreation Committee is necessary to determine the best method for addressing these recreational needs. This effort should include an evaluation of the existing municipal properties and ways to maximize their recreational and conservation potential. In addition, the Advisory Committee should consider including the publication of a guide on recreational resources including a list of local trails, access rights, use restrictions, and private facilities available for public use in the 5-Year Action Plan.

Recommendation 8: The town should continue to cooperate with other entities that provide recreational facilities used by local residents. These include Northeast

Utilities, Northfield Mount Hermon, The Nature Conservancy, private sporting clubs, and the Department of Conservation and Recreation. Good communication will help to ensure that these properties are managed in a way that suits the needs of all parties involved. The inclusion of representatives from these organizations on the Open Space Advisory Committee has been an effective way to ensure that the Plan reflects a shared community vision and this practice should be continued.

Public Awareness

Public involvement in all aspects of open space planning is important for ensuring that the community's needs are addressed. In addition, a Plan that is a product of public participation has more likelihood of success when it is implemented. For these reasons, the Town should continue to offer education opportunities and outreach programs. These programs should include ways for town residents and private landholders to cooperate on strategies to protect open spaces.

Recommendation 9: One way to ensure continued public involvement would be to form committees to oversee various aspects of the 5-Year Action Plan. As already mentioned, increasing youth involvement in current and future open space planning initiatives would help ensure long-term success.

C. MANAGEMENT NEEDS

This section addresses opportunities for improvement in the ways open space and recreation areas are managed and maintained in the Town of Gill.

Town-wide Cooperation

In a community such as Gill where a number of separate entities own large land parcels every effort should be made toward cooperation on open space planning.

Recommendation 10: The Town should work with local land trusts to coordinate strategies for land acquisition and management that are not contradictory. Such an effort could build linkages between open space parcels for the creation of a town greenway. In particular, existing protected parcels along the river and adjoining open land hold high potential for such a linkage.

Communication between other town boards and committees for formulation and implementation of Open Space Planning Action Steps is essential for effective land-use planning in all levels of the town management.

Recommendation 11: Other Town bodies that should be included are the Department of Public Works, Recreation Committee, School Boards, the Historical Commission, and the Planning Board.

Regional Partnership Opportunities

Gill residents have voiced their desire to preserve open space, to protect critical wildlife habitat, water resources and to increase recreational opportunities. All of these objectives can be achieved by using a Greenways approach to Open Space Protection and Recreation Planning.

Greenways can be described as "linear parks" that connect important natural, historic and recreation sites. The corridors that link these important areas of town can be established along roads, utility or railroad rights of way, waterways or via public or private open land. The key to developing a greenway is to CONNECT what you already have via existing or potential routes. Greenways do not necessarily require a huge capital investment. Often they simply require getting permission for access from landowners between two points of interest.

Recommendation 12: The first step in developing a greenway is to identify key areas of ecological, cultural and recreational value. This Open Space and Recreation Plan has done just that. The next step is to strategize about how to connect these areas.

Numerous trails and greenway initiatives are underway in the region. Some are in the earliest planning stages, while others are partially constructed. Here are a few of the projects with which Gill could potentially connect:

- A New England Greenway Vision Plan
- Statewide Greenway Plan
- The Norwottuck Network
- Franklin County Bikeway

Land Management Planner

It is important that plans are not only agreed upon but also implemented and regularly referenced over the long-term. While local volunteer efforts are key and benefit any planning initiatives, this Town would benefit from a permanent local planner to address land-use issues.

Recommendation 13: While the town may lack funds to hire a permanent planner for this position, a possible solution would be a cooperative effort with neighboring towns to hire a land use planner to oversee implementation of local open space and land use plans.

SECTION 8

GOALS AND OBJECTIVES

The following goals and objectives were formulated from the results of the 2000 Gill Open Space and Recreation Planning Survey. The goals and objectives have been reviewed and modified through the public meetings of the Open Space Advisory Committee, the public forum process, and associated public comment.

A. Goal: Ensure that the Town of Gill maintains or improves the integrity of streams and wetlands, wildlife habitats, farms and forestlands and other agricultural resources, the diversity and integrity of native fauna and flora, drinking water, clean air, scenic views, geological resources, and historical and archaeological sites, structures, locations, and landscapes ("natural and cultural resources") through the conservation of locally important natural and open space resources.

