North Brookfield, Massachusetts
2007 Open Space & Recreation Plan

June 2007

Prepared by the North Brookfield Master Plan Committee

Technical Assistance Provided by:
The Central Massachusetts Regional Planning Commission

OPEN SPACE & RECREATION PLAN

For the Town of

NORTH BROOKFIELD, MASSACHUSETTS

Prepared By the
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November 2007

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SECTION 1: PLAN SUMMARY

The Town of North Brookfield was incorporated in 1812. Historically, it was part of the Quaboag Plantation and then became part of Brookfield. The Town has a long tradition of agriculture that has made use of its abundant natural resources. Through the years the Town has managed to maintain its rural character even in the face of regional growth and development pressures that have brought urban sprawl to other communities across the State and in Central Massachusetts. A multitude of scenic vistas, special places and environmentally sensitive areas exist throughout the Town. Many of these places have managed to remain in their natural state but are not permanently protected from future development. North Brookfield's major challenge will be to find a way to protect as many of these special places as possible with the limited funds available. To achieve this goal North Brookfield will need to think creatively, work with its neighbors, and create partnerships with other like-minded organizations (i.e. regional land trusts, etc.). The open space planners in North Brookfield will need to actively pursue open space preservation opportunities rather than wait and expect the opportunities to present themselves.

The North Brookfield Open Space Plan Committee initiated its open space and recreation planning effort in January of 2007. The Committee was charged with updating a plan that was certified in 1995 and expired five years later. The current effort was in conjunction with the Town's Master Plan, which was begun in October of 2005. The first phase of the Master Plan was funded through an appropriation at Town Meeting; using this money North Brookfield was able to hire the Central Massachusetts Regional Planning Commission to provided technical assistance for the plan. The second phase, which includes the Open Space and Recreation Plan, was funded through a Smart Growth Technical Assistance Grant provided by the Executive Office of Energy and Environmental Affairs.

North Brookfield's Master Plan Committee made a determined effort to involve the public in the open space planning process. The Committee sent a Master Plan Survey to every household in Town in early 2006. Roughly 35% of North Brookfield's households responded to the survey, a very good response rate for such an effort. The Committee also sponsored a public forum on open space and recreation on the evening of May 2, 2007. The Committee met regularly on this project beginning in January 2007 and concluding in July 2007.

Through the planning process, the North Brookfield Master Plan Committee was able to establish the following primary goals for its open space protection priorities and recreation facilities:

- Maintain North Brookfield's Rural Character.
- Preserve and Enhance North Brookfield's Water Resources.
- Enhance the Community's Knowledge About Open Space in North Brookfield.
- Provide North Brookfield with well-maintained recreational facilities and opportunities.

The goals of this plan will serve as a guide for North Brookfield in its future efforts to protect open space and provide recreation resources for its citizens. The document before you is intended to serve as two chapters of the Master Plan as required under Chapter 41, Section 81-D of Massachusetts General Laws: the Natural Resources Chapter (see the environmental resource inventory in Section 4 of this document), and the Open Space Chapter (see the inventory of conservation/recreation lands in Section 5 of this document).

SECTION 2: INTRODUCTION

A. Statement of Purpose

North Brookfield, like many other small towns in Central Massachusetts, has experienced a slow but steady decline in open space. Fortunately, we have not experienced the levels of development pressure our more suburban neighbors have. Much of North Brookfield retains its rural character and large parcels of open space still exist. This "rural character" holds great value to the residents of Town. The future value stems from the preservation of ecologically sensitive natural resources and environments, protection of scenic and cultural resources, and opportunities for recreation. These can be found in lands preserved as farmland, as natural areas such as woodlands, meadows, wetlands, and as planned recreation areas, which can range from expansive parklands to the smallest pockets of downtown greenery. Paradoxically, the perceived value of this asset is the biggest threat to its own existence: the desirability of owning a home in a rural setting will continue the trend of development of open space, and diminish the “rural character” residents of North Brookfield value so highly.

The old philosophy that uncontrolled growth is good for the community has proven false. One common claim made is that residential development increases the local tax base, thereby lowering property taxes. In actuality, residential development costs more than the income it produces. On average, residential land use requires $1.15 in town services for each $1.00 in tax revenue; these services include education and social programs, public health and safety, public works, and even local government. Conversely, farm and forestland requires only $0.34 in services for each $1.00 of revenue, leaving $0.66 to offset other municipal expenses. At first glance, industrial/ commercial land use appears to create a similar surplus (requiring $0.42 in services for each $1.00 of revenue). However, if a local workforce, with the necessary skills to fill newly created jobs is not available, new residential development (with associated costs) may be required to house new residents that are attracted by employment opportunities.

By understanding the *net* impact of our various land uses, we can reevaluate the notion that natural resources *must* be converted to other land uses to ensure economic stability, and that residential development leads to lower taxes. In reality, supporting and preserving our valuable open space is simply a sound community investment, especially in a town, which values its "rural character" so highly.

This document is designed as a tool to help guide North Brookfield's future by assessing its needs, so as to achieve a balance between the benefits of economic development and environmental protection. The Commonwealth of Massachusetts requires that each municipality file an Open Space and Recreation Plan, current within five years and approved by the Division of Conservation Services, to be eligible for State or federal funds offered through the Executive Office of Energy and Environmental Affairs. This document is intended to meet that requirement.

B. Planning Process and Public Participation

This plan represents the collected effort of various stakeholders throughout North Brookfield who came together to identify our needs, establish goals and develop strategies to meet North Brookfield's recreation, conservation, open space and historic preservation needs, to ensure that residents of North Brookfield have the highest possible quality of life.

The Master Plan Committee employed several methods to solicit public participation throughout the planning process. Two community-wide public forums were held, highlighting the work done during a series of regularly scheduled Committee meetings, to gather public input from the citizens of the community and incorporate the comments and suggestions into the final Plan.

Beginning in January 2007 and continuing into the summer, the Committee held a series of regularly scheduled public meetings. These meetings were all advertised public meetings that were open for any and all concerned citizens to attend, including those interested members of other municipal boards and commissions. Throughout the planning process Committee members made an effort to reach out to other boards and commissions by attending their meetings to discuss the purpose and intent of the Plan. The Committee has always made themselves available to respond to citizens', boards' and commissions' questions, comments and concerns regarding the formulation of the Plan and any recommendations.

In an effort to gather as much public input as possible, the Committee designed a Master Plan Survey. This survey was mailed to every North Brookfield household in February of 2006. It was also made available at the Town Clerk's Office, the Town Library and the Senior Center to allow all those interested in expressing their opinion to have the opportunity. The Committee also contacted reporters from the New Leader, a regional newspaper, to provide information about the survey prior to its mailing and to encourage reporters to attend their regular meetings. North Brookfield's planners held a public forum on the evening of 2 May 2007; to discuss the Town's open space and recreation needs with the public. This forum generated much lively discussion and brought forth many valuable ideas and suggestions for the Plan.

The survey and the public forum were useful in identifying the needs and concerns of North Brookfield residents regarding open space and recreation priorities. The results of the survey were used to develop goals, strategies and the associated Five-Year Action Plan contained herein. The Action Plan was also informed by input solicited from other municipal boards and commissions throughout the process. While recognizing the importance of soliciting input upon review of the draft Plan from the various boards and commissions in Town, the Committee firmly believed it was equally vital, if not essential, to involve those boards and commissions in the actual process of developing the Plan itself. Therefore, the Committee made a concerted effort to include all affected boards and commissions, either through the appointment of representatives to the Committee or as active participants in the planning process and development of the various components of the Plan.

The final Plan presented herein represents a culmination of town-wide efforts to bring all stakeholders having a vested interest in the Town's future into the planning process. The resulting document provides a framework for the citizens of North Brookfield to guide the destiny of the Town through future open space and recreation acquisition, projects, initiatives and plans.

SECTION 3: COMMUNITY SETTING

A. Regional Context

Located in Central Massachusetts (Worcester County), with the town center situated on State owned secondary Routes 67 and 148, North Brookfield is approximately 18 miles west of Worcester. Except for the Town of Spencer to its East, small towns of similar population and demographics surround it. North Brookfield contains a total land area of 21.99 square miles. North Brookfield's adjacent neighbors include the towns of New Braintree, Spencer, Brookfield, East Brookfield and West Brookfield. It is four miles north of main Route 9, and twelve miles north of Interstate Route 90 (the Mass Turnpike).

Development of both State and interstate highway systems has made North Brookfield more accessible to major cities. It is a 1½-hour drive to Boston and Hartford, 1 hour to Springfield, and ½ hour to Worcester. Many of North Brookfield's residents commute to these cities for employment, especially Worcester.

North Brookfield is just outside what could be considered Worcester's western suburbs (Spencer, Leicester, and Paxton). However, its rural atmosphere, combined with reasonable land prices, makes it an attractive location for the next cycle of residential development.

Several of the Town's watersheds don't recognize town boundaries. These include:

- North Brookfield's water supply: Part of the watershed of the Town reservoirs lies in the Town of New Braintree.

- The Five Mile River: Passing through the east side of North Brookfield, the river's watershed is shared by five towns: North Brookfield, Spencer, Oakham, New Braintree, and a small portion of Rutland.

- Brooks Pond: Fed primarily by the Five Mile River, this privately owned and managed pond has shoreline located in four separate towns: Spencer, North Brookfield, Oakham, and New Braintree. A swimming area, located on the North Brookfield portion of the shore, has historically been made available to the public by the private owners of the pond.

- Lake Lashaway: Lake Lashaway lies between two towns: North Brookfield and East Brookfield. There is a State boat launch on the lake, and the two municipalities share a town beach (Lashaway Park) on land located in North Brookfield. The town wells of Brookfield and East Brookfield are located a short distance downstream from the Lake.

- Dunn Brook: Flowing out of the center of North Brookfield, this brook is a potential source of pollution to the Quaboag river. The Town's transfer station, capped landfill and sewage treatment plant are located alongside Dunn Brook. Thousands of tons of sludge have been removed from the site of the old treatment plant, and the landfill was capped in 1996.

- Meadow Brook and Sucker Brook: These two small brooks originate on the west side of Town and flow into Lake Wickaboag in West Brookfield.

- Several small streams on the north and west sides of Town flow into the Ware River.

- All of North Brookfield is located in the Chicopee River Watershed.

B. History of North Brookfield

Quaboag Plantation was incorporated in 1673. The original settlement suffered severely from Indian raids, and King Philip's War left only one house standing. Brookfield was incorporated in 1718 as a part of Worcester County. Eventually, the growing north precinct petitioned the State legislature for separate town status, due in large part to the distances that were required to participate in town functions, and to attend church. In February of 1812 the Town of North Brookfield was incorporated, with a population of 1,100. The major occupation of the newly formed community was agriculture. Other businesses included gristmills, a tannery, cider mill, gunsmith, and a cobbler.

Rufus Putnam, one of George Washington's chief engineers during the Revolution, served his apprenticeship in the town as a millwright at the Matthews Fulling Mills from 1754 to 1757. The Matthews Mills were themselves a tribute to 18th century engineering, since they included several canals and tunnels which made the natural glacial kettle holes in the area part of a mill ponding complex for the fulling mill. The town avoided the deadly smallpox epidemics of the 1770's by inoculating over 200 people with weakened smallpox virus. People came from as far away as Worcester to receive the inoculations of the experimental vaccine from North Attleborough physicians, Dr. Thomas and Dr. Kittredge, and then to convalesce through a mild form of the disease in small hospitals that the town built on the outskirts of the community.

Along with its neighboring towns, North Brookfield sent 150 Minutemen to the Battle of Lexington and Concord. But they also demonstrated against the government they had helped create when residents of North Brookfield were involved in Shays Rebellion in 1780, holding meetings in town and hiding their weapons at Ayre's Tavern, one of the oldest buildings in town.

In 1810 the manufacture of "factory made" shoes began, starting an industry, which profoundly altered the Town's history. In 1824 Tyler Batchelor also began a shoe factory, which grew rapidly. By the mid-1800's North Brookfield was the largest manufacturer of shoes in the country, shipping products throughout the United States, and provided a large portion of the footwear to the Union Army during the Civil War. Between 1840 and 1880 other companies began the manufacture of lasts, wooden boxes, corsets, pocket books, and other leather goods, but shoe manufacturing remained the major industry. The population steadily increased during this time of prosperity. Agriculture was still a major activity in 1875 there were 175 farms and orchards.

North Brookfield was (and to some extent still is) isolated due to its location. In 1876 the North Brookfield Railroad opened, connecting to East Brookfield and the Boston & Albany Railroad. The Town now had a bank, three churches, a library, Town hall, two hotels, and a number of retail establishments. The railroad made the town more accessible and the population increased further to 4,587 by the year 1900.

Prosperity ended as management closed the shoe mills in 1900 after a long strike. Population immediately dropped off as workers moved in search of employment, and many houses and tenements were left vacant. Some mills were torn down, and others stood empty for a number of years.

In 1916 Herbert Mason purchased the remaining Batchelor shoe factory buildings and Quabaug Rubber, a manufacturer of rubber soles and heels for shoes. In 1918 the Asbestos Textile Company took over the buildings on Grove and School Street. This was the end of the economic decay in town, and after reaching a population low of approximately 2600, North Brookfield began a slow but steady growth in population that continues to day. In the 1940's the Cooke Optical Company took over a building on Summer Street previously owned by a succession of enterprises, and another optical firm, Optovac, began in 1965. Quabaug Rubber has grown substantially, as the United States manufacturer for Vibram soles; it has become the largest employer in Town. The second largest employer is Chase Precast (located on East Brookfield Road) that started in 1967, manufacturing a variety of concrete products. Chase Precast is currently owned by Oldcastle Precast, Inc.

There were no paved roads in Town until 1910 when the road to New Braintree was paved. Over the years the Town has added 60 miles of pavement, leaving about 10 miles of gravel roads. Both of the Town's hotels (Morrison's on Forest Street and the Batchelor House on North Main Street) were destroyed by fire in the 1920's.

A major change in North Brookfield in the past fifty years (like much of New England) has been the decline of the farming industry. In the 1930's there were three large chicken farms in Town, shipping young chicks all over the eastern United States. The last one closed its doors in 1990. In 1972 North Brookfield had twenty working farms. Today there are eight, several of which are operated on a part time basis. Luckily, while activity has declined or ceased on many farms, most owners have thus far been reasonably successful at maintaining the large tracts of farm and woodlands. However, with agriculture in the northeast still in decline, and large tracts of developable land becoming fewer, they are certainly at risk for development of non-farm uses. The largest agricultural operation remaining in Town is the Brookfield Orchards.

Nineteenth century American poet William Cullen Bryant, lived in North Brookfield when he prepared for college with his uncle, the minister in town for 64 years. Bates Observatory was given to the town in the 1890's and on a clear day, townspeople say, you can see all the way to Boston. George M. Cohan, actor, producer and playwright, was a frequent visitor to town when he came to stay with his grandparents. In the summer of 1934 the town honored both Cohan and Connie Mack, another former resident. The stage of the present Town House was the site of a performance of "Ah, Wilderness," with the original New York cast directed by Cohan. The Philadelphia Athletics played an exhibition baseball game in town against the Quabaug Rubber company team, with Quabaug being the victors as townspeople are quick to note.

C. Population Characteristics

Population growth means, among other things, loss of open space to development and increased demand for recreational facilities (as well as other town services). After the severe drop in population from 1900-1920 due to the loss of the shoe industry, North Brookfield has experienced a slow to moderate rate of steady growth.

With a total landmass of 21.99 square miles, North Brookfield has a population density of approximately 222 people per square mile. The table below presents North Brookfield's growth in population over the years, as well as the Town's projected population for the years 2010 and 2020.

Table OSR-1
North Brookfield Population Growth

Year	# of People	Numerical Change	% Change
1930	3,013	----	------
1940	3,304	291	9.7%
1950	3,444	140	4.2%
1960	3,616	172	5.0%
1970	3,967	351	9.7%
1980	4,150	183	4.6%
1990	4,708	558	13.4%
2000	4,683	-25	-0.1%
*2006	4,663	-20	-0.1%
**2010	4,800	117	2.5%
**2020	4,800	0	0.0%

Sources: US Census Bureau; * = 2006 estimate comes from the Town Clerk's most recent annual census. ** = 2010 and 2020 forecasts provided by the CMRPC Transportation Department.

North Brookfield experienced a significant growth in population between 1980 and 1990, adding 558 new residents over the course of the decade. This was followed by a slight decline (a loss of 25 residents) in population 1990 to 2000. However, recent development activity in and around North Brookfield indicates that another growth spurt may be underway. According to the Central Massachusetts Regional Planning Commission's (CMRPC) regional growth forecast, North Brookfield's population growth rate is projected to increase by a modest 2.5% between 2000 and the end of the decade.

Table OSR-2
North Brookfield Age Characteristics

Age Group	Number	% of Total Population
Under 5 Years of Age	260	5.6%
5 – 19 Years of Age	1,109	23.7%
20-44 Years of Age	1,613	34.4%
45-64 Years of Age	1,096	23.4%
65 Years of Age and Over	605	12.9%
Total:	4,683	100%

Source: US Census Bureau, 2000 Census.

Approximately 29% of North Brookfield's population consists of school-aged children or soon to be school-aged children. This represents a slight increase from the 1990 Census when 27.6% of the Town's population consisted of school-aged or soon to be school-aged children. The 45-64 age-group (or the soon to be seniors) saw the greatest increase, growing from 16.9% in 1990 to 23.4% by 2000. North Brookfield's senior population showed only a modest increase between 1990 (596 seniors) and 2000 (605 seniors). These trends indicate there will be more people throughout North Brookfield looking for recreation opportunities in the future and these activities will need to be varied to serve a variety of populations.

Table OSR-3
North Brookfield Household by Type

Type of Household	Number	% of Total Households
Married Couple Family	969	53.5%
Male Householder	71	3.9%
Female Householder	196	10.8%
Non-Family Household	575	31.8%
Totals:	1,811	100%

Source: 2000 US Census

Table 3 indicates that more than half of the households in North Brookfield consist of married couples with children. Families with children often expect to find a diverse selection of recreational opportunities (both passive and active) in their communities, whether provided by the municipality itself or by private entities.

Table OSR-4
Median Household Income Comparison

North Brookfield Median Household Income:	$44,286
State Median Household Income:	$50,502
North Brookfield as a Percent of State Average:	87.7%
Worcester County Median Household Income:	$47,874
North Brookfield as a Percent of Worcester County Average:	92.5%

Source: 2000 US Census

Table 4 indicates that North Brookfield's median household income is slightly lower than Worcester County and the State as a whole. This indicates that the Town may have some difficulty providing a diverse selection of recreation opportunities and open space amenities to its citizens. Therefore it is important to provide those opportunities and amenities that serve the widest cross-section of citizens and are the most economically realistic.

Table OSR-5
Per Capita Income Comparison

North Brookfield Median Per Capita Income:	$20,205
State Median Per Capita Income:	$25,952
North Brookfield as a Percent of State Average:	77.8%
Worcester County Per Capita Income:	$22,983
North Brookfield as a Percent of Worcester County Average:	87.9%

Source: 2000 US Census

Table 5 indicates that North Brookfield's per capita income is slightly below average for Worcester County and the State as a whole. This is not surprising as the Town's median income is also below the averages. The average household income is based on the combined income raised by all of the household members, while the per capita income figure is derived by taking the community's total income generated and dividing it by every person in town whether they are in the labor force or not. The fact that North Brookfield's median income figure is lower than average is indicative of households that are headed by wage earners with lower paying jobs. That North Brookfield's per capita income is also below average is indicative of a community who's households have a higher than average percentage of those not in the workforce (children & the elderly). A breakdown of the Town's income categories is provided below.

Table OSR-6
North Brookfield Household Income Distribution

Income Categories	# of Households	Percent of Total
Less than $15,000:	51 households	4.1%
$15,000 - $24,999:	88 households	7.1%
$25,000 - $34,999:	128 households	10.3%
$35,000 - $49,999:	308 households	24.8%
$50,000 - $74,999:	374 households	30.1%
$75,000 - $99,999:	129 households	10.4%
$100,000 - $149,999:	129 households	10.4%
$150,000 and over:	34 households	2.7%

Source: 2000 US Census

The 2000 US Census indicates that slightly more than two-thirds of the housing units in Town are owner occupied. This indicates that there is considerable investment in the Town. Of the 1,811 units in North Brookfield 1,246 or 69% are owner occupied, while the remaining 565 or 31% are rentals.

Additional Demographics

Jobs: In 2005 According to the most recent statistics of the Massachusetts Division of Career Services, there were 93 business establishments in North Brookfield as of 2005, employing an average monthly total of 1,112 people. North Brookfield's manufacturing sector had the highest number of jobs followed by the retail sector.

Labor Force: DETMA statistics further indicate that North Brookfield had a labor force of 2,482 workers as of 2005 with an unemployment rate of 4.7% (slightly lower than the State average of 4.8% and the Worcester County rate of 5.0%). During the last fifteen years North Brookfield's unemployment rate has fluctuated greatly, with a high of 9.0% in 1992 to a low of 2.6% in 2000.

D. Growth and Development Patterns

1. Patterns and Trends:

North Brookfield's rounded hills and valleys first supported isolated farmsteads, and the Five-Mile River powered the Town's first small mills. By the mid-1800's, a thriving central village had grown up around several factories. The demise of the shoe industry in 1900 (following a prolonged strike) decimated the Town, and population plummeted. After 1920 a slow steady growth pattern was established, with better roads and access to the automobile that continues to this day. However, development since that time has been primarily residential with more and more residents working outside of town. Development has shifted from the centralized village to the outlying rural areas. This trend is considered likely to continue.

Thus far, North Brookfield has not experienced the intensity of development experienced by its neighbors to the east, but Town residents are concerned. The results of the recent Master Plan Survey show a clear consensus that protection of the Town's rural character; natural resources, scenic beauty and farmlands, should be critical planning issues in the years to come. In fact, an overwhelming 52% of respondents stated the Town should institute further measures to manage residential growth.

The University of Massachusetts-Amherst has been tracking statewide land use data for the better part of the last century. The University uses aerial photographs and interprets them (now using GIS) based on land use categories. Table 7 below outlines North Brookfield's land use totals for the last three Statewide land use mapping efforts.

Table OSR-7
North Brookfield Land Use Changes Over the Years

1971	1985	1999
891 developed acres	1,084 developed acres	1,454 developed acres
(846 residential)	(1,027 residential)	(1,368 residential)
(46 Com./ind.)	(58 comm./ind.)	(86 comm./ind.)
(8,794 forestland)	(8,509 forestland)	(8,506 forestland)
(2,975 farmland)	(2,889 farmland)	(2,419farmland)

Source: UMass-Amherst land use data for 1971, 1985 and 1999.

The amount of developed land in North Brookfield has increased by 63.2% between 1971 and 1999. Percentage-wise, this increase has not been evenly distributed amongst the three major development categories: residential, commercial, and industrial. Industrial land has increased the most, more than 140% (23 acres in 1971 to 56 acres in 1999), followed by residential land at 62% and commercial land at 32% (22 acres in 1970 to 30 acres in 1999). In terms of sheer acreage, the residential sector has grown the most, adding 522 new acres of development between 1971 and 1999. Conversely, North Brookfield's farmland has declined by roughly 19% and forestland by 3% during the same time period. With only 1,454 developed acres out of a total land area of 14,067 acres (or 9.9% of the total), North Brookfield is still very much a rural small town despite the increase in development documented above.

The majority of new building lots in North Brookfield were created through the Approval Not Required (ANR) process, meaning that such plans do not receive any detailed municipal review of their potential impacts on the environment; rather, the Planning Board simply endorses the ANR plans as they are presented. North Brookfield has seen relatively little subdivision activity during the last 30 years, handling only a few definitive subdivision proposals during this timeframe. The creation of ANR frontage lots has not yet led to a deterioration of North Brookfield's natural ecology. Dense residential development along the shoreline of Lake Lashaway has been a factor in the decline of the Lake's water quality; however, the vast majority of these lots were created decades ago.

2. Infrastructure**:**

A. Transportation:

While in decades past North Brookfield was served by both railroad and trolley, today there is no public transportation available in Town. There is bus service to Worcester via Route 9 from East Brookfield, but North Brookfield residents under utilize this service. Rail and bus service are available in Worcester. The Town of North Brookfield owns the old railroad bed. Privately owned automobiles presently meet the vast majority of transportation needs. If demand for public transportation were to increase (for example, by a drastic increase in the price of gasoline) bus service to Worcester could be added.

B. Water Supply:

The municipal water supply system consists of a drainage area of approximately 2.5 square miles collecting roughly 1100 million gallons per year which is stored in the two adjacent reservoirs: Horse Pond and Doane Pond, The Town owns approximately 145 acres of watershed lands, primarily abutting the reservoirs.

	Horse Pond	Doane Pond	Total
Surface Area:	63 Acres	28 Acres	91 Acres
Storage Capacity*:	248 million	43 million	291 million

* Storage Capacity is measured in gallons

The water system makes use of the Horse (North) Pond reservoir as its water supply source. The water treatment plant has the capacity to treat up to two million gallons per day (gpd), but the system typically uses roughly 404,000 gpd. The Department of Environmental Protection (DEP) has permitted a water withdrawal of up to 433,000 gpd. The reservoir can actually provide a firm yield of 470,000 million gpd. Doane Pond can provide a firm yield of 200,000 million gpd but can only used as an emergency water supply source and would require an expensive and time consuming process to bring on line. There is also an interconnection with the East Brookfield water system that can be used in emergencies, but this interconnection only provides water service to roughly 200 homes in the vicinity of Lake Lashaway. The treatment plant treats for turbidity, color, corrosion control and disinfection. The system's pipes are over 110 years old.

Meters have been in place for just the last five years, however; all water customers are now metered. The most recent water audit found that the system has 29% of its water unaccounted for. While this is a very high percentage of unaccounted for water, the Department instituted an extensive leak detection program in 2005 that allowed the Department to identify and fix many of the most severe leaks. It is anticipated that the system's percentage of unaccounted for water will decrease substantially during the next water audit, as well as the amount of the water the system uses on a daily basis. While the Department fixes pipes as they break, it also has an infrastructure management plan that contains a three-year pipe replacement schedule.

The Department owns a small amount of land around the reservoir and along the North Brook Canal. A portion of the land in the watershed is in the Agricultural Preservation Restriction (APR) program that allows the land to be used for farming, but much of the land around the reservoir is not restricted in any way. The Department is working with Massachusetts Rural Water Association and abutting landowners to develop a Source Water Protection Plan and a Water Protection District bylaw that will be brought before voters at a future Town Meeting. The Water Commissioners have not established a definitive service system and are not currently looking for new water supplies. They continue to entertain requests from developers for extending the water system if the developers are willing to pay all associated costs. Lack of planning could result in a future water supply crisis that will affect future-growth planning in the Town.

C. Sewer Service:

The present sewage treatment plant, located south of the center of Town on East Brookfield Road, provides 870 service connections in Town. These connections include most businesses and multifamily housing units in North Brookfield as well as a number of single-family dwellings. Approximately 60% of North Brookfield is tied into the municipal sewage system with the remaining outlying residences and a few small businesses relying on on-site septic systems. Design capacity for the existing treatment plant (built in 1971 and upgraded in 1995) is 757,000 gallons per day. The 1995 upgrade included the installation of a new "disc cloth filter", which was the first to be installed in New England. The effluent from the treatment plant is discharged into a small stream: Dunn Brook (a tributary to the Quaboag River). The effluent discharged into it is tested for toxicity four times a year. The Sewer Department received the New England Environmental Protection Agency Operation and Excellence Award in 1999. This award was given to the Department for "recognition of its commitment to clean water through outstanding operation and maintenance." In 2005 the plant treated an average of 649,000 gallons per day,

but this can be considered an anomaly because of the high amount of rainfall that ended up infiltrating the system. The current discharge permit for the treatment plant expired in September 2005. Currently the State Department of Environmental Protection (DEP) and the federal Environmental Protection Agency (EPA) are reviewing North Brookfield's new application that was submitted in 2005.

While no expansion plans are in place, new hookups will be encouraged to help defray debt retirement costs of the upgrade. Some towns in Massachusetts are allowing new hook-ups only on the basis of corresponding reductions of inflow and infiltration: the developer seeking hook-ups must pay for decreases in system volume through pipe repair. The Sewer Department is currently working to complete the "Little Canada Project", this project will reline approximately 2 ½ miles of sewer pipe in the Little Canada section of Town. This project will also include a 1-½ inch cement seal coat for approximately 80 brick manholes. These improvements are the first step in a long-term plan to address the Town's groundwater infiltration problems. The only un-sewered area of town considered to have a sufficient housing density for inclusion in the municipal system is Lake Lashaway. However, the distance from the treatment plant (approximately four miles) together with the need for pumping uphill would make it very expensive.

3. Long-term Development Patterns:

As described previously, growth in North Brookfield has been slow but steady in recent decades, primarily residential in nature, and spread throughout the town, especially in the more rural areas. The Town has adopted certain land use controls over the years, aimed at guiding and controlling development.

The Town has had a zoning by-law since 1963, which was last amended in 1990. Zoning districts are delineated (see Zoning Map) along with their allowed uses and dimensional requirements.

Zoning District	**Minimum Lot Size**	**Minimum Frontage**
R- 11 Central Residence	11,000 sq, ft. (single family)	100 ft.
	16,000 sq. ft. (two family)	100 ft.
	27,000 sq. ft. (three family)	100 ft.
	41,000 sq. ft. (four family)	100 ft.
R-30 Open Residence	30,000 sq. ft.	150 ft.
R-66 Rural Residence	66,000 sq. ft.	250 ft.
B-C Central Business	None	None
B-G General Business	25,000 sq. ft.	110 ft.
Ind. Industrial	50,000 sq. ft.	220 ft.

The Zoning By-law also contains Growth Rate Regulations, the objective of which is "to relate the timing of residential development to the Town's ability to provide services to such development, and thereby to promote the education, health, safety, convenience and welfare of the inhabitants of the Town. The aim of this section is that the town-wide rate of residential development in future years not greatly exceed that experienced in recent history, with an objective of not more than thirty-six (36) dwelling units being created in any year, and to achieve this through regulating the maximum rate at which individual developments may proceed." While this objective of thirty-six units can be exceeded by the more complex regulations governing development rates of subdivisions (under the jurisdiction of the Planning Board, to be exempt requires an approved development schedule), it has rarely been surpassed, perhaps in part by the lack of proposals for large subdivisions to date.

The most recent amendment of the bylaw (1990) banned construction of multi-family dwellings in the R-30 and R-66 districts, limiting them to the R-11 (central village) district. The Rules and Regulations of the Planning Board governing the subdivision of land requires the protection of natural features (Section IV

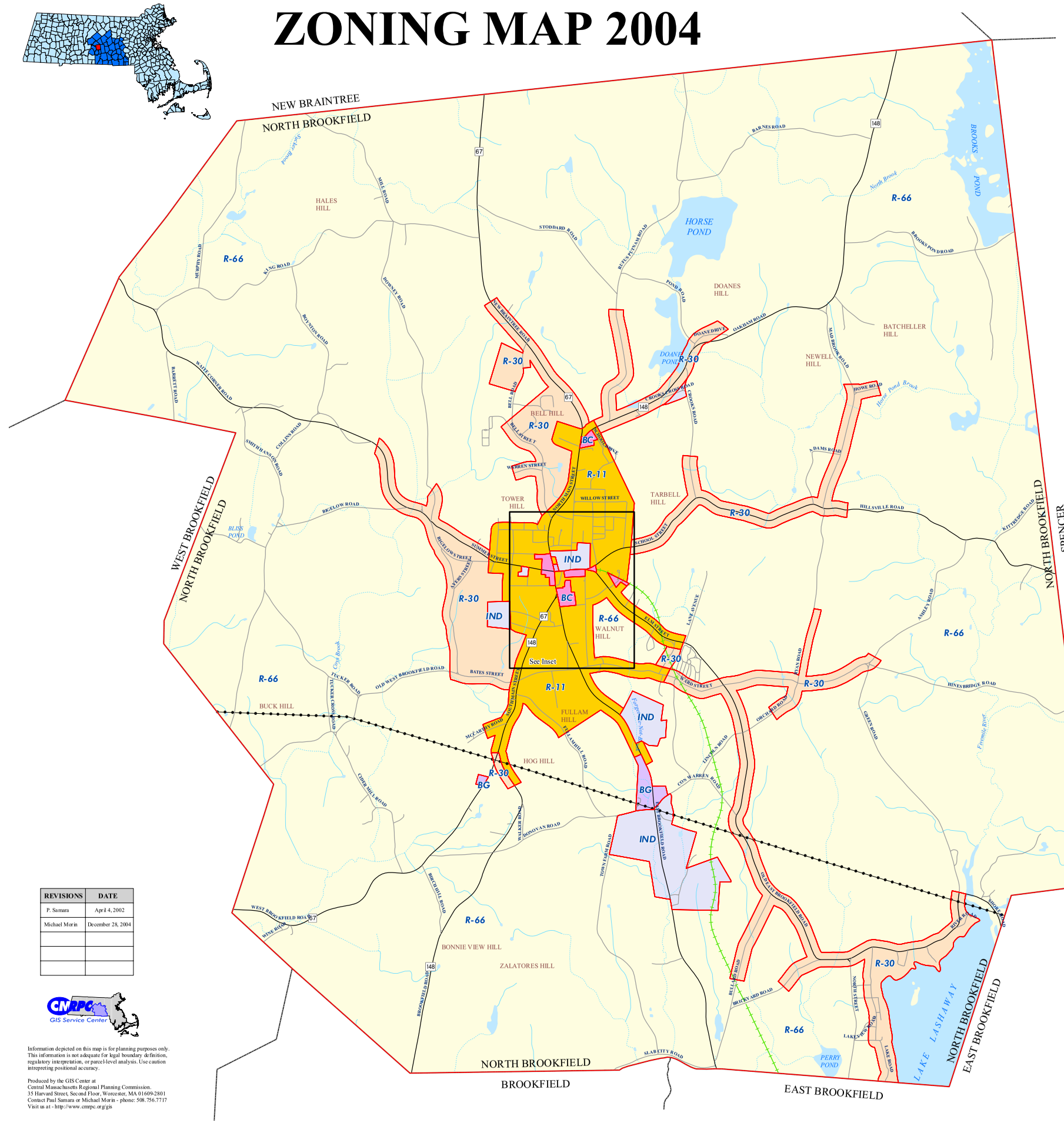
A 2.5.) by stating: "all natural features, such as large trees, water courses, wetlands, scenic points, historic spots, and similar community assets, which will add attractiveness and value to the property shall be preserved." Section IV C 2a. states that streams and watercourses shall be located within (Town) easements whose width shall not be less than twenty (20) feet and whose boundaries shall not be closer than five (5) feet horizontally from the annual high water line. Section IV C 2b. Goes one step further: "the Planning Board may require that other areas be included within a conservation restriction." Section IV E calls for land for open space, parks and/or playgrounds to be set aside, generally not less than 5% of the area of the subdivision.