Objectives:

1. Prioritize open space areas in Gill with significant "natural and cultural resources" so that town officials and residents can act efficiently when a parcel of land becomes available for protection.

2. Encourage landowners interested in protecting their land from development to work with Franklin Land Trust, Mount Grace Land Conservation Trust, and state and federal conservation agencies or donate the land to the town. Encourage regional land trusts to provide land protection education programs for townspeople including estate planning and land protection options.

3. Be responsive to the needs of farm and forest landowners and other agricultural businesses in town. Consider ways that the town might support agricultural operations as they would other commercial or industrial business in town.

4. Use the annual Biodiversity Days as a means for building a comprehensive biological inventory in Gill using community volunteers. Consider how to improve upon existing information provided by the Massachusetts Natural Heritage Endangered Species Program's BioMap and Living Waters map showing core habitat areas and supporting natural landscapes.

5. Support the training of local volunteers in vernal pool certification.

6. Encourage the Town of Gill to accept more donated conservation land and conservation restrictions from willing landowners that protect valued "natural and cultural resources".

7. Encourage landowners to consider donating their land to the Town of Gill for the conservation of "natural and cultural" resources.

8. Explore revisions to Gill's zoning bylaw that would result in greater protection of valued "natural and cultural resources" and, which could also help to ensure that any land development provides benefits that reflect the town's natural resource conservation goals.

9. Explore the potential for developing a conservation land trust or land fund for Gill.

Goal B: Ensure that Gill maintains and improves the quality and accessibility of all of its recreational facilities and programming.

Objectives:

1. Evaluate the needs of all municipal recreational facilities and properties.

2. Explore the feasibility of developing a town swimming area, tennis courts, soccer fields, town park, town forest, and other recreational facilities and uses that are in demand.

3. Promote existing and future recreational facilities and services by developing a guide to facilities, programs, and trail systems in the town.

4. Continue to cooperate with private entities in town such as Northeast Utilities, Gill-Montague School District, The Nature Conservancy, and Northfield Mount Hermon School that provide recreational facilities used by Gill residents.

5. Support the development of multi-use and limited-use trail systems, which can be accessed from publicly owned land or private lands with permission.

6. Identify recreational needs of residents of all ages and develop new programs and facilities as appropriate.

C. Goal: Ensure that Gill residents and town officials successfully work together, and with others, to guide the conservation of open space and recreation resources.

Objectives:

1. Cause the town to constitute a permanent Open Space Advisory Committee that would have the responsibility of implementing the 2005 Gill Open Space and Recreation Plan.

2. Explore opportunities to partner with local, regional, and statewide land conservation organizations and agencies to better leverage limited town dollars and volunteer hours towards the conservation of priority resource areas.

3. Explore opportunities for partnering with the open space committees of surrounding towns on land conservation projects that protect landscape-scale resources like contiguous forests, aquifers, core habitat areas, and trail systems.

4. Explore the creation of a shared part-time planner position that would address open space planning and other land use issues in Gill and in one or more surrounding towns.

SECTION 9

FIVE-YEAR ACTION PLAN

The Five-Year Action Plan is intended to provide concrete steps towards implementing the objectives of the Open Space and Recreation Plan. The Open Space Advisory Committee developed the draft action steps outlined below.

The objectives are listed in the far left column of Table 9-1 in the same order as they appear in Section 8. They are followed in the same row by recommended actions, the board or group responsible for implementation, and start dates. By implementing the recommended actions, each of the objectives will begin to be realized.

Successful implementation will require the participation of existing town boards, committees and staff, including but not limited to the Open Space Advisory Committee, Select Board, Planning Board, Board of Assessors, Finance Committee, and others.

Accomplishing the actions identified in this section will require time and commitment from dedicated volunteers. Where money is required, it may be sought from state and federal governmental agencies, private non-profit conservation agencies, charitable foundations, and individual donations in addition to municipal funds. A broad base of community support for the Open Space and Recreation Plan should facilitate fundraising to achieve its goals and objectives.

Table 9-1: Recommended Action Steps to Implement the Gill Open Space and Recreation Plan

OBJECTIVE	ACTION	RESPONSIBLE BOARD/ GROUP	START DATE
A1.Prioritize areas in Gill with significant "natural and cultural resources" so that town officials and residents can act efficiently when a parcel of land becomes available for protection.	Develop a list of criteria, which if found on a parcel being offered as a donation, or for sale in the town, would signify priority for action, and if found on a Chapter 61, 61A, or 61B parcel, could trigger the town's official consideration of its right-of-first-refusal to acquire, or otherwise seek to conserve, a parcel of land.	Open Space Advisory Committee	2005
	Develop a protocol for how the town would consider using its right-of-first-refusal (or assigning the right to a conservation land trust or conservation agency) regarding Chapter lands that are put up for sale for development.	Open Space Advisory Committee and Select Board	2005
	Using the list of criteria developed and the GIS maps in the Gill Open Space and Recreation Plan (2005), identify areas of conservation interest that would be considered to be priority areas with important "natural and cultural resources."	Open Space Advisory Committee and Select Board	2005
A2. Encourage landowners interested in protecting their land from development to work with Franklin Land Trust, Mount Grace Land Conservation Trust, with state and federal conservation agencies, and with the Town of Gill.	Invite Mount Grace Land Conservation Trust and Franklin Land Trust to a town forum to provide a presentation on their current activities and on the assistance they have to offer to Gill landowners.	Open Space Advisory Committee and Select Board	2006

OBJECTIVE	ACTION	RESPONSIBLE BOARD/ GROUP	START DATE
A3. Be responsive to the needs of farm and forest landowners and other agricultural businesses in town. Consider ways that the town might support agricultural operations as they would other commercial or industrial businesses in town.	At Town Meeting, vote to set aside funding each year for land conservation.	Select Board and Open Space Advisory Committee	Ongoing
	At Town Meeting, vote to remove excise taxes on farm animals.	Select Board and Open Space Advisory Committee	2006
	At Town Meeting, vote to adopt a Right-to-Farm Bylaw.	Open Space Advisory Committee	2006
	At Town Meeting, vote to increase the local property tax abatement allowance for seniors.	Select Board, Finance Committee, and Board of Assessors	2006
A4. Use the annual Biodiversity Days as a means for building a comprehensive biological inventory in Gill using community volunteers.	Work with the Massachusetts Association of Conservation Commissions (MACC) to coordinate annual spring walks to inventory animals, insects, fish, plants, and trees.	Open Space Advisory Committee and MACC	2006
A5. Support the training of local volunteers in vernal pool certification for students and citizens.	Encourage Northfield Mount Hermon and Gill-Montague Schools and residents to participate in an annual training program in vernal pool certification.	Open Space Advisory Committee	2006
A6. Encourage landowners to consider donating their land to the Town of Gill for the conservation of "natural and cultural resources."	Send a letter to all landowners in town with more than 10 acres of undeveloped land, which publicizes the town's goal to conserve priority "natural and cultural resources" for current and future generations of residents and which provides a clear method for landowners to contact and negotiate with the town concerning their land.	Open Space Advisory Committee and Select Board	2006