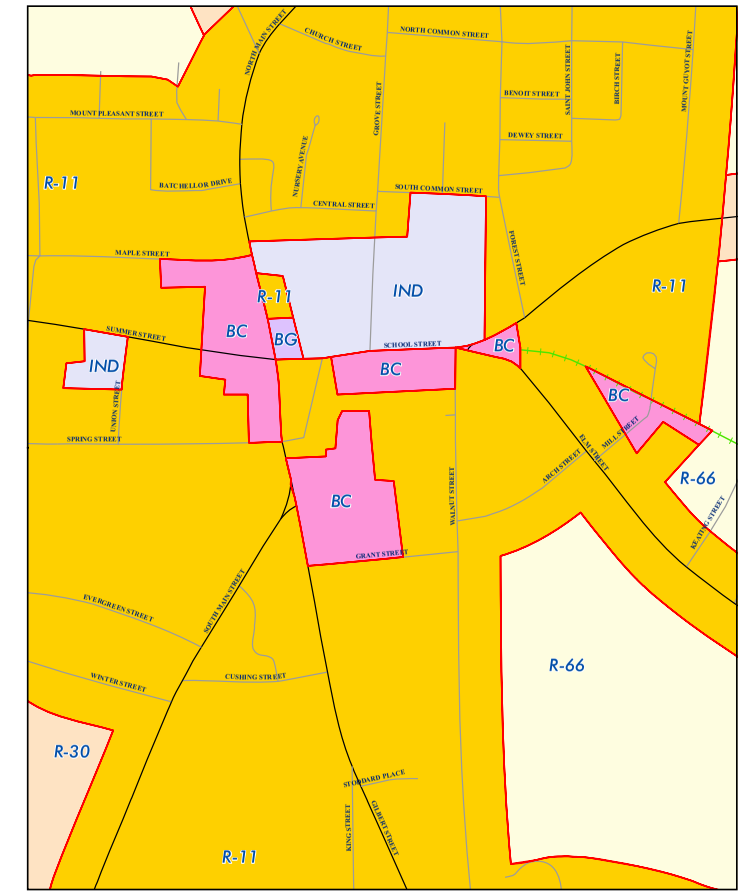
To date, only one subdivision has been constructed in North Brookfield. "Elm Meadows", located on Elm Street, is an eight building, thirty-two-unit townhouse complex. At least two other subdivisions have been approved in recent years, but (perhaps due to the depressed economy) were not built and approval has expired. No current proposals are before the Planning Board at this time.

The only other town by-law with significant potential impact on open space is the Earth Removal By-law. A variety of requirements including buffer strips, surface and ground water protection measures, and restoration of the mined land are included. Approved in 1991, this bylaw calls for the establishment of an Earth Removal Board to administer its provisions, with filing of minutes and an annual report. No such board has been established; no reports have been filed; and the bylaw is currently claimed to be under the jurisdiction of the Conservation Commission.

In 2000 the Central Massachusetts Regional Planning Commission conducted a build-out analysis for each of its forty communities with funding from the Executive Office of Environmental Affairs. This study focuses on what the Town would look like if all the developable land were to be built upon. The study removed already developed land, protected land and land that is unbuildable due to environmental constraints (including wetlands and slope). Using this criteria North Brookfield has a potential 3,747 new residential lots, or 187% more than what existed in 2000. These new lots would bring 9,628 new residents of which 1,787 would be school children. New residents would also have an impact on services; for instance, residential water use would increase 722,081 gpd from 351,225 gpd to 1,073,306 gpd, municipal solid waste would increase 5,806 tons from 2,824 tons to 8,630 tons and roads would increase 100.5 miles from 72.6 miles to 173.1 miles.

TOWN OF NORTH BROOKFIELD
ZONING MAP 2004





North Brookfield Town Center

Inset Scale 1 : 3,500

Legend

- BC - Central Business Zone
- BG - General Business Zone
- IND - Industrial Zone
- R-11 - Central Residence Zone
- R-30 - Open Residence Zone
- R-66 - Rural Residence Zone
- Local Road
- Arterial Road
- Abandoned Rail
- Transmission Line
- Stream
- Intermittent Stream
- Water Body

REVISIONS	DATE
P. Samara	April 4, 2002
Michael Morin	December 28, 2004

CMRPC GIS Service Center

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Produced by the GIS Center at
Central Massachusetts Regional Planning Commission.
35 Harvard Street, Second Floor, Worcester, MA 01609-2801
Contact Paul Samara or Michael Morin - phone: 508. 756.7717
Visit us at - http://www.cmrpc.org/gis

1 : 12,000 One Inch = 1,000 Feet

2,000 1,000 0 2,000

Feet

Map Production:
December 2004
Source:
Zoning developed by CMRPC.
Other data provided by MassGIS and Mass Highway.

SECTION 4: ENVIRONMENTAL INVENTORY AND ANALYSIS

A. Geology, Soils, and Topography

North Brookfield is located in the Central Uplands Region of Massachusetts (also known as the Worcester Plateau), which lies between the Worcester Lowlands Region to the east and the Connecticut Valley Lowlands Region to the west. The Central Uplands Region is a glaciated plateau-like area, which generally slopes gently to the South. The topography of North Brookfield is quite typical of the region: generally hilly, dissected by numerous small streams, with elevations ranging from slightly under 600 feet to slightly over 1, I 00 feet. Mean elevation is approximately 800 feet. Drumlins abound, as do stream-cut valleys. Areas defined by bedrock, at or near the surface, are usually irregular and hummocky. Glacial outwash, stream and lacustrine deposits have created nearly flat topography in some areas of town, especially the lower Five-Mile River valley.

Bedrock is metamorphic or igneous, consisting mainly of Paxton Quartz Schist (a chocolate brown to dark gray metamorphic rock), Brimfield Schist (a dark brown metamorphic rock containing an abundance of iron-bearing minerals as well as calcium and graphite), and intrusions of Hardwick Granite (a light colored, coarse-grained igneous rock). Visible rock outcrops often display pronounced foliation, indicating a complex deformational history. The area is also littered with glacial "erratics": stones that were plucked off the mountains of New Hampshire carried south and dropped by the melting glacier. Most of the numerous stonewalls in the area are built from these erratics.

Its ability to drain, its texture, and the gradient (slope) describe a soil at which it is found. These characteristics are determined by a combination of the soil parent material, the depth and nature of the substrata and underlying bedrock, and its topographical context, generally dependent upon glacial history. Soil characteristics can be interpreted to determine limitations for development, allowing planning for residential, commercial, industrial, recreational, and agricultural uses. For building purposes, the critical aspects of soil are its ability to drain (a function of its porosity), the permeability of its substratum and depth to bedrock. Poorly drained soils and muck soils, found in lowlands and depressions, have severe limitations for development because of extended periods of saturation, but are often ideally suited for wildlife habitat. While wet soils and muck pose obvious drainage problems, very permeable and porous soils can pose limitations where septic systems are necessary since they allow rapid percolation without adequate attenuation, posing a threat to area water resources. The more porous soils can also be unstable on slopes. Shallow soils make building difficult, if not impossible, and those underlain by hardpan severely affect the cost of facility installation. Depending on the depth of hardpan, these soils also stay wet for extended periods or have fluctuating water tables.

The most generalized soils map of the area, prepared for the Soil Report for Worcester County, Southern Part, by the US Department of Agriculture's Soil Conservation Service, lists four soil associations in North Brookfield. Within these groupings (defined on the next page) are well drained soils, moderately well drained soils, and poorly drained soils and mucks of differing depths. The soils map groups soils by their drainage and depth characteristics: (1) the deep to shallow moderately well drained soils underlain by hardpan or bedrock, (2) deep, well drained soils with permeable substrata, and (3) the poorly drained soils and mucks. Within the groupings the dominant soils comprise at least two thirds of the association.

- Paxton-Woodbridge-Ridgebury group: Formed in glacial till, this unit comprises the majority of land area in Town. The Paxton and Woodbridge series consist of gently sloping to steep, deep, moderately well drained soils on drumlins, hills and ridges (uplands). These soils formed in compact glacial till. Fine sandy loam top and subsoils are underlain by hardpan at 15 to 38 inches. Ridgebury soils are somewhat poorly drained, and are located in the depressions and drainage

ways of this group. Steep slopes, wetness, frost action, slow permeability in the substratum the firm substratum and depths to bedrock are the major limitations of this unit. Low-density residential development is possible, depending on specific soil depth, but construction costs may be higher, especially in a non-sewered area. Any high-density development in this soils group should be served by the municipal sewer system.

- Brookfield-Brimfield group: comprising a section of the north west part of Town (in the vicinity of Waite Comer Road, Boynton Road and Bigelow Road), this unit consists of upland hills and ridges with rock exposures throughout. Formed in glacial till derived from micaceous schist, stones cover more than 3% of the surface. While moderately well drained, these soils are underlain by bedrock at a depth of 10 to 20 inches. Steep slopes and shallow depth to bedrock are the major limitations. Several small areas of rock outcrop are also present in various locations throughout Town.

- Merrimac-Hinckley-Windsor group: Formed in water-sorted deposits of glacial outwash, these very deep soils are excessively to somewhat excessively drained. This map unit consists primarily of the glacial outwash plain, which defines the Five-Mile River valley, including the rolling to steep sides of the valley. Several sand and gravel operations are active in this area. To a much lesser degree, these soils can also be found in spots along Coy's Brook (southwest comer of town), and in the vicinity of Sucker Brook (northwest comer of town). Slope is the limiting factor in using these soils for development, as these sloping soils are unstable. Septic tank absorption fields may cause groundwater pollution because of the rapid percolation and poor filter capacity of these soils.

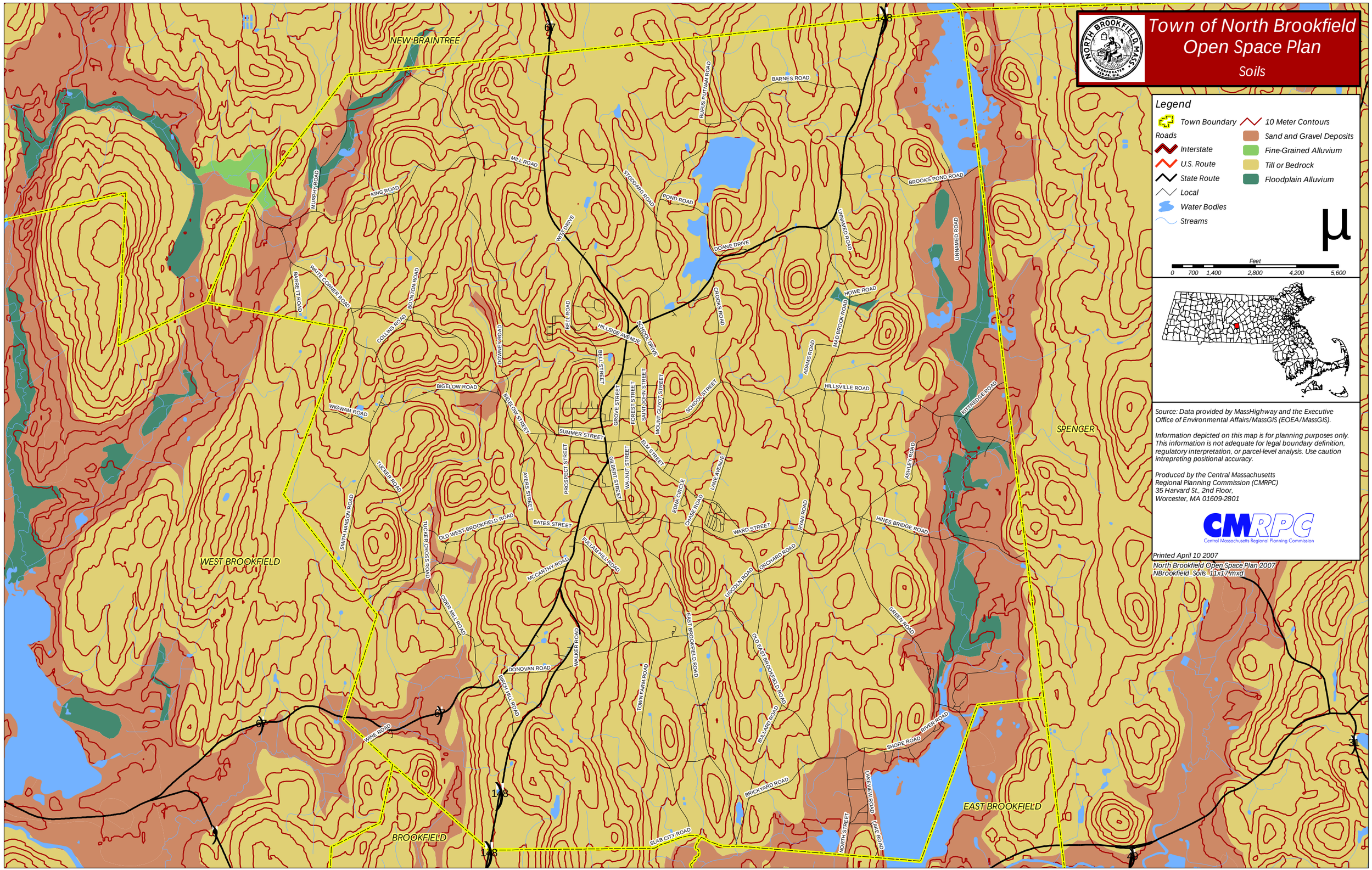
- Swansea-Freetown group: These mucks lie in river and stream floodplains and other wetlands. Nearly level very deep, and poorly drained, these soils are adjacent to streams in old glacial lakes or small ponds, and are formed in organic deposits and alluvium. They are found in spots within the Five Mile River valley, surrounding Perry Pond Oust west of Lake Lashaway), at the lower end of Coy's Brook, and several other wet areas. These soils are very unsuitable for development due to poor drainage and high water table, and sites where they exist are usually classified as wetlands.

According to the US Department of Agriculture's Soil Conservation Service, 98% of the land in North Brookfield is comprised of soils with severe limitations for septic systems, including high water tables, shallow depth, slope, or poor filtering capability. Only 215 acres (1.7%) are rated as "moderate limitations", and 14 acres (0.1%) are rated as "slight limitations". Given these limitations, consideration of increasing lot size for un-sewered development should be considered for the protection of groundwater (private wells) and surface waters (reservoirs, lakes and ponds, streams and rivers).

Prime agricultural soils are plentiful in North Brookfield, scattered in small parcels throughout Town, divided by the numerous hills. Primarily classified as Paxton, Woodbridge, and Merrimac soil types; there are approximately 3,000 acres of “Prime” agricultural soils in Town (25% of the total land area). Additionally, there are over 3,200 acres with agricultural soils of "Statewide importance" (often the same basic soils as "prime", but with slight agricultural limitations due to slope or stone content). Any efforts by the Town or State to help preserve the Town's agricultural heritage should, at least in part, focus on the remaining undeveloped prime and important agricultural soils.

Town of North Brookfield Open Space Plan

Soils



Legend

- Town Boundary
- Roads
  - Interstate
  - U.S. Route
  - State Route
  - Local
- Water Bodies
- Streams
- 10 Meter Contours
- Sand and Gravel Deposits
- Fine-Grained Alluvium
- Till or Bedrock
- Floodplain Alluvium

Feet: 0, 700, 1,400, 2,800, 4,200, 5,600

Source: Data provided by MassHighway and the Executive Office of Environmental Affairs/MassGIS (EOEA/MassGIS).

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Printed April 10 2007
North Brookfield Open Space Plan 2007
NBrookfield_Soils_11x17.mxd

B. Landscape Character

Entering North Brookfield from any direction, the Town's rural character is immediately evident. Rolling hills, dissected by valleys, provide open vistas often enhanced by well-preserved farm buildings. The concentrated development in the central village, with many grand Victorian homes, reflects the economic boom of the latter half of the 19th century, fueled by the shoe industry. Sections surrounding the village have a more typically suburban look, with newer and smaller homes. The outer districts, while slowly experiencing the fragmentation of open space due to residential construction, still maintain a distinctive rural New England character, with many large parcels of farm and woodlands.

The Town's water resources further enhance the landscape. The reservoirs (Horse and Doane Ponds), Lake Lashaway, Brooks Pond, and the streams and marshes all contribute to landscape diversity and beauty. Efforts aimed at protecting natural resources and preserving town character have been modest in North Brookfield to date, in part because development pressure has not been intense enough to be viewed as a serious threat. Some watershed lands have been acquired to protect the water supply, and a few small areas have been set-aside as Town forest. State agencies, however, have acquired two important properties in the Five-Mile River valley (for flood control, and for a wildlife sanctuary). There is also a small parcel of landlocked State forest in the river valley. Fifty four (54) North Brookfield landowners participate in the Chapter 61 tax programs providing a temporary and limited level of protection to their lands and six (6) landowners participate in the Agricultural Preservation Restriction (APR) program, which provides permanent protection to the lands. The combination of these efforts has created a significant amount of land that is protected, in some way, throughout the Town.

C. Water Resources

North Brookfield's water resources are an invaluable asset to the Town, providing drinking water, flood control, recreational opportunities, wildlife habitat, and scenic diversity. All surface waters in Town are classified as "Class B" (fishable, swimmable) waters, with the exception of the reservoirs and their tributaries, which are Class A. (Note: these designations refer to purposes, not necessarily existing conditions.)

Horse Pond and Doane Pond: the two adjacent town reservoirs are the sole source of the municipal drinking water system. Surrounded by forest and farmland, this is a very scenic area. Passive recreation activities such as hiking, fishing from shore, ice fishing and skating are permitted.

Brooks Pond: An impoundment of the Five Mile River, this privately owned and managed pond is very picturesque and sparsely developed. Ringed with forest and containing several small islands, recreational opportunities include non-motorized boating and fishing. The marshy area at the north end of the lake provides and abundance of wildlife viewing opportunities.

Five Mile River: Originating in Oakham and Rutland, the lower reach runs through North Brookfield from Brooks Pond to Lake Lashaway. The river has high recreational value. Many fishermen enjoy walking parts of the river. The lower part of the river makes a scenic and remote canoe ride with tremendous wildlife viewing opportunities. The marshes and wetlands along the river provide wildlife habitat and store vast amounts of water during heavy rain or snowmelt and help to ease flooding.

Lake Lashaway: Surrounded by summer cottages and year-round homes, the lake provides a cornucopia of recreational opportunities. There is a public boat ramp providing access to fishermen, sailors, and water-skiers. Lashaway Park, located on the west side of the lake in North Brookfield, but owned by East Brookfield, is a public beach and picnic area shared by both towns. Swimming lessons are given each summer. Camp Atwater, founded in 1927, is listed on the National Historic Register as the first summer camp in the US established for African-American children.

Perry Pond: Just to the west of Lake Lashaway, this shallow pond with its large bog-like wetlands is privately owned, and the surrounding woodlands remain undeveloped. This area is excellent wildlife habitat.

Streams and Brooks: Forget Me Not Brook joins Dunn Brook near the East Brookfield town line and flows south to the confluence of the Quaboag River. Many smaller intermittent and perennial streams and brooks are found in North Brookfield including Coy's Brook in the southwest portion of Town and Sucker Brook to the northwest and many unnamed streams.

All of North Brookfield is located in the Chicopee River Watershed. North Brookfield is further divided into 12 tributary basins, the boundaries of which are depicted on the Water Resource Map (Map 3).

Wetlands: North Brookfield contains a great deal of wetlands, with much diversity. Scrub marshes abound along the Five Mile River and other streams, and the lower Five Mile River valley contains a large grassy flood plain marsh. The large bog-like marsh around Perry Pond is especially striking. Numerous forested wetlands of various sizes are scattered throughout town.

According to the National Wetlands Inventory maintained by the US Fish & Wildlife Service, North Brookfield contains roughly 1,094 acres of wetlands. According to the Flood Insurance Rate Maps prepared by the Federal Emergency Management Agency, North Brookfield has approximately 1,221 acres of land falling within the 100-year floodplain. All of the resources mentioned in this paragraph are graphically depicted on the Water Resources Map (Map 3).

Town of North Brookfield Open Space Plan

Water Resources

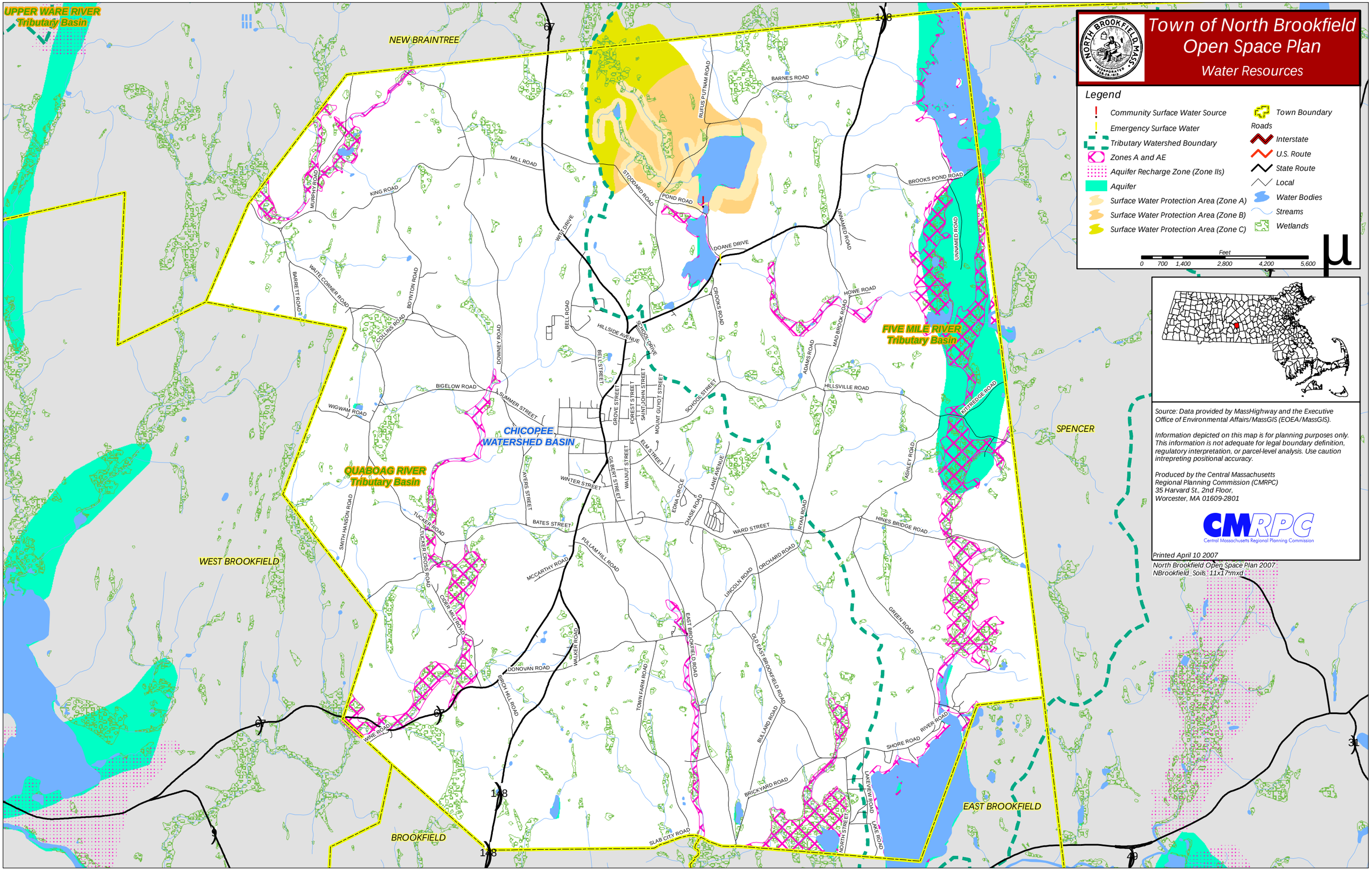
Legend

- Community Surface Water Source
- Emergency Surface Water
- Tributary Watershed Boundary
- Zones A and AE
- Aquifer Recharge Zone (Zone IIs)
- Aquifer
- Surface Water Protection Area (Zone A)
- Surface Water Protection Area (Zone B)
- Surface Water Protection Area (Zone C)
- Town Boundary

Roads

- Interstate
- U.S. Route
- State Route
- Local
- Water Bodies
- Streams
- Wetlands

Feet: 0, 700, 1,400, 2,800, 4,200, 5,600



Source: Data provided by MassHighway and the Executive Office of Environmental Affairs/MassGIS (EOEA/MassGIS).

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D. Vegetation

According to the document, Classification of the Natural Communities of Massachusetts, prepared in 2001 by the Natural Heritage and Endangered Species Program within the Division of Fisheries and Wildlife, North Brookfield falls within the Worcester/Monadnock Plateau. The Plateau contains the most hilly and mountainous areas of the Commonwealth's central upland, with elevations ranging from 500 to 1,800 feet above sea level. Transition hardwoods are common, but northern hardwoods also occur. Forested wetlands are common, and forested and non-forested peat lands are abundant. As mentioned previously, roughly two thirds of North Brookfield consists of forestland. North Brookfield is located at the southern end of the Transition Hardwoods-White Pine-Hemlock Zone, near the border of the more southern Central Hardwoods-Hemlock-White Pine Zone. The dominant vegetation in the latter includes a variety of oaks (black, red, white, chestnut, and scarlet), chestnut, red maple, shagbark and bitternut hickories and black birch. The former zone contains smaller amounts of most of these species mixed with the northern hardwoods (sugar maple, beech and yellow birch) and white ash. White pine and hemlock are of variable abundance in both zones, and their presence is strongly influenced by historical factors like fire and land use history.

Slope position has much to do with the forest types found in North Brookfield. Low areas are usually dominated by red maple along with yellow birch, American elm and sometimes hemlock. Moist but well drained sites with relatively rich soils support sugar maple, white ash and red oak. Drier sites, including ridges and hilltops, typically contain a mixture of oaks in which black, white and red oaks are prominent along with some hickory and red maple. White pine can be abundant in woods originating on abandoned pastures, but is only occasional in other areas. Hemlock is most frequent in damp areas and in stream valleys. Several non-forest vegetation types are represented in North Brookfield. These include marshes and shrub swamps associated with several ponds and streams. Prominent examples occur within Allen Swamp along the shorelines of the North Brookfield and Sevenmile Rivers, along the shorelines of Quaboag and South Ponds, as well as Great and Dunn Brooks. Alfalfa, clovers and various grasses (most of which are non-native) dominate the region's hayfields. Abandoned fields undergoing succession typically support some combination of gray birch, aspen, white pine and red maple.

The Natural Heritage Endangered Species Program within the Division of Fisheries and Wildlife have identified several plant species in North Brookfield that are considered endangered or threatened:

- Endangered species are native species that are in danger of extinction throughout all or part of their range, or are in danger of extirpation from Massachusetts, as documented by biological research. The Variable Sedge and Michaux's Sedge are the two endangered vascular plant species identified in North Brookfield.

- Special concern species are native species which have been documented by biological research or inventory to have suffered a decline that could threaten the species if allowed to continue unchecked, or which occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become threatened within Massachusetts. The only vascular plant species of special concern in North Brookfield is the Climbing Fern.

E. Fisheries and Wildlife

The mix of forest, fields, lakes, ponds, streams, the river and various types of wetlands found in North Brookfield create a diversity of habitats for wildlife. As a consequence, North Brookfield currently supports virtually every species that is common to Central Massachusetts, as well as a few uncommon species.

North Brookfield has a wealth of wetland habitats scattered throughout the town, with a diversity of type as well as size. Lakes, ponds, river, streams, marsh, bog and forest wetlands are all within, or partially within, town borders. These diverse wetlands provide habitat for a variety of fish, reptiles, amphibians, crustaceans, insects, furbearers, waterfowl and other birds. Wetlands are described as our most "dense" habitats because of the abundance of wildlife often found. Not only do they support the wetland species, but also upland species often visit wetlands to drink or feed. River corridors are often natural migration routes. The only three areas in Town listed as 'Estimated Habitats of Rare Wetlands Wildlife" by The Natural Heritage and Endangered Species Program are located on the Five Mile River or its tributary streams. Spotted and Wood Turtles and the Four-Toed Salamander (rare species of special concern as listed by the State Division of Fisheries and Wildlife) are found in the corridor. Great Blue Heron, Osprey, Egret, Northern and Snow Geese, and a variety of ducks are frequent visitors or temporary residents. Beavers are abundant and River Otters are also to be found. Other common species of turtles, frogs, salamanders, crustaceans, and other wetland species populate the river corridor. It is assumed that at least some if not most of these species can also be found in other wetland areas in Town.

Brooks Pond, Lake Lashaway, Perry Pond, and the several small farm ponds also support abundant wildlife, with many species in common with the other wetlands. On rainy nights in early spring, North Street is teeming with small frogs (wood frogs, spring peepers) and salamanders as they migrate from the woods to Perry Pond. The lakes and ponds are often feeding sites for Heron, Egret, Osprey, Cormorant, Mallard, and Black Duck. They are also important stops for migrating waterfowl, with large flocks of Northern Geese, Merganser, and Bufflehead seen during migration.

North Brookfield's upland habitats are a mixture of woodlands, pasture, and brush (old fields). Species diversity is greatest where different habitats converge, especially when adjacent to wetland habitats. Wildlife species commonly occurring in these areas include raccoon, white tailed deer, red and Grey fox, cottontail rabbit, partridge, woodchuck, chipmunk red and Grey squirrel, skunk, opossum several species of hawk and owl, and virtually all song birds common to Central Massachusetts. Moose sightings occur periodically and occasional rumors of black bear have been heard. Eastern coyote have arrived and expanded in numbers in recent years, as have wild turkey (resulting from a stocking by the Division of Fisheries and Wildlife). Pheasant are released in town annually. The Golden Winged Warbler (listed as endangered) has been seen in town on at least two occasions (1975, 1980).

Wildlife species have evolved over centuries to utilize all available habitats. In a town such as North Brookfield, future development not only threatens the total amount of open space but also truncates what remains into isolated patches, often too small to provide satisfactory habitat for food and water, breeding, and cover. In general, the larger the area, the more species occur. Preserving species diversity means preserving: (1) contiguous areas of upland and wetland habitats wherever possible; and at the very least, (2) Preserving wildlife migration corridors, which serve to connect various habitat areas.

Lake Lashaway, Brooks Pond and Perry Pond provide excellent fishing opportunities for warm water species (pan fish, bullhead, pickerel, and bass). Lashaway's drawdown program has actually improved its fishing, especially since the Division of Fisheries and Wildlife has deemed the conditions improved enough for the stocking of Northern Pike. The Five Mile River is stocked with Brook Trout annually, and some of its tributaries support native populations. Many residents avail themselves of the recreational opportunities these fisheries provide, and future growth in town should be carefully managed so as not to degrade these resources.

The Natural Heritage Endangered Species Program within the Division of Fisheries and Wildlife have identified several animal species in North Brookfield that are considered endangered, threatened or are of special concern:

- Endangered species are native species that are in danger of extinction throughout all or part of their range, or are in danger of extirpation from Massachusetts, as documented by biological research. The only endangered species listed in North Brookfield is the Golden-winged Warbler.

- Species of Special Concern are native species that have been documented by biological research to have suffered a decline that could threaten the species if allowed to continue unchecked, or that occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become threatened within Massachusetts. The Wood Turtle is the only animal species of special concern identified in North Brookfield.

The Division of Fish & Wildlife has certified 2 vernal pools in North Brookfield and local conservationists believe there are many more. North Brookfield's State-certified vernal pools and its potential vernal pools are shown on the Unique Features and Scenic Resources Map (Map 4).

Vernal pools are unique wildlife habitats best known for the amphibians and invertebrate animals that use them to breed. Vernal pools, also known as ephemeral pools, autumn pools and temporary woodland ponds, typically fill with water in the autumn or winter due to rising groundwater and rainfall and remain ponded through the spring and into summer. Vernal pools dry completely by the middle or end of summer each year, or at least every few years. Occasional drying prevents fish from establishing permanent populations. Many amphibian and invertebrate species rely on breeding habitat that is free of fish predators.

Some vernal pools are protected in Massachusetts under the Wetlands Protection Act regulations as well as several other federal and state regulations. The Natural Heritage Endangered Species Program (NHESP) serves the important role of officially "certifying" vernal pools that are documented locally. As certification is the first step towards protection, North Brookfield conservationists would do well to document the Town's vernal pools and submit said documentation to the NHESP for certification.

Town of North Brookfield Open Space Plan

Unique & Scenic Features

Legend

- Water Bodies
- Streams
- NHESP Certified Vernal Pools
- NHESP Potential Vernal Pools: NOT equivalent to Certified Vernal Pools
- Wetlands
- NHESP Estimated Habitats for Rare Wildlife
- NHESP BioMap Core Habitat
- NHESP BioMap Supporting Natural Landscape
- Town Boundary

Roads

- Interstate
- U.S. Route
- State Route
- Local

Feet: 0 700 1,400 2,800 4,200 5,600

N W E S

Source: Data provided the Town of North Brookfield, the Central Massachusetts Regional Planning Commission (CMRPC), by MassHighway and the Executive Office of Environmental Affairs/MassGIS (EOEA/MassGIS).

Information depicted on this map is for planning purposes only. This information is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analysis. Use caution intrepreting positional accuracy.

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Worcester, MA 01609-2801

CMRPC Central Massachusetts Regional Planning Commission

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North Brookfield Open Space Plan 2007
NBrookfield_UniqueScenic-11x17.mxd

NEW BRAINTREE
WEST BROOKFIELD
BROOKFIELD
EAST BROOKFIELD
SPENCER

See Insert

Feet: 0 250 500 1,000
1 in = 1,000 ft

INSERT

F. Scenic and Unique Environments:

Map #	Site	Reason
1	Historic Marker South Main Street	This is the site of the original Town Common and the First Meeting House.
2	Historic Marker - Bates Street	This is the location of the first Town Pound
3	Cemetery on Old West Brookfield Rd.	Historic Burial Ground
4	Woolcott House	Historic: Oldest House in North Brookfield for many years. Served as a Tavern on the old Boston Post Road.
5	Bates Observatory	Historic: Located on Bell Hill along the shore of the old reservoir it is said you could see the masts of ships entering Boston Harbor from this point on a clear day.
6	Old Stage Coach Road	Scenic Road
7	The Smallpox Caves	Historic/Archeological
8	Kiminski Farm on Green Road	Scenic area
9	Matthews Fulling Mill/Prouty's Woolen Mill	Historic Site of Industry
10	Murphy Run	Historic site of Town's Combing Mills
11	Reservoir and Surrounding Land	Open Space and Scenic Area and Drinking Water Supply
12	Brookfield Orchards	Tourist Attraction and functioning Orchard
13	Town Forest at the intersection of Routes 67 and 148	Open Space
14	Old Railroad Depot and Tracks	Historic: First rail depot in North Brookfield
15	Town House	Historic Building designed by Eldridge Boyden
16	Bennett's Hill/ North Brookfield Sportsmen's Club	Open Space
17	Coy-Sucker Brook Valley	Open Space
18	Valley View Farm	Open Space
19	Warren Farm	Sugar House and Syrup Farm with Scenic Views
20	Brooks Pond and Surrounding Area	Water Shed and Open Space
21	Five Mile River Corridor	Open Space and Wildlife Management Area
22	LeDoux Farm	Open Space
23	Longview	Historic Recording Studio and Open Space
24	Town Common	Open Space
25	Cider Mill Road and Wetlands	Historic site of North Brookfield's Cider Mills
26	Coy Brook Valley	Scenic Open Space
27	Martin Bergen Property	Historic Martin Bergen was one of the greatest baseball catchers of the 19th century and Open Space
28	Cemetery on Smith-Hanson Rd.	Historic Burial Ground
29	Walnut Grove Cemetery on Elm Street	Historic Burial Ground
30	Old French Cemetery	Historic Burial Ground
31	Maplewood Cemetery	Historic Burial Ground
32	Fire Station School Street	North Brookfield's Historic Engine House
33	St. Joseph's Catholic Church	The 1st Catholic Church in North Brookfield
34	First Congregational Church	Longest established congregation in North Brookfield
35	Union Star Building	1st Movie house in town once used as a Union Congregational Church.
36	Old Town Common	Historic Site
37	Haston Free Public Library	Historic Building
38	Ayres Tavern, Ayers Street	Historic Site

G. Environmental Challenges:

G-1. Surface Water Pollution

Development has resulted in a host of negative impacts to North Brookfield's water resources, including failing septic systems, excessive shoreline development, poor erosion control, or non-point pollution such as washed away salt from roadway maintenance efforts, manure seepage from agricultural uses, fertilizers from lawn maintenance, or pesticide applications. Both State and local water quality monitoring efforts highlight the Town's water quality issues.