OBJECTIVE	ACTION	RESPONSIBLE BOARD/ GROUP	START DATE
A7. Explore revisions to Gill's zoning bylaw that would result in greater protection of valued "natural and cultural resources" and, which could also help to ensure any land development provides benefits that reflect the town's natural resource conservation goals.	Request the Franklin Regional Planning Board to present a program on zoning bylaws for the conservation of "natural and cultural resources" and encourage Gill residents to attend the meeting.	Planning Board and Open Space Advisory Committee	2006
	Develop, publicize, and if received well by the residents of Gill, seek to adopt a bylaw(s) that will help to protect valued "natural and cultural resources."	Planning Board	2006
A8. Explore the potential for developing a conservation land trust or land fund for Gill.	Invite members of the Deerfield Land Trust to a meeting of the Open Space Advisory Committee as a first step to understanding the value and risks associated with having a local land trust. Also discuss Deerfield's use of monies set aside each year for funding conservation efforts.	Open Space Advisory Committee	2006
B1. Evaluate the needs of all municipal recreational facilities and properties.	Consider hiring a part-time Recreation Director who would be responsible for organizing volunteers, grant writing, and other administrative tasks.	Recreation Committee and Open Space Advisory Committee	2005
B2. Explore the feasibility of developing a town swimming area, tennis courts, soccer fields, town park, town forest, and other recreational facilities and uses that are in demand.	Have the Open Space Advisory Committee investigate the land requirements and construction costs for each of the potential recreational facility needs (see Objective B1). Use the audience at Town Meeting as a means of gauging public support for town recreational facility development.	Open Space Advisory Committee and Recreation Committee	2007
	Apply for an Urban Self Help Program grant to fund the development of new recreational facilities or maintain existing ones.	Recreation Committee and Open Space Advisory Committee	2008
B3. Promote existing and future recreational facilities and services by developing a guide to facilities, programs, and trail systems in town.	Develop a one-page, easily reproduced flyer that shows the locations of different recreational facilities in and around Gill. Mail to all residents each year as part of a regular Newsletter mailing.	Recreation Committee and Open Space Advisory Committee	2007

OBJECTIVE	ACTION	RESPONSIBLE BOARD/ GROUP	START DATE
B4. Continue to cooperate with private entities in town such as Northeast Utilities, Gill-Montague School District, The Nature Conservancy, and Northfield Mount Hermon School that provide recreational facilities used by Gill residents.	Include Northeast Utilities, the Gill-Montague School District, The Nature Conservancy, and Northfield Mount Hermon School as well as other entities on the mailing lists for meetings of the Open Space Advisory Committee and the Recreation Committee as a way of communicating the town's interest in a mutually beneficial relationship with these organizations.	Open Space Advisory Committee and Recreation Committee	2006
B5. Support the development of multi-use and limited-use trail systems, which can be accessed from publicly owned land or private lands with permission.	Use the Gill Newsletter to promote an evening or Saturday meeting on trails and trail development. Use attendance and discussions during the meeting to gage interest among landowners for the creation of new trails in town. If interest is strong, encourage a secondary meeting to establish a course of action.	Open Space Advisory Committee and Recreation Committee	2006
B6. Identify recreational needs of residents of all ages and develop new programs and facilities as appropriate.	Develop a brief questionnaire for use at Town Meetings asking people to name three recreational facilities and three types of new recreational programs they'd like to see in Gill.	Recreation Committee and Open Space Advisory Committee	Ongoing
	Use the Gill Newsletter to both report results of the survey and to request volunteers to take on activities that most interest them. If volunteer recruitment is unsuccessful, seek grants from the Massachusetts Cultural Council to fund staff time and direct costs for the most desired program.	Recreation Committee and Open Space Advisory Committee	Ongoing

OBJECTIVE	ACTION	RESPONSIBLE BOARD/ GROUP	START DATE
C1. Cause the town to constitute a permanent Open Space Advisory Committee that would have the responsibility of implementing the 2005 Gill Open Space and Recreation Plan.	Request the Select Board approve a warrant article for Town Meeting vote that asks to establish a standing Open Space Advisory Committee.	Open Space Advisory Committee	2005
C2. Explore opportunities to partner with local, regional, and statewide land conservation organizations and agencies to better leverage limited town dollars and volunteer hours towards the conservation of priority resource areas.	Send a town liaison to attend quarterly plenary meetings of the North Quabbin Regional Landscape Partnership to engage land conservation agencies and organizations and other town open space committees in efforts that focus on Gill priorities.	Open Space Advisory Committee	Ongoing
C3. Explore opportunities for partnering with the open space committees of surrounding towns on land conservation projects that protect landscape-scale resources like contiguous forests, aquifers, core habitat areas, and trail systems.	Invite Open Space Committee representatives from surrounding towns to a quarterly meeting to discuss open space and recreation projects.	Open Space Advisory Committee	2006
C4. Explore the creation of a shared part-time planner position that would address open space planning and other land use issues in Gill and in one or two surrounding towns.	Have the Administrative Assistant speak with the Planning Board to determine the relative need for a part-time planner, canvass surrounding towns to determine their interest in a shared planner, and report the findings to all town boards.	Planning Board and Administrative Assistant	2007