The MA Department of Environmental Protection (DEP) designates six classes of water quality, based largely on the standards of the Federal Clean Water Act. Class A refers to those surface water resources that are used as water supply sources. Class B waters are considered safe for fishing, swimming and boating. The remaining four water quality categories cover those surface water resources with lesser water quality. The majority of the surface water resources in the Chicopee Watershed meet the Class B water quality standards. There are, however, several ponds and river segments that do not meet the Class B standards.

Under the regulations of the Federal Clean Water Act, states are required to file a report every two years that identifies those surface waters that are not expected to meet the Act's surface water quality standards (Class A, Class B, etc.). This report, known as the Massachusetts Section 303(d) List of Waters, was last prepared in 2004 through a joint effort of the Executive Office of Energy and Environmental Affairs (EOEEA) and the DEP. The table below lists those surface waters in North Brookfield that, according to the 2004 303(d) report, *do not* meet the water quality standards of the Federal Clean Water Act.

Surface Water Resource	**Sub-Watershed**	**Pollutants/Stressors**
Lake Lashaway	Five Mile River Basin	exotic aquatic species
Dunn Brook	Quaboag River Basin	organic enrichment /low dissolved oxygen

The State has also identified Lake Lashaway as being mercury-impaired. In the report entitled, A TMDL Alternative Regulatory Pathway Proposal for the Management of Selected Mercury-Impaired Waters, prepared jointly by the EOEEA and DEP, Lake Lashaway is categorized as Class C4 waters, meaning it a waterbody impaired by pollution and its restoration will require measures beyond the development and implementation of a Total Maximum Daily Loads (TMDL) plan. The TMDL plan is essentially a "pollution budget" designed to restore the health of the impaired waterbody. The Federal Clean Water Act requires that states must develop a TMDL plan for each waterbody identified as being impaired. Components of a TMDL plan include identifying the source(s) of the pollutant from direct discharges (point pollution sources) and indirect discharges (non-point pollution sources), determining the maximum amount of the pollutant that can be discharged into a specific waterbody to meet water quality standards and developing a plan to meet that goal. The State has yet to prepare a TMDL plan for Lake Lashaway.

It should be noted that North and East Brookfield have been working together in an effort to address the water quality issues affecting Lake Lashaway and have formed a joint committee for this purpose. The 2005 spring Town Meeting season saw North Brookfield appropriate $175,000 for the preparation of a comprehensive wastewater management plan that will look two decades into the future. Unfortunately, East Brookfield voters rejected a similar funding proposal at the spring 2005 Town Meeting. It is likely that this proposal will be resurrected at a later date. If and when such a study is fully funded, it will result in an inter-municipal strategy for dealing with Lake Lashaway's identified water quality problems.

G-2. Identified Polluted Sites in Town

According to the Massachusetts Department of Environmental Protection currently 27 releases have been reported on 22 21E sites (also known as "brownfields") in North Brookfield:

RELEASE TRACKING NUMBER	Address	Site Name	Category	Compliance Status	Date	Chemical Type
2-0000971	BIGELOW ST	CROWLEY FUEL CO	NONE	RAO	5/30/1995	Oil
2-0011571	BRICKYARD AND BULLARD	POLE 17	TWO HR	RAO	3/18/1997	Oil
2-0010509	EAST BROOKFIELD RD	J MAC WIRE CO	TWO HR	RAO	1/13/1995	Oil
2-0013140	24 EAST BROOKFIELD RD	EM INDUSTRIES INC	120 DY	RAO	12/29/2000	Oil and Hazardous Material
2-0013256	70 EAST BROOKFIELD RD	CHASE PRECAST	72 HR	RAO	12/30/2003	Oil
2-0013272	70 EAST BROOKFIELD RD	CHASE PRECAST	TWO HR	RAO	12/30/2003	Hazardous Material
2-0013451	70 EAST BROOKFIELD RD	CHASE PRECAST CORP	120 DY	RAO	12/28/2000	Oil
2-0014233	70 EAST BROOKFIELD RD	CHASE PRECAST	TWO HR	RAO	5/17/2002	Oil
2-0014794	70 EAST BROOKFIELD RD	CHASE PRECAST CONCRETE	TWO HR	RAO	7/29/2003	Oil
2-0014848	70 EAST BROOKFIELD RD	CHASE PRECAST	TWO HR	RAO	8/27/2003	
2-0012824	GREEN RD	POLE 78	TWO HR	RAO	8/11/1999	Oil
2-0011543	10 GROVE ST	AZTEC INDUSTRIES	TWO HR	RAO	1/25/2001	Oil
2-0011130	MILL RD	POLE 13	TWO HR	RAO	4/25/1996	Oil
2-0012111	MILL ST	RAILROAD BED FMR	TWO HR	RAO	4/21/1998	Oil
2-0011690	10 MILL ST	BULK OIL FACILITY	TWO HR	RAO	6/24/1997	Oil
2-0013058	12 MILL ST	CROWLEY FUEL CO	120 DY	RAO	7/30/2004	Oil
2-0015325	10 NEW SCHOOL DR	NORTH BROOKFIELD HIGH SCHOOL	120 DY	RAO	11/19/2004	

2-0016503	193 NORTH MAIN ST	TOWN HALL NORTH BROOKFIELD	120 DY	UNCLASSIFIED	12/14/2006	Oil
2-0010464	229 NORTH MAIN ST	GILLETTE CONTRACTING	TWO HR	RAO	11/23/1994	Oil
2-0014021	326 NORTH MAIN ST	VINER RESIDENCE	TWO HR	RAO	1/26/2005	Oil
2-0010408	327 NORTH MAIN ST	EXPRESS AUTO WASH	120 DY	TIER 2	7/3/1995	Hazardous Material
2-0014964	60 PROSPECT ST	BFI	TWO HR	RAO	12/12/2003	
2-0000568	17 SCHOOL ST	QUABAUG RUBBER	NONE	RAO	4/19/2000	
2-0012560	58 SCHOOL ST	NORTH BROOKFIELD DPW	72 HR	RAO	4/5/1999	Oil
2-0013596	84 SOUTH MAIN ST	GAS STA FMR	120 DY	RAO	8/9/2002	Oil and Hazardous Material
2-0013937	84 SOUTH MAIN ST	CUSHING ST SERVICE STATION	72 HR	RAO	8/9/2002	Oil

In addition to these 22 sites there are two others that have not had a reported release but are of concern locally. A site on Brown Street that has functioned as an auto repair facility and scrap metal reclamation area is viewed as a source of possible contamination and the concern is further increased due to the proximity of the site to several small brooks and an area of Town that is serviced by private wells. The other site is located on Oakham Road (Rt. 148). This site has been a long-term automobile repair facility, which previous owners failed to maintain properly. Currently there is a lower intensity repair facility, however, the Town fears the damage has already been done.

North Brookfield no longer operates a landfill facility. This facility was capped in 1996 and is monitored for air and groundwater quality. The Town also monitors several private wells in the area to ensure there is not contamination. The Town now uses a portion of the landfill property for its successful recycling program. The recycling center on East Brookfield Road is open every Wednesday mornings and all day on Saturday and accepts the following materials: plastic, glass, mixed paper, newspaper, cardboard, antifreeze, motor oil, car batteries, florescent light bulbs, tires and scrap metal. Also, plastics labeled #1, #2, and #3 are accepted, along with bottles eligible for deposit. The site also contains a building material "take it or leave it" center for the recycling of household goods, furniture and children's toys. This site also serves as the Town's transfer station. The average weekly amount of solid waste collected in 2006 was roughly 14.2 tons per week. This total only represents a portion of the Town's trash as residents have the option of purchasing private curbside collection. The Town also joins with the neighboring Brookfields to sponsor a household hazardous waste collection day twice a year. The four Brookfields and Spencer pay for their residents to participate in these collections. Residents from Oakham, New Braintree and Hardwick can participate as well, but must pay at the site for the collection and disposal of their waste.

G-3 Erosion, Chronic Flooding & Sedimentation

The North Brookfield, Highway Superintendent and Board of Health were interviewed regarding the issues of erosion, chronic flooding and sedimentation in Town. No such problems were identified at this time.

SECTION 5: INVENTORY OF LANDS OF CONSERVATION & RECREATION INTEREST

Article 97 of the State Constitution provides permanent protection for certain lands acquired for natural resources purposes, meaning "conservation, development and utilization of the agricultural, mineral, forest, water, air and other natural resources." Lands of this nature are often owned by the municipal conservation commission, recreation commission, water department, or by a state or federal conservation agency (i.e., the EOEA or the Division of Fish & Wildlife). Private, public and non-profit conservation and recreation lands can also be protected under Article 97. Removing the permanent protection status of such lands is extremely difficult, as is evidenced by the following required steps:

- The municipal conservation commission or recreation commission must vote that the land in question is surplus to its needs;
- The removal of permanent protection status must be approved at a Town Meeting/City Council vote and pass by a 2/3 vote;
- The municipality must file an Environmental Notification Form with the EOEA's Massachusetts Environmental Policy Act (MEPA);
- The removal of permanent protection status must be approved by the State Legislature and pass by a 2/3 vote; and
- In the case of land either acquired or developed with grant assistance from the EOEEA's Division of Conservation Services, the converted land must be replaced with land of equal monetary value and recreational or conservation utility.

In other words, it is intentionally difficult to remove a property's permanent protection status so that it may be developed. Private lands can also be protected in perpetuity through deed restrictions or conservation easements. Municipal lands under active use (schools, town halls, highway department facilities, police/fire facilities, etc.) are ***not*** considered permanently protected, nor are private lands that are within the State's special taxation programs (Chapter 61)

Table OSR-8
North Brookfield Land Protection Summary

Description and Status	# of Parcels	Acres
Town Owned Limited Protection (municipal buildings)	20	76.37
Town-Owned Permanently Protected (conservation land, cemeteries, recreation)	31	409.67
State-Owned Permanently Protected	20	745.12
Privately-Owned Permanently Protected (Mass Audubon, APR)	18	1,052.49
Privately Owned Limited Protection	140	4,164.38
Total Amount of Land Permanently Protected	35	2,207.28
Total Amount of Land Under Limited Protection	160	4,240.75

The vast majority of privately owned parcels that have "limited protection" status (121 of 140 such parcels) fall under the Chapter 61 taxation program that offers a lower valuation to property owners who keep their land in its natural forested state. The majority of these properties are located in the north and west parts of Town but there are Chapter 61 properties located throughout North Brookfield. North Brookfield has 2,207 acres of land under permanent protection (or 14.4% of the Town's total land area), and 4,241 acres of land having limited protection status (or 30.2% of the Town's total land area). All told, North Brookfield has 6,238 acres of land (or close to half of Town's total land area) having some degree of protection.

B. Town-Owned Recreation Facilities

The Town of North Brookfield has a Playground Committee that is responsible for recreation planning and programming. The members of this three-person committee are elected and it usually meets once a month. The Committee does not have any paid staff. There are six active recreation facilities in Town and a fourth facility (Town Beach) that North Brookfield shares with East Brookfield.

Table OSR-9
Permanently Protected Land in North Brookfield

Parcel Number	Owner/Manager	Use	Funds Used	Condition	Recreation Potential	Public Access	Acres	Zoning	Protection
Map 4 Block 84 Lot 70	NB Water Department	Watershed Protection	Town	Excellent	Low	Free	0.19	R-66	Perpetuity
Map 9 Block 84 Lot 44	NB Water Department	Watershed Protection	Town	Excellent	Low	Free	0.44	R-66	Perpetuity
Map 28 Block 67 Lot 99	NB Water Department	Pump Station	Town	Excellent	Low	Free	1.00	R-30	Perpetuity
Map 4 Block 84 Lot 74	NB Water Department	Watershed Protection	Town	Excellent	Low	Free	1.02	R-66	Perpetuity
Map 4 Block 86 Lot 9	NB Water Department	Watershed Protection	Town	Excellent	Low	Free	1.32	R-66	Perpetuity
Map 21 Block 83 Lot 40	NB Water Department	Watershed Protection	Town	Excellent	Low	Free	1.40	R-30	Perpetuity
Map 4 Block 84 Lot 88	NB Water Department	Watershed Protection	Town	Excellent	Low	Free	2.70	R-66	Perpetuity
Map 9 Block 84 Lot 52	NB Water Department	Watershed Protection	Town	Excellent	Low	Free	2.82	R-66	Perpetuity
Map 3 Block 84 Lot 91	NB Water Department	Watershed Protection	Town	Excellent	Low	Free	3.00	R-66	Perpetuity
Map 9 Block 84 Lot 48	NB Water Department	Watershed Protection	Town	Excellent	Low	Free	3.56	R-66	Perpetuity
Map 43 Block 57 Lot 59	NB Water Department	Watershed Protection	Town	Excellent	Low	Free	15.93	IND	Perpetuity
Map 15 Block 83 Lot 74	NB Water Department	Water Dept.	Town	Excellent	Low	Free	19.00	R-30	Perpetuity
Map 21 Block 80 Lot 14	NB Water Department	Watershed Protection	Town	Excellent	Low	Free	27.38	R-30	Perpetuity
Map 15 Block 83 Lot 75	NB Water Department	Watershed Protection	Town	Excellent	Low	Free	114.00	R-30/R-66	Perpetuity
Map 21 Block 83 Lot 10	Town of North Brookfield	Recreation	Town	Good	High	Free	62.25	R-11/R-30/R/66	Perpetuity

Map 101 Block 24 Lot 13	Town of North Brookfield	Recreation	Town	Good	High	Free	0.81	R-11	Perpetuity
Map 106 Block 3 Lot 188	Town of North Brookfield	Town Park	Town	Good	High	Free	0.15	R-11	Perpetuity
Map 36 Block 51 Lot 30	Town of North Brookfield	Cemetery	Town	Excellent	Low	Free	0.23	R-66	Perpetuity
Map 19 Block 65 Lot 20	Town of North Brookfield	Cemetery	Town	Excellent	Low	Free	0.58	R-66	Perpetuity
Map 33 Block 100 Lot 95.A	Town of North Brookfield	Cemetery	Town	Excellent	Low	Free	0.80	R-30	Perpetuity
Map 29 Block 7 Lot 101	Town of North Brookfield	Cemetery	Town	Excellent	Low	Free	2.00	R-66	Perpetuity
Map 103 Block 41 Lot 20	Town of North Brookfield	Cemetery	Town	Excellent	Low	Free	2.46	R-11	Perpetuity
Map 38 Block 61 Lot 44	NB Conservation Commission	Conservation	Town	Excellent	Low	Free	3.87	Ind	Perpetuity
Map 104 Block 10 Lot 50	Town of North Brookfield	Town Common	Town	Good	High	Free	4.50	R-66	Perpetuity
Map 32 Block 7 Lot 100	Town of North Brookfield	Cemetery	Town	Excellent	Low	Free	12.10	R-66	Perpetuity
Map 19 Block 65 Lot 13	Town of North Brookfield	Town Forest	Town	Excellent	Medium	Free	14.00	R-66	Perpetuity
Map 37 Block 1 Lot 20	Town of North Brookfield	Town Forest	Town	Excellent	Medium	Free	16.50	R-30/R-66	Perpetuity
Map 23 Block 102 Lot 16	Town of North Brookfield	Town Forest	Town	Excellent	Medium	Free	16.80	R-66	Perpetuity
Map 45 Block 105 Lot 98	Town of North Brookfield	Town Forest	Town	Excellent	Medium	Free	17.86	R-66	Perpetuity
Map 38 Block 56 Lot 56	NB Conservation Commission	Conservation	Town	Excellent	Low	Free	28.10	BG/Ind./ R-66	Perpetuity
Map 37 Block 1 Lot 19	Town of North Brookfield	Town Forest	Town	Excellent	Medium	Free	32.90	R-66	Perpetuity
Map 20 Block 78 Lot 105	Roman Catholic Bishop of Worcester	Cemetery	Private	Excellent	Low	Free	4.21	R-66	Perpetuity

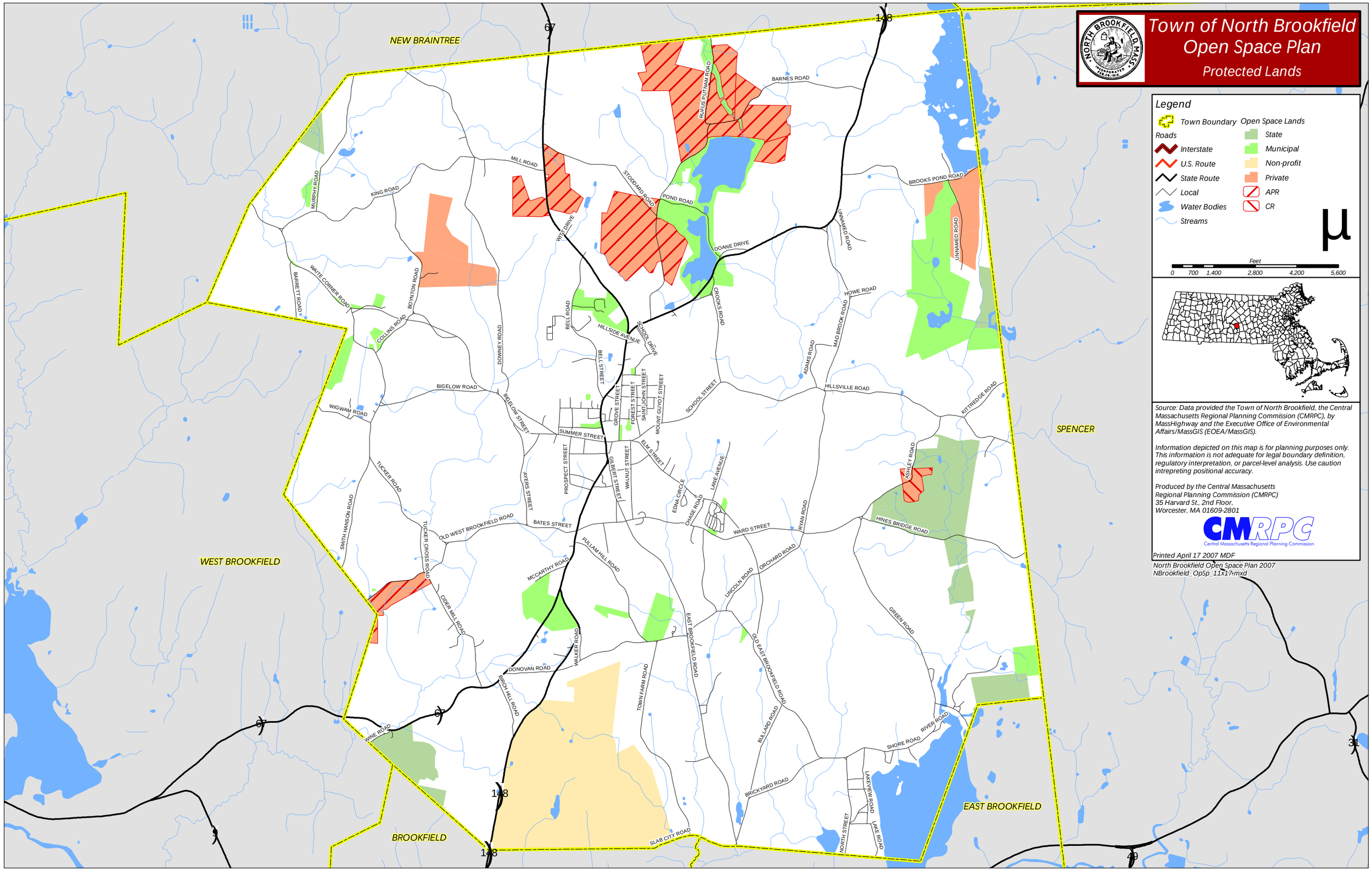
Map 20 Block 78 Lot 103	Roman Catholic Bishop of Worcester	Cemetery	Private	Excellent	Low	Free	15.06	R-66	Perpetuity
Map 47 Block 60 Lot 19	MASS AUDUBON SOCIETY	Conservation	Private	Excellent	Medium	Free	2.68	R-66	Perpetuity
Map 46 Block 55 Lot 80	MASS AUDUBON SOCIETY	Conservation	Private	Excellent	Medium	Free	533.90	R-66	Perpetuity
Map 26 Block 102 Lot 18	Com. of MA Water Resources Division	Watershed Protection	State	Excellent	Low	Prohibited	28.80	R-66	Perpetuity
Map17 Block 91 Lot 37	Com. of MA Water Resources Division	Watershed Protection	State	Excellent	Low	Prohibited	176.70	R-66	Perpetuity
Map 45 Block 105 Lot 92	Com. of MA State Forest Region 3	State Forest	State	Excellent	Medium	Free	37.00	R-66	Perpetuity
Map 35 Block101 Lot 8	Com. of MA State DFW	Five Mile River WMA	DFWELE	Excellent	Medium	Free	2.12	R-66	Perpetuity
Map 35 Block 103 Lot 6	Com. of MA State DFW	Five Mile River WMA	DFWELE	Excellent	Medium	Free	2.82	R-66	Perpetuity
Map 40 Block103 Lot 59	Com. of MA State DFW	Five Mile River WMA	DFWELE	Excellent	Medium	Free	3.00	R-66	Perpetuity
Map 41 Block 54 Lot 5	Com. of MA State DFW	State	DFWELE	Excellent	Medium	Free	8.14	R-66	Perpetuity
Map 35 Block101 Lot 10	Com. of MA State DFW	Five Mile River WMA	DFWELE	Excellent	Medium	Free	9.25	R-66	Perpetuity
Map 41 Block 54 Lot 3	Com. of MA State DFW	State	DFWELE	Excellent	Medium	Free	11.25	R-66	Perpetuity
Map 40 Block 103 Lot 53	Com. of MA State DFW	Five Mile River WMA	DFWELE	Excellent	Medium	Free	12.00	R-66	Perpetuity
Map 35 Block 101 Lot 38	Com. of MA State DFW	Five Mile River WMA	DFWELE	Excellent	Medium	Free	14.32	R-66	Perpetuity
Map 14.Q Block 1704 Lot 102.1	Com. of MA State DFW	State	DFWELE	Excellent	Medium	Free	14.32	R-66	Perpetuity
Map 41 Block 1 Lot 72	Com. of MA State DFW	State	DFWELE	Excellent	Medium	Free	15.01	R-66	Perpetuity
Map 41 Block 1 Lot 70	Com. of MA State DFW	State	DFWELE	Excellent	Medium	Free	15.66	R-66	Perpetuity

Map 1 Block 72 Lot 39	Com. of MA State DFW	North Brookfield WMA	DFWELE	Excellent	Medium	Free	20.98	R-66	Perpetuity
Map 40 Block 103 Lot 29	Com. of MA State DFW	Five Mile River WMA	DFWELE	Excellent	Medium	Free	22.00	R-66	Perpetuity
Map 14.Q Block 1802 Lot 103	Com. of MA State DFW	State	DFWELE	Excellent	Medium	Free	50.06	R-66	Perpetuity
Map 6 Block 72 Lot 38	Com. of MA State DFW	North Brookfield WMA	DFWELE	Excellent	Medium	Free	57.00	R-66	Perpetuity
Map 35 Block 103 Lot 10	Com. of MA State DFW	Five Mile River WMA	DFWELE	Excellent	Medium	Free	96.75	R-66	Perpetuity
Map 14.Q Block 1704 Lot 102	Com. of MA State DFW	State	DFWELE	Excellent	Medium	Free	147.94	R-66	Perpetuity
Map 1 Block 75 Lot 63	Morin, Roland W & Judith	APR Land	Private	Good	Low	Free	58.70	R-66	Perpetuity
Map 3 Block 84 Lot 75	Tierney, Ann	APR Land	Private	Good	Low	Free	96.81	R-66	Perpetuity
Map 4 Block 86 Lot 5	Mendala, Sophie (Estate of)	APR Land	Private	Good	Low	Free	8.70	R-66	Perpetuity
Map 4 Block 86 Lot 13	Mendala, Sophie (Estate of)	APR Land	Private	Good	Low	Free	38.01	R-66	Perpetuity
Map 4 Block 86 Lot 14	Mendala, Sophie (Estate of)	APR Land	Private	Good	Low	Free	35.64	R-66	Perpetuity
Map 4 Block 86 Lot 16	Tierney, Ann	APR Land	Private	Good	Low	Free	14.26	R-66	Perpetuity
Map 8 Block 1 Lot 79	Cutrumbes, John G & Carol J	APR Land	Private	Good	Low	Free	39.26	R-66	Perpetuity
Map 8 Block 81 Lot 92	Cutrumbes, John G & Carol J	APR Land	Private	Good	Low	Free	28.00	R-66	Perpetuity
Map 10 Block 84 Lot 60	Gregoire, Robert E Jr. & Kathy J	APR Land	Private	Excellent	Low	Free	10.10	R-66	Perpetuity
Map 15 Block 84 Lot 35	Gregoire, Robert E Jr. & Kathy J	APR Land	Private	Excellent	Low	Free	83.90	R-30/R-66	Perpetuity
Map 15 Block 84 Lot 36	Gregoire, Robert E Jr. & Kathy J	APR Land	Private	Excellent	Low	Free	21.70	R-30/R-66	Perpetuity

Map 15 Block 84 Lot 39	Gregoire, Robert E Jr. & Kathy J	APR Land	Private	Excellent	Low	Free	3.20	R-66	Perpetuity
Map 30 Block 63 Lot 3	Edwards, George L & Hannah S	APR Land	Private	Good	Low	Free	21.56	R-66	Perpetuity
Map 36 Block 51 Lot 23	Edwards, George L & Hannah S	APR Land	Private	Good	Low	Free	36.80	R-66	Perpetuity

Town of North Brookfield Open Space Plan

Protected Lands



Legend

Town Boundary

Roads
- Interstate
- U.S. Route
- State Route
- Local
- Water Bodies
- Streams

Open Space Lands
- State
- Municipal
- Non-profit
- Private
- APR
- CR

Feet: 0, 700, 1,400, 2,800, 4,200, 5,600

Source: Data provided the Town of North Brookfield, the Central Massachusetts Regional Planning Commission (CMRPC), by MassHighway and the Executive Office of Environmental Affairs/MassGIS (EOEA/MassGIS).

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35 Harvard St., 2nd Floor,
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North Brookfield Open Space Plan 2007
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SECTION 6: COMMUNITY VISION

Create and Protect Open Space:

1. Create an Agricultural Commission to aid local farmers in continuing to work the land. Working farms are open space and a valuable part of the Town's rural character.
2. Encourage conservation easement donations or sales to private land conservation organizations, from large landowners.
3. Develop an Open Space plan to encourage the above and to obtain state, federal and private funding for preservation.
4. Focus growth in areas of Town where services already exist, i.e. water, sewer and roads.
5. Create an open space residential bylaw as a vehicle to properly develop new housing and increase open space in North Brookfield.

Improve Main Street/Downtown Area:

1. Create mixed-use zones, i.e., residential/retail zoning for village. Example: retail shop with apartments above.
2. Create an economic development strategy to attract new commercial use to the downtown area.
3. Coordinate with East Brookfield to implement bylaws that allow pedestrian and bicycle usage of the railroad right of way.
4. Implement bylaws to encourage traditional and historical village architectural styles. Implement historical building preservation bylaws.
5. Develop a viable strategy for the reuse of the former Aztec Property
6. Create a more pedestrian friendly downtown through increased sidewalks and proper signage.

Protect Ponds, Rivers & Wetlands:

1. Expand the current State protection of ponds and wetlands, e.g., expand buffer zones and exclude building in buffer zones. Include protection of brooks and other wetlands that feed the primary rivers and ponds in order to protect water quality and wildlife.
2. Implement bylaws for the prevention of residential/commercial storm run-off into vernal pools, wetlands, ponds, rivers, streams or onto roads; mandate usage of storm basins for new development.
3. Implement bylaws on the taking of upland soils near wetlands, ponds, rivers and brooks.
4. Work with state and East Brookfield governments to implement bylaws on boat propeller cleaning and inspections for invasive plants.
5. Focus protection on the following areas:
    a. Five Mile River Basin,
    b. Uplands surrounding Lake Lashaway and Brook's Pond
    c. Lands with wildlife populations and large unbroken forest area

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The above vision represents the Master Plan Committee's first attempt at articulating community goals. It is anticipated that these goals will be modified and amended as the master planning process unfolds.

SECTION 7: ANALYSIS OF NEEDS:

A. Summary of Resource Protection Needs

North Brookfield's resource protection needs are primarily two-fold: finding a way to remedy the water quality problems plaguing Lake Lashaway and finding a way to protect as much land as possible within the contiguous Supporting Natural Landscapes in the southern portion of the Town and Core Habitat areas located in the northwest on the New Braintree town line. With limited funding available and rising real estate prices, there is no way the Town could ever afford to protect the entirety of the State-identified Core Habitat areas. In an effort to address this situation, the Master Plan Committee has endeavored to prioritize the properties included in its land protection strategy as presented in Section 9 of this document (Five-Year Action Plan).

B. Summary of Community Needs

North Brookfield's Master Plan Committee utilized two methods to obtain public input in the open space and recreation planning process: a citizen survey and a public forum. In the spring of 2006 the Committee distributed surveys to all 1,842 households in North Brookfield and of those 642 chose to respond. This represents a 35% response rate, well above the normal response rate of 15-25%. The high response rate is indicative of a population that is concerned about being involved in the formulation of local policy. The survey was intended to cover a multitude of topics that impact the Master Plan process and included several questions that were specific to recreation activities in North Brookfield. These questions and summary of the responses are listed below. A public forum was held on 2 May 2007, to further verify the preferences of the Town's citizens. Feedback given at this event affirmed that which was expressed in the survey responses.

Master Plan Survey Question #1: What do you like about living in North Brookfield?
Opens spaces: Roughly 62% of respondents indicated open spaces as the reason they like living in North Brookfield. This indicates that the residents feel a connection with the natural environment and preserving it will aid in retaining and possibly attracting new residents.

Master Plan Survey Question #15: In an effort to preserve North Brookfield's rural character, would you be in favor of any of the following initiatives?

Protecting Open Space: Nearly 65% of those who completed the survey chose this, making it the number one response to this question. This points to the fact that residents associate open space with rural character, which was the number one reason people like living in North Brookfield. This can be further interpreted to indicate there will be support by residents for the purchase of properties under Ch. 61 protection should the opportunity arise.

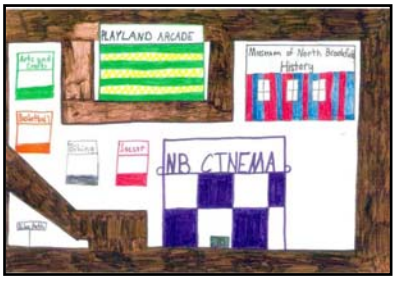
Protect Farming with an Agriculture Commission: This was the second most popular answer among those that completed the survey with 59% indicating their support. The protection of farming works to preserve open space through allowing owners to work the land in its natural state rather than selling out to developers. The farm industry in Massachusetts is shrinking and more and more farmers are being forced to sell their property to guarantee financial security. Support from local government and Town residents can be an important part of farms continued success in North Brookfield.

Master Plan Survey Question #16: What types of recreation opportunities would you like to see more of in North Brookfield?

The top three responses were Bike Trails, Theater and Hiking Trails. Bike and hiking trails are recreation activities that mirror the rural quality of life that is mentioned as an important part of life in North Brookfield.

Master Plan Survey Question #17: Rate the services.

Recreation: Roughly 45% rated this service as excellent or good and 55% rated it fair to poor. This was only one of two Town services that received more fair/poor responses than excellent/good responses. It was mentioned at the public forum that there was a lack of programmatic activities for children in North Brookfield. It was also mentioned that there are many private organizations in Town that provide programming but not all children feel comfortable taking advantage of these for a variety of reasons. This may be the basis of the fair/poor responses, especially since the Town recently built a new school complex that includes several athletic fields.



In addition to the Master Plan survey results described above, North Brookfield planners can utilize the survey results from the document, Massachusetts Outdoors 2004, the Statewide Comprehensive Outdoor Recreation Plan (SCORP) prepared by the EOEEA Division of Conservation Resources (DCR) in 2000. As part of the SCORP, the DCR conducted a statewide recreation user survey and the results were further broken down by region. The 2004 SCORP survey identified the following recreation needs for Central Massachusetts:

- Field-Based Activities: The survey identified playgrounds to be the most needed field-based recreation resource, followed by golfing.

- Passive Recreational Activities: The survey identified picnicking facilities to be the most needed passive recreation resource, followed by wildlife and nature study areas.

- Trail-Based Activities: The survey identified places for walking to be the most needed trail-based recreation resource, followed by places for biking (both mountain and road).

- Water-Based Activities: The survey identified places for swimming to be the most needed water-based recreation resource, followed by boating (both motorized and non-motorized) and canoeing.

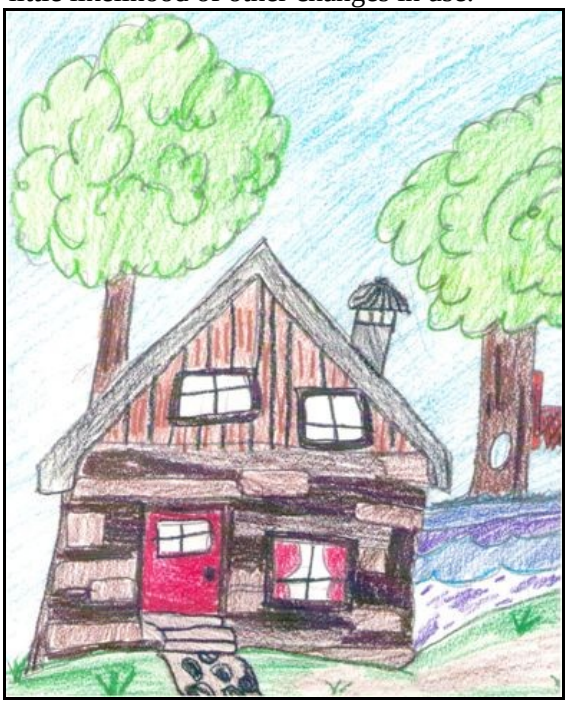
- Wilderness Activities: The survey identified places to hike to be the most needed wilderness resource.

In regards to the recreation needs of special populations, North Brookfield built a new Junior/Senior High School in 2004. This relatively new facility offers school-aged children and teenagers a variety of recreation facilities including a gym, a softball field, a soccer field, and a basketball court. In terms of recreation activities for seniors the Senior Center offers a variety of activities and a place for them to socialize.

What the Kids Say: “We need sports all year round.”

C. Management Needs, Potential Change of Use

The Town of North Brookfield has limited financial resources and the current fiscal situation of our State is likely to result in fewer resources for the purposes of open space protection and recreation. Identification of funding and staffing resources will be key elements of the Town's strategy for open space acquisition and upgrading recreation facilities. Several of the properties identified for protection on the Action Plan Map (Map 6) are currently in the State's Chapter Lands program. Should North Brookfield purchase land currently classified as agriculture under Chapter 61A it is probable that the land would instead be used for conservation or recreation purpose. Thus the land would technically undergo a change in use. However, there is little likelihood of other changes in use.