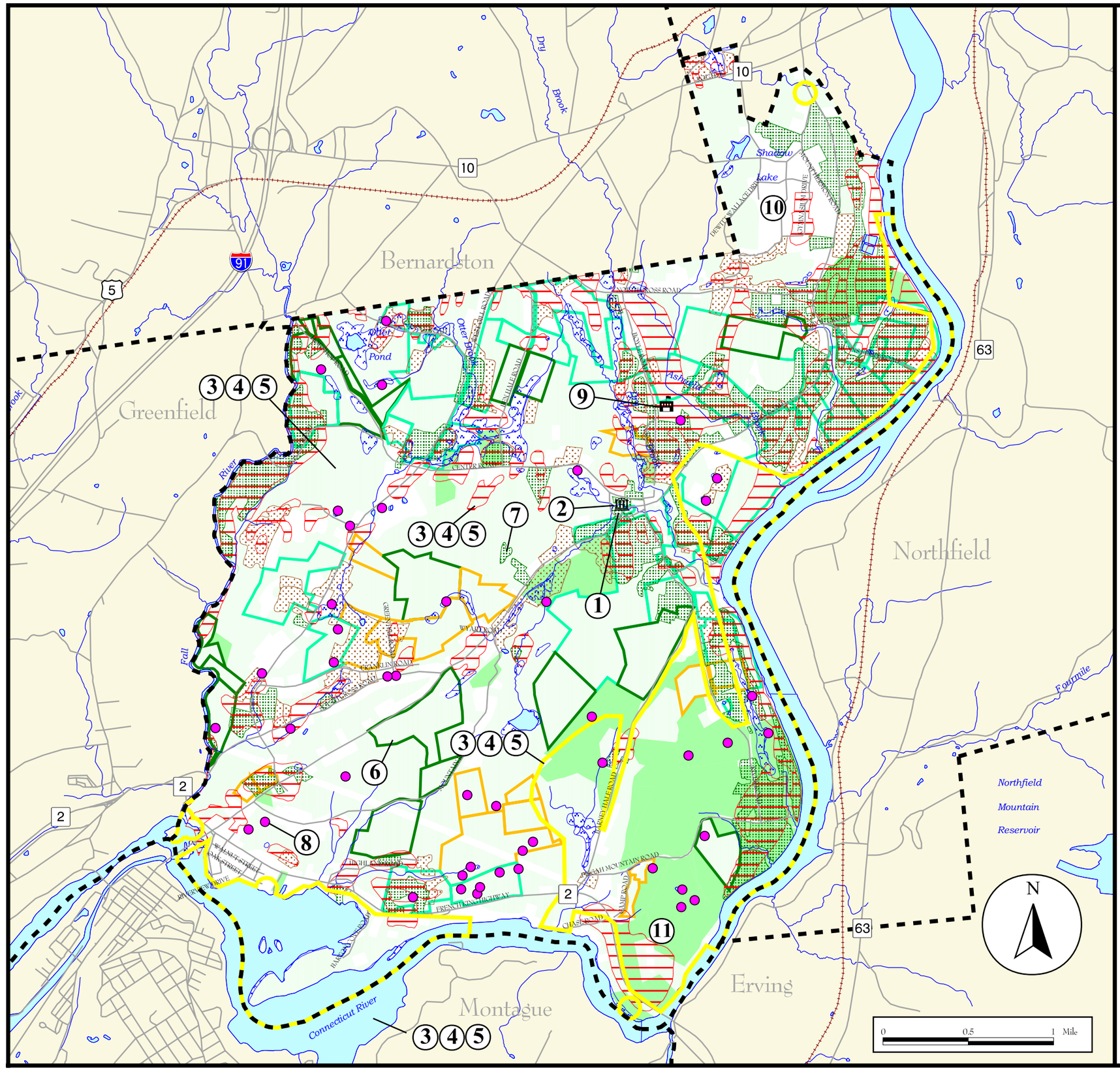
Source: Gill Open Space Advisory Committee Members; 2005.

Town of Gill

Open Space and Recreation Plan

Action Plan

	11 Priority Action Steps for the Gill Open Space and Recreation Plan
1	Establish a standing Open Space Advisory Committee (OSAC).
2	Determine the need for a part-time planner that could be shared with surrounding towns.
3	Develop a list of criteria that if found on a parcel made available for conservation, would signify priority for action by the town.
4	Develop a protocol for how the town would consider using its right-of-first-refusal regarding Chapter lands that are put up for sale for development.
5	Using the list of criteria developed and the GIS maps in the Gill Open Space and Recreation Plan (2005), identify priority areas for conservation.
6	At Town Meeting, vote to set aside funding each year for land conservation.
7	At Town Meeting, vote to adopt a Right-to-Farm Bylaw.
8	Encourage Northfield Mt. Hermon (NMH) and Gill-Montague (GM) schools and residents to participate in an annual training program in vernal pool certification.
9	Have the Recreation Committee (RC) report on the status and needs of recreational facilities and programs in town.
10	Include Northeast Utilities, the GM School, The Nature Conservancy, and NMH on the mailing lists for meetings of the OSAC and the RC to maintain a mutually beneficial relationship between these entities and the town.
11	Use the Gill Newsletter to promote a meeting on trails and trail development. If interest is strong, encourage a secondary meeting to establish a course of action.



Legend

Land Use
- Crop land
- Pasture
- Contiguous forest

Open Space
- Chapter 61 - Forestry
- Chapter 61A - Agriculture
- Chapter 61B - Recreation
- Open Space with Permanent Protection

- Town Line
- Rail Lines
- Roads
- Streams and Rivers
- Water body
- National Wetland Inventory wetland
- School
- Town Hall
- Potential Vernal Pool
- BioMap Core Habitat
- Prime Farmland Soils

Map Sources:

Map produced by The Franklin Regional Council of Governments Planning Department. GIS data sources include the FRCOG Planning Department, the Massachusetts Highway Department and MassGIS. Digital data obtained from MassGIS represent the efforts of the Massachusetts Executive Office of Environmental Affairs and its agencies to record information from the sources cited in the associated documentation. EOEA maintains an ongoing program to record and correct errors in the GIS data that are brought to its attention. EOEA makes no claims as to the reliability of the GIS data or as to the implied validity of any uses of the GIS data. EOEA maintains records regarding all methods used to collect and process these digital data and will provide this information on request. Executive Office of Environmental Affairs, MassGIS EOEA Data Center, 251 Causeway Street, Suite 900, Boston, MA, 617-626-1000.

Farmland soils digitized from "Important Farmlands of Franklin County" map (U.S. Soil Conservation Service, 1979) by FRCOG Planning Department staff. Road data provided by Massachusetts Highway Department. Town line, rail line, slope, land use, open space, National Wetlands Inventory, NHESP Potential Vernal Pool, NHESP BioMap Core Habitat, river, stream, and pond data provided by MassGIS.

Note: Depicted boundaries are a approximate and are intended for planning purposes only. Portions of the source data were obtained from 1:100,000 scale maps, therefore the accuracy of the line work on this map is +/- 100 feet.

FRANKLIN REGIONAL COUNCIL OF GOVERNMENTS
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Town of Gill
Franklin County, Massachusetts

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April 20, 2005

SECTION 10

PUBLIC COMMENT

Public feedback was sought throughout the entire open space and recreation planning process. The text and maps included in the Plan reflect these enhancements. A more direct request for feedback on the Five-Year Action Plan was made at the public forum held on May 19, 2005, which resulted in changes to the final drafts of the Five-Year Action Plan.

Copies of the final version of the Gill Open Space and Recreation Plan were sent to the following boards and organizations for review and comment:

- Massachusetts Division of Conservation Services (DCS)
- Gill Select Board
- Gill Planning Board
- Gill Conservation Commission
- Gill Recreation Committee
- Mount Grace Land Conservation Trust

Letters of comment are inserted into the plan at the end of this section. The letters reflect a broad base of support for the research, analysis, outreach and recommendations developed by the Gill Open Space and Recreation Planning Committee.

SECTION 11

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