What the Kids Say: "Do you want to keep your kids active? If you do, then I am going to tell you about a few of my plans……"

SECTION 8: GOALS AND OBJECTIVES

Goal 1: Maintain North Brookfield's Rural Character

Objectives:

1. Minimize development impacts by implementing appropriate zoning controls and strategies.
2. Preserve the scenic resources for future generations by facilitating the placement of conservation easements and purchasing land outright.
3. Ensure the future prosperity of local farms.
4. Encourage appropriate development siting, design and landscaping to further enhance the existing character of North Brookfield.

Goal 2: Preserve and Enhance North Brookfield's Water Resources

Objectives:

1. Protect the municipal water supply.
2. Identify additional/alternate sources for municipal water supply.
3. Protect and improve the quality of surface waters.
4. Protect important wetland areas.
5. Protect ground water resources.

Goal 3: Enhance the Community's Knowledge About Open Space in North Brookfield.

Objectives:

1. Create an informational packet, including a map, about North Brookfield's open spaces, to introduce new residents and visitors to the Town's resources.
2. Compile a collection of educational materials to be made available to teachers, at various levels, that can be incorporated into a variety of different curriculums (i.e. science, history etc.).
3. Create a website or a page on the Town website dedicated to open space in North Brookfield.
4. Explore opportunities for ecotourism in North Brookfield.

Goal 4: Provide North Brookfield with Varied and Well Maintained Recreational Opportunities and Facilities

Objectives:

1. Maintain existing facilities, with improvements where necessary.
2. Construct new Facilities as needed.
3. Expand opportunities for passive outdoor recreation (hiking, fishing, canoeing, etc.)
4. Existing or planned facilities and opportunities should accommodate all age groups and user groups within the community.

> What the Kids Say: "Open Space is important. We need a place for wildlife and recreational activities."

SECTION 9: FIVE-YEAR ACTION PLAN

* Important Note: Successful implementation and completion of any or all of these strategies is contingent upon sufficient availability of funding and staffing levels in the appropriate department, board or commission assumed to be responsible for each individual strategy. Likewise, projected timeframes may need to change depending upon the availability of funding and staffing. A graphic depiction of the Town's Five-Year Action Plan can be seen on the Action Plan Map (Map 6) that follows the matrix below.

Goal 1: Maintain North Brookfield's Rural Character

Objective	Year	Responsible Party
1. Minimize development impacts by implementing appropriate zoning controls and strategies.	Ongoing	Planning Board, Zoning Board of Appeals, Bylaw Review Com.
a. Create and Open Space Residential Bylaw with smaller lot size and open space provisions that must be approved by the Conservation Commission and Planning Board.	3-4	Bylaw Review Committee
b. Create incentives for developers who voluntarily create any of the following: open land, recreation areas and wildlife connecting corridors as part of their development plans. These incentives could include density bonuses, the waiving of fees or a speedier permitting process. Working with developers and engineers early on in the process will ease tension and get the best results.	1	Planning Board, Zoning Board of Appeals
c. Update Zoning Bylaws Table of Uses with a look at by right uses and the impacts they have on the areas zoned to allow them.	2-4	Bylaw Review Committee
d. Create new Open Space zoning.	3-4	Bylaw Review Comm.
2. Preserve the scenic resources for future generations by facilitating the placement of conservation easements and purchasing land outright.	Ongoing	Planning Board, Zoning Board of Appeals, Open Space Com.
a. Establish land purchase priorities and create map.	1	Open Space Committee
b. Develop a working relationship with a local land trust.	1-2	Open Space Committee
c. Notify land owners in these areas of tax incentives, potential for conservation easement purchases, etc.; and introduce landowners to the land trust.	2-3	Planning Board, Open Space Committee
d. Work Toward establishing a relationship between the landowners and act as a liaison between them and the land trust.		Open Space Committee
e. Investigate and promote the adoption of the Community Preservation Act (CPA) bylaw within the town in order to raise funds.	1	Open Space Committee, Historic Committee, Selectmen
f. Determine available funding tools, i.e., grants, Town fees/taxes, Town credits for the purchase/preservation of open space.	2-3	Planning Board, Finance Committee
g. Work with Selectmen, Finance and Conservation committees, and the Planning Board in determining appropriate funding tools.	2	Open Space Committee
h. Have Town establish a grant-writing program; apply for grants.	1-2	Planning Board, Selectmen
i. Approach Selectmen to set up a special open space account for donations, grants, tax-surcharges, (if any) to be used to purchase open space.	3-4	Open Space Committee
3. Ensure the future prosperity of local farms	Ongoing	Agriculture Com.
a. Create a Right-to-Farm Bylaw to reinforce North Brookfield's commitment to agriculture and the residents who rely on it for their livelihood.	2-3	Agriculture Commission, Master Plan Implementation Committee
b. Form an Agricultural Commission to work with local farmers and regional.	1	Master Plan Implementation Committee

4 Encourage appropriate development siting, design and landscaping to further enhance the existing character of North Brookfield.		
a. Create a manual for developers, surveyor and engineers to guide them to better planning. This should be readily available at the Town Clerk's office and included with the Zoning Bylaw booklet. Clearly express what you are looking for developers and their engineers to produce. Encourage developers of all kinds to be innovative and create better developments. Make certain that all criteria and specifications are coordinated between the Planning Board, Board of Health and the Conservation Commission.	4	Planning Board, Board of Health, Zoning Board of Appeals, Building Inspector
b. Create an up-to –date Open Space map of North Brookfield showing all existing open land including wetlands and uplands to use as a guide by planners (Planning Board, Conservation Commission) and developers to facilitate the planning process by engineers and developers for the creation of open space land, recreation areas, and wildlife corridors connecting to adjacent wetlands and uplands. (Note this is not a zoning map).	3	Planning Board, Conservation Commission, Highway Department, Open Space Committee

What the Kids Say: "The Kids in North Brookfield have some ideas about making things change in our Town."

Goal 2: Preserve and Enhance North Brookfield's Water Resources

Objective	Year	Responsible Party
1. Protect the municipal water supply.	Ongoing	Water Dept., Conservation Com., Board of Health
a. Identify potential point and non-point water pollution sources.	3	Conservation Com., Board of Health, Water Dept., Highway Dept.
b. Mitigate potential pollution through regulatory measures, land preservation and zoning.	4	Conservation Com., Board of Health, Highway Dept., Water Dept.
c. Appoint a Conservation Agent, paid by the Town, to inspect sites at proposed predevelopment stage, and when mitigation measures are in place, and issue certificate or letter of compliance to begin. Agent to inspect the site at random during construction for compliance. Agent to make recommendations on mitigating measures for Conservation Commission as each site is different.	2`	Board of Selectmen, Conservation Commission
2. Identify additional/alternate sources for municipal water supply.	2	Water Dept., Conservation Com.,
a. Determine the viability of the suspected aquifer, identified by the State, located beneath the Five Mile River.	2	Water Dept., Conservation Com.,
b. Explore possibility of purchasing excess water from neighboring towns.	3-4	Selectmen, Water Dept.
3. Protect and improve the quality of surface waters.	Ongoing	Conservation Com., Highway Dept.
a. Develop a Stormwater Management Policy and Bylaw to address the potential pollution issues associated with uncontrolled stormwater runoff.	1-2	Bylaw Review Com., Highway Dept., Planning Board, Board of Health, Conservation Com.
b. Purchase or preserve open watershed lands with water tributaries into Doane Pond, Horse Pond, Brooks Pond and Lake Lashaway via grants, the Town raising funds or tax credits.	Ongoing	Conservation Com., Water Dept.
i. Determine likely areas and landowners to incorporate into overall open space land purchase/preservation priority list.	1	Master Plan Com., Water Dept.
ii. Determine other available funding tools, i.e. grants, Town fees/taxes, Town credits for the purchase preservation of open space.	Ongoing	Master Plan Com., Conservation Com., Finance Com., Water Dept.
c. Coordinate and support private lake association efforts in protecting pond/lake water quality.	Ongoing	Water Dept., Conservation Com., Master Plan Com., Board of Health
i. Assist in investigating and prioritization of non-point source pollution in the pond/lake watersheds.		
ii. Assist in the evaluation and implementation of management strategies to manage nuisance vegetation.		
iii. Assist in outreach and education for watershed residents.		
d. Have Town establish a grant-writing program; apply for grants.	1-2	Planning Board, Selectmen
e. Approach Selectmen to set up a special open space account for donations, grants, tax surcharges to be used to purchase open space.	3-4	Open Space Committee

4. Protect important wetland areas.	Ongoing	Conservation Com.
a. Write a presentation for wetlands protection.	4	Conservation Com., Bylaw Review Com.
b. Assemble a wetlands protection bylaw.	4	Conservation Com., Bylaw Review Com.
c. Educate public and hold hearings on wetlands protection.	4	Conservation Com., Bylaw Review Com.
d. Develop a Stormwater Management Policy and Bylaw to address the potential pollution issues associated with uncontrolled stormwater runoff.	1-2	Bylaw Review Com., Highway Dept., Planning Board, Board of Health, Conservation Com.
5. Protect ground water resources.		
a. Identify potential point and non-point water pollution sources.	3	Highway Dept., Water Dept., Conservation Com., Board of Health
b. Develop a Stormwater Management Policy and Bylaw to address the potential pollution issues associated with uncontrolled stormwater runoff.	1-2	Bylaw Review Com., Highway Dept., Planning Board, Board of Health, Conservation Com.
c. Appoint a Conservation Agent, paid by the Town, to inspect sites at proposed predevelopment stage, and when mitigation measures are in place, and issue certificate or letter of compliance to begin. Agent to inspect the site at random during construction for compliance. Agent to make recommendations on mitigating measures for Conservation Commission as each site is different.	2	Board of Selectmen, Conservation Commission

Goal 3: Enhance the Community's Knowledge About Open Space in North Brookfield.

Objective	Year	Responsible Party
1. Create an informational packet, including a map, about North Brookfield's open spaces, to introduce new residents and visitors to the Town's resources.	1-3	Open Space Com.
a. Create an up-to –date Open Space map of North Brookfield showing all existing open land including wetlands and uplands that identifies recreation areas, and wildlife corridors connecting to adjacent wetlands and uplands and other notable places.	1	Planning Board, Conservation Com., Open Space Com.
b. Use the Open Space map to evaluate useable and interesting resources and gather further information on these resources to encourage and aid in future use.	1-2	Open Space Com., Playground Com.
c. Create an Open Space presentation board for use at community functions.	1-2	Open Space Com., Planning Board
d. Assemble this information into a flyer/pamphlet/packet.	2-3	Open Space Com., Playground Com.
2. Compile a collection of educational materials to be made available to teachers, at various levels, that can be incorporated into a variety of different curriculums (i.e. science, history etc.).	Ongoing	Open Space Com., School Com.
a. Identify curriculum areas that can be enhanced with North Brookfield specific materials.	3-4	School Com., Open Space Com.
b. Develop age and curriculum appropriate lesson plans that stress the importance of open space and historic places in North Brookfield.	3-5	School Com., Open Space Com.
c. Continue to update and refine the curriculum as needed.	Ongoing	School Com., Open Space Com.
3. Create a website or a page on the Town website dedicated to open space in North Brookfield.	1-3	Technology Com., Open Space Com., Planning Board
a. Assemble information on open space and recreation into digital format and place on the internet to allow citizens and other interested parties the ability to access it as needed.	1-3	Technology Com., Open Space Com., Planning Board
4. Explore opportunities for ecotourism in North Brookfield.	Ongoing	Open Space Com., Selectmen
a. Identify natural areas and activities of potential interest that may draw people from outside of North Brookfield and the Region (i.e. bird watching, canoeing etc.).	2-3	Selectmen, Conservation Com., Open Space Com., Planning Board
b. Determine available funding tools for creating/marketing ecotourism opportunities in North Brookfield.	2-3	Finance Com., Open Space Com.,
c. Investigate access to privately held lands to allow for use as part of the Town's ecotourism plan including as a connection between parcels of interest.	3-5	Selectmen, Open Space Com.
d. Seek funding through Town appropriated funds, grants, and donations for developing boat launches along rivers that abut existing Town owned land or seek easements for access/launch sites from private land owners.	4-5	Finance Com., Open Space Com.

Goal 4: Provide North Brookfield with Varied and Well Maintained Recreational Opportunities and Facilities

Objective	Year	Responsible Party
1. Maintain existing facilities, with improvements where necessary.	Ongoing	Playground Com.
a. Develop a Town survey to determine improvement needs.	2-3	Playground Com., Open Space Com.
b. Incorporate these determined needs in the Town budget for capital improvements.	3-4	Capital Improvement Com., Playground Com.
c. Obtain Town budget and/or grants to fund improvements.	Ongoing	Capital Improvement Com., Finance Com.
2. Construct new Facilities as needed.	Ongoing	Playground Com., Open Space Com.
a. Develop a Town survey to determine new facility needs.	2-3	Playground Com., Open Space Com.
b. Incorporate these determined needs in the Town budget for capital improvements.	3-4	Capital Improvement Com., Playground Com.
c. Obtain Town budget and/or grants to fund improvements.	Ongoing	Capital Improvement Com., Finance Com.
3. Expand opportunities for passive outdoor recreation (hiking, fishing, canoeing, etc.).	Ongoing	Playground Com., Open Space Com.
a. Determine likely areas for new passive recreation and trails via Town survey.	2-3	Playground Com., Open Space Com.
b. Determine the feasibility of creating a Multi-Use Path on the site of the old railroad bed.	1	Selectmen, Playground Com., Open Space Com.
c. Identify underused, existing trails and paths that could support multiple uses (i.e. hiking, biking etc.).	2-3	Playground Com., Open Space Com.
d. Explore the creation of boat launching areas and water-based recreation on the Five Mile River, including easements/roads to access the area(s) and provide parking as needed.	4-5	Open Space Com., Playground Com., Selectmen
e. Seek funding through Town appropriated funds, grants, and donations for developing hiking and biking trails along existing Town roads, outside of traffic lanes, on shoulders, within the road right of way or purchase easements from private land owners who have frontage along side roads.	3-5	Finance Com., Open Space Com., Conservation Com.
f. Seek funding through Town appropriated funds, grants, and donations for developing boat launches along rivers that abut existing Town owned land or seek easements for access/launch sites from private land owners.	5	Finance Com., Open Space Com., Conservation Com.
4. Existing or planned facilities and opportunities should accommodate all age groups and user groups within the community.	Ongoing	ADA Coordinator
a. Identify existing facilities that do not currently meet accessibility standards through Town survey.	2-3	ADA Coordinator, Playground Com., Open Space Com.
b. Incorporate these determined needs in the Town budget for capital improvements.	3-4	Capital Improvement Com., ADA Coordinator
c. Obtain Town budget and/or grants to fund improvements.	Ongoing	Finance Com., Capital Improvement Com.

Town of North Brookfield Open Space Plan

Action Plan

NEW BRAINTREE

WEST BROOKFIELD

BROOKFIELD

EAST BROOKFIELD

SPENCER

Coordinate & Support Private Lake Association Efforts To Protect & Improve Water Quality

Bennet's Hill # 3 Purchase Priority

Gap In Protection Along 5 Mile River # 2 Purchase Priority

See Insert

Determine The Feasibility Of Creating A Multi-Use Path On The Site Of The Old Railroad Bed

Establish A Wetlands Protection Bylaw

Determine The Viability Of A Suspected Aquifer Under The 5 Mile River

Establish A Wetlands Protection Bylaw

Small Pox Cave # 5 Purchase Priority

Brookfield Orchards # 1 Purchase Priority

Explorer The Creation Of Boat Launches & Water Based Recreation On The 5 Mile River

Old Hayes Farm # 4 Purchase Priority

Coordinate & Support Private Lake Association Efforts To Protect & Improve Water Quality

Legend

- Water Bodies
- Streams
- NHESP Certified Vernal Pools
- NHESP Potential Vernal Pools:
  NOT equivalent to Certified Vernal Pools
- Wetlands
- NHESP Estimated Habitats for Rare Wildlife
- NHESP BioMap Core Habitat
- NHESP BioMap Supporting Natural Landscape
- Town Boundary

Roads

- Interstate
- U.S. Route
- State Route
- Local
- Chapter Lands

Open Space Lands

- State
- Municipal
- Non-profit
- Private
- APR
- CR

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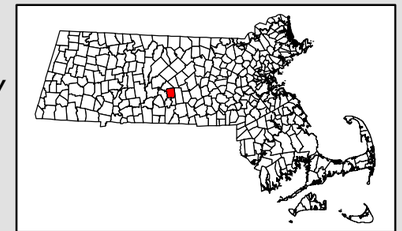

Source: Data provided the Town of North Brookfield, the Central Massachusetts Regional Planning Commission (CMRPC), by MassHighway and the Executive Office of Environmental Affairs/MassGIS (EOEA/MassGIS).

Information depicted on this map is for planning purposes only. This information is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analysis. Use caution intrepreting positional accuracy.

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North Brookfield Open Space Plan 2007
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INSERT

Feet: 0 250 500 1,000
1 in = 1,000 ft

Maintain Existing Facilities With Improvements Where Necessary

SECTION 10: PUBLIC COMMENT

SECTION 11: REFERENCES

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Appendix A
Funding Mechanisms and Programs

Property Acquisition

1) Program/Method: **Municipal purchase**

Sponsoring Agency: Town of North Brookfield.

Approximate Funding Maximum: Dependent on Town Meeting.

Program Description: This tool is probably the most direct and effective way for a town to achieve the acquisition objectives of its open space plan. Towns may either issue bonds to cover purchases or in some cases include a purchase item in the general budget. Bond issues are quite common and provide communities with the flexibility to negotiate with property owners, knowing that money has already been authorized to complete the acquisition. In practice, towns generally ask for authorization to float a bond to cover open space acquisition, and then once a deal has been negotiated return to town meeting for the actual appropriation.

Priority for pursuing: High.

Chances of success: Moderate. Will depend on a vigorous public outreach campaign prior to town meeting and the general referendum.

2) Program/Method: **Massachusetts Self-Help Program**

Sponsoring Agency: Massachusetts Office of Environmental Affairs, Division of Conservation Services (DCS).

Approximate Funding Maximum: $250,000.

Program Description: The Program provides a percentage (typically over 50%) of reimbursement for the purchase of land for conservation and passive recreation purposes. This program can provide funding for "regional" projects, whereby several communities can combine their funding to cover a larger land purchase.

Priority for pursuing: High.

Chances of success:	Moderate. Will depend on quality of town's application and level of competition.
3) Program/Method:	**Massachusetts Highway Department (MHD) Open Space Program**
Sponsoring Agency:	Massachusetts Executive Office of Transportation and Construction (EOTC).
Approximate Funding Maximum:	None, but program receives only $1M/year to be spread around the State.
Program Description:	This program acquires scenic areas adjacent to roadways. Funds are not available for recreation projects, though MHD has worked cooperatively with other state agencies and municipalities to assist in adjoining recreation projects. Scenic views and environmental protection are the two areas of program focus.
Priority for pursuing:	Low.
Chances of success:	Low, unless a great scenic resource is involved.
4) Program/Method:	**Federal Land and Water Conservation Fund**
Sponsoring Agency:	Division of Conservation Services (DCS)
Approximate Funding Maximum:	$500,000
Program Description:	This Program provided up to 50% reimbursement towards the cost of acquisition or improvement of recreation land, including the development of active recreation facilities.
Priority for pursuing:	Moderate.
Chances of success:	Moderate depending on the funds to be made available upon the Program's new startup.

Studies and Construction/Maintenance

1) Program/Method:	**Lake and Pond Grants**
Sponsoring Agency:	Massachusetts Department of Environmental Management (DEM).
Approximate Funding Maximum:	$10,000.
Program Description:	This program is the successor program to DEP's Clean Lakes Program (Chapter 628). Eligible

activities include, lake management analysis and planning, public education, and watershed and in-lake management techniques. The program requires a 50% cash match. Applications are due in November of each year.

Priority for pursuing: Moderate.

Chances of success: Moderate.

2) Program/Method: **The National Recreational Trails Act (NRTA)**

Sponsoring Agency: Massachusetts Department of Environmental Management (DEM).

Approximate Funding Maximum: $30,000.

Program Description: Part of the federal Intermodal Surface Transportation Act, NRTA provides funds for trail projects. Eligible projects include: trail construction, land/easement acquisition, handicapped accessibility, interpretative areas/facilities, and education. Trails must be recreational, e.g. intra-city, on-road bikeways would probably not be eligible. There is no limit on grant funds, but a 50% local match is required (matching funds can be "non-cash"). Motorized and non-motorized trail use must be included in the grant with at least thirty percent of funds going to each activity. Applications are due in October of each year.

Priority for pursuing: Moderate.

Chances of success: High with a good proposal.

3) Program/Method: **Greenways and Trails Demonstration Grant Program**

Sponsoring Agency: Massachusetts Department of Environmental Management (DEM).

Approximate Funding Maximum: $5,000.

Program Description: Greenways and trail projects are at the center of this program. Funding categories include: planning, research, mapping, public education and community outreach, ecological assessment,

	and trail construction, maintenance and expansion. In recent years focus has been placed on projects that either educate the public or work on river greenways. However, all greenway/trail projects are eligible with the exception of those confined to a single parcel of land. Applications are due in January/February every year and no local match is required.
Priority for pursuing:	Moderate.
Chances of success:	High with a good proposal.
4) Program/Method:	**Inter-Modal Surface Transportation Efficiency Act (ISTEA), Regional Transportation Improvement Program**
Sponsoring Agency:	Massachusetts Highway Department, Central Massachusetts Metropolitan Planning Organization. (MPO).
Approximate Funding Maximum:	No maximum.
Program Description:	Funds are available for transportation related open space improvements. A bike path that connects dense areas of housing with employment or shopping centers would clearly fit the criteria. However, the state and the MPO have been relatively flexible about definitions and projects that are slightly less directly related to transportation may be eligible e.g., an open space parcel adjacent to a road programmed for repairs; the parcel provides a roadway rest area and access to walking trails.
Priority for pursuing:	Moderate with an appropriate project.
Chances of success:	Low.
5) Program/Method:	**Inter-Modal Surface Transportation Efficiency Act (ISTEA), Enhancement Program**
Sponsoring Agency:	Massachusetts Highway Department (MHD), Central Massachusetts Metropolitan Planning Organization.
Approximate Funding Maximum:	None, but a $100,000 minimum is requested by MHD.

Program Description:	Money is provided to a variety of transportation "enhancement" projects. Among those eligible are bikeways, walking paths and rail trails. This is a special dedicated fund that amounts to 10% of statewide spending from ISTEA monies.
Priority for pursuing:	Moderate.
Chances of success:	Low.

Non-acquisition programs

1) Program/Method:	**Conservation Restrictions (CRs)**
Sponsoring Agency:	Massachusetts Office of Environmental Affairs, Division of Conservation Services (DCS).
Approximate Funding Maximum:	Only technical support available.
Program Description:	Conservation restrictions (CR's) are legal, enforceable agreements, authorized by the state, which are made between a landowner and a charitable organization, or a town. They are used primarily to keep land in a "natural or scenic open condition". Restrictions can be written so that certain uses are permitted and others prohibited, e.g. the current owner may continue to occupy an existing house on the land, but may restrict the construction of any additional houses. Grantors of restrictions may also be able to benefit by reductions in various taxes including property, estate and income.
Priority for pursuing:	High.
Chances of success:	Depends on property owner.
2) Program/Method:	**Assessment Act (M.G.L. Chapters 61, 61A and 61B)**
Sponsoring Agency:	Massachusetts Department of Environmental Management, Department of Food and Agriculture, and Department of Revenue (respectively).
Approximate Funding Maximum:	No public funds available.
Program Description:	These programs work by making available special property tax assessments to owners who

agree to restrict their land to a particular use. Chapter 61 applies to lands actively devoted to forestry use, 61A applies to active agricultural lands, and 61B applies to public recreational lands like wildlife sanctuaries and golf courses. Generally properties are assessed at their current use value rather than their highest use. This usually translates into a substantial property tax savings for owners. The program also requires a right-of-first-refusal option to the town when property owners look to sell their land.

Priority for pursuing: Moderate.

Chances of success: Depends on property owner.

3) Program/Method: **Agricultural Preservation Restrictions**

Sponsoring Agency: Massachusetts Department of Food and Agriculture.

Approximate Funding Maximum: No public funds available.

Program Description: This program insures that active farms stay in agricultural production. The state purchases a farmer's development rights. The price paid is the difference between the full market value of the property and its appraised agricultural value. A permanent restriction is then put in place prohibiting all non-agricultural uses on the parcel. The farmer is taxed at the agricultural value rather than the highest use value.

Priority for pursuing: High.

Chances of success: Depends on property owner.

Appendix B
Americans With Disabilities Act (ADA) Section-504 Self-Evaluation

Appendix C:
Citizen Survey Results

Memo To: North Brookfield Master Plan Committee
From: Stephen Wallace, CMRPC
Date: April 11, 2006
Subject: Citizen Survey Results

The Details:

- Nineteen questions covering such topics as land use, zoning, housing, economic development, open space, recreation, and municipal services.
- Sent to every household in North Brookfield (1,842 households)
- There were 642 responses received for a total response rate of 34.8%.

Question #1: What do you like about living in North Brookfield? The top three responses were:

- Small town character (508 votes)
- Low crime rate (445 votes)
- Open spaces (399 votes)

None of the other choices came close, although family ties did garner 209 votes. The results for Question #1 indicate a clear preference for a quiet, rural, crime-free community where open space is valued.

Question #2: What do you find undesirable about living in North Brookfield? The top two responses were:

- Lack of retail shopping opportunities (288 votes)
- Lack of employment opportunities (174 votes)

There were five choices that received a significant amount of votes:

- The school system (124 votes)
- The downtown (121 votes)
- High tax rate (118 votes)
- Lack of recreation opportunities (112 votes)
- Excessive development (111 votes)

As North Brookfield is neither a regional employment center nor a regional shopping destination, it is no surprise that residents lament the lack of shopping and employment opportunities. Furthermore, it has been my experience that issues like high tax rates and excessive development always receive high negatives on citizen surveys.

What is alarming is that the local school system and the downtown received such negative responses. That the lack of recreation opportunities would be cited as a discontent in a rural town with an extensive amount of open space is also disconcerting. We need to give some thought to how we can turn these three negatives into positives.

Question #3: There was no Question #3.

Question #4: Please check the types of businesses you feel the Town of North Brookfield needs and where you feel the businesses should be located.

- Restaurants received the highest number of votes with 568. In terms of preferred locations, the Main Street/Downtown area received the most votes with 218, followed by Route 67 with 105 votes.

- Professional services received the second highest number of votes with 563. In terms of preferred locations, the Main Street/Downtown area received the most votes with 204.

- Hardware/Home Improvement stores received the third highest number of votes with 476. In terms of preferred locations, the Main Street/Downtown area received the most votes with 274 (or 58% of the total votes).

- Small-scale retail stores received the fourth highest number of votes with 396. In terms of preferred locations, the Main Street/Downtown area received the most votes with 211 (or 53% of the total votes).

- Services received the fifth highest number of votes with 392. In terms of preferred locations, the Main Street/Downtown area received the most votes with 217 (or 55% of the total votes).

- Home-based businesses received the sixth highest number of votes with 384. In terms of preferred locations, the preferences were split fairly evenly among the five options.

Businesses that didn't receive a lot of support:

- Large-scale retail stores (177 votes)
- Clothing stores (186 votes)
- Fast food establishments (229 votes)
- Home-based agricultural businesses (279 votes)

Question #4 gives us an indication of what people would like to see in North Brookfield's downtown: restaurants, professional offices, small-scale retail stores, and services like tailors and dry-cleaners. Although home-based agricultural businesses only garnered 279 votes, I'm betting this option would garner more support if we can demonstrate that such businesses would help preserve open space and keep alive the Town's agricultural heritage. This question gives us a lot of material to work with when we get to the Economic Development chapter.

Question #5: Please check the types of industries you feel the Town of North Brookfield needs and where you feel the industries should be located.

- Light manufacturing received the highest number of votes with 490. In terms of preferred locations, East Brookfield Road/Gilbert Street received the most votes with 156, followed by Route 67 with 109, and Route 67/148-North with 97.

- Research and development received the second highest number of votes with 371. In terms of preferred locations, East Brookfield Road/Gilbert Street received the most votes with 105, followed by Route 67 with 83, and Route 67/148-North with 80.

Industries that received a modest level of support:

- Medical research (306 votes)
- Office parks (301 votes)
- Bio-technology (289 votes)

Industries that didn't receive a lot of support:

- Freight shipping (172 votes)
- Heavy manufacturing (176 votes)
- Defense industries (179 votes)
- Warehouse and storage (222 votes)

While most respondents answered Question #5, a significant portion did not. In terms of industries that could be integrated into North Brookfield's rural character with a minimum of damage to the environment, the survey respondent's top five choices could achieve these goals if planned for properly.

Question #6: Do you believe North Brookfield has enough land zoned for business purposes?

The results were fairly evenly split here, with 289 "yes" votes and 271 "no" votes. We may need to make the case that North Brookfield's business tax base has been slipping over the past twenty years and that residential property owners have had to pick up the slack. Are the citizens comfortable with this trend?

Question #7: Do you believe North Brookfield has enough land zoned for industrial purposes?

There were 205 "no" votes for this question and 350 "yes" votes, or 63% of the total responses. My comments under Question #6 apply here as well.

Question #8: What do you see as the major benefits of encouraging business/industrial development?

The top three responses were:

- More tax revenues to help ease residential tax burden (390 votes)
- More in-town jobs (384 votes)
- More tax revenues to help improve Town services

Question #9: What do you see as the major disadvantages of encouraging economic development?

The top three responses were:

- More truck traffic (318 votes)
- More auto traffic (315 votes)
- Loss of open space (288)

The responses to Questions #4 through #9 indicate that while citizens want more services, shopping and in-town jobs, they are not willing to sacrifice the Town's rural character. Further, citizens are not in favor of zoning more land for industry and are split in regards to zoning more land for businesses. Does this mean that citizens believe there is expansion potential in the Town's current commercial/industrial zoning districts or that the land in such districts could be better used? When we come to the Economic Development chapter, we will assess the development capacity of each commercial/industrial zoning district: how much vacant developable land is in each district, how much of the district is being used, how much of the district could be reused, etc.

Question #10: Would you support the rezoning of land currently zoned as residential for the following purposes?

The top four responses were:

- Office and professional uses (273 votes)
- Retail use (233 votes)
- Would not support any rezoning (193 votes)
- Light industry (189 votes)

That the "no support" option would receive such a high number of votes indicates that rezoning for economic development would be a tough sell in North Brookfield. This leads us to the following question: how to make better use of the current commercial/industrial zoning districts? We will be in a better position to answer this question once we've analyzed the expansion potential if these districts.

Question #11: What types of housing do you think North Brookfield needs more of?

None of the options listed received very much support, and that in its self is very telling. In fact, many respondents wrote in comments such as "no more housing" and the like under the "other" heading. Of the preferences listed, the top four responses were:

- Single-family housing (196 votes)
- Elderly housing (136 votes)
- In-law apartments in existing residences (122 votes)
- Open space residential design (118 votes)

Question #12: Do you favor zoning changes that would allow for new construction/conversion of existing buildings, in order to provide housing for low/moderate-income households?

The vote was fairly evenly split here with 281 "no" votes (or 52% of the respondents), versus 260 "yes" votes (or 48%).

Question #13: What do you think of North Brookfield's 66,000 square foot minimum lot size?

Just about two thirds (66%) of the respondents think the minimum lot size is "just right". Based on this response, I'm not sure if up-zoning (going to larger lot sizes) should be part of our gameplan. We will know much more by the time we get to the Land Use & Zoning chapter.

Question #14: Would you support any of the following measures to control residential growth?

All of the options received a decent level of support; however, the top two responses were:

- Limit the number of building permits issued per year (336 votes)
- Specify how fast each subdivision can be built (233 votes)

Regarding these two choices, last year's Hadley decision made it quite clear that municipalities cannot have growth control in place as a standing measure. Growth control in the forms of a cap on building permits or phasing of subdivisions can only be used for a limited time (meaning a sunset provision), and can only be in place while the municipality addresses an identified community need, such as: building a new school, upgrading a wastewater treatment plant, finding a new water source, or in the case of North Brookfield, completing a master planning process. North Brookfield's current growth control bylaw is legal because it is in place for a limited amount of time while the Town completes the Master Plan. The other growth management techniques listed under this question do not legally qualify as growth control measures, and thus are not subject to the restrictions set forth in the Hadley decision.

Question #15: In an effort to preserve North Brookfield's rural character, would you be in favor of any of the following initiatives?

The top two responses were:

- Protect open space (414 votes)
- Protect farming with an agricultural commission (380 votes)

Question #16: What types of recreation opportunities would you like to see more of in North Brookfield?

The top three responses were:

- Bike trails (258 votes)
- Theater (198 votes)
- Hiking (195 votes)

Both hiking and bike trails are recreational activities that would be in keeping with North Brookfield's rural character. Hopefully, we'll be able to identify some appropriate locations once we get to the Open Space & Recreation Plan.

Question #17: Rate the services.

North Brookfield's municipal services ranked by level of satisfaction:

- Fire Department – rated excellent or good by: 97%
- Emergency – rated excellent or good by: 92%
- Police Department – rated excellent or good by: 89%
- Library – rated excellent or good by: 86%
- Transfer Station – rated excellent or good by: 83%
- Council on Aging – rated excellent or good by: 81%
- Sewer Department – rated excellent or good by: 81%

- Water Department – rated excellent or good by: 79%
- Health Department – rated excellent or good by: 76%
- Conservation – rated excellent or good by: 72%
- Elected Officials – rated excellent or good by: 72%
- Planning Board – rated excellent or good by: 71%
- Building/Inspection – rated excellent or good by: 70%
- School System – rated excellent or good by: 62%
- Recreation – rated excellent or good by: 45%
- Highway Department – rated excellent or good by: 45%

With a few exceptions, the responses here are very typical of what I've seen from other citizen surveys: fire/police/emergency always rate very high (usually above 90% good/excellent), and planning/building/conservation (boards that occasionally have to say "no") usually score between 65% and 75% good/excellent.

What is surprising is that the School Department scored so low. Most local school systems usually have an excellent/good rating of 80% or better. There wasn't a lot of support for providing the Department with more money either: only 86 respondents voted to give them more money (five other departments received more support for additional funding). In fact, 55 respondents voted to give the Department less tax dollars (the highest "less" response of any of the departments).

Citizens are clearly unhappy with the Highway Department. This may be due to the Department's chronic staffing shortages, the ability of its aging equipment to do the job, or it may be an evaluation of the Department's job performance.

The low level of satisfaction with recreation requires a deeper investigation. Are people unhappy with the quantity of existing recreation facilities/programs, or the quality of them? I should be able to get at the quality question once I visit all of the Town's recreation facilities as part of the Open Space & Recreation Plan. I'd also like to talk with the Recreation Commission and see what they have for attendance numbers, waiting lists, quality evaluations (if they exist), etc.

Question #18: Are you satisfied with the access to Town services and departments?

While the vote was seemingly one-sided with 391 "yes" votes (or 71% of the respondents), versus 158 "no" votes (or 29%), the tally is somewhat troubling. In the surveys I've seen that have asked this question, the overall rate of satisfaction with community services has been above 80% favorable. That North Brookfield's town government "only" a 71% overall favorability rating should be cause for concern.

Question #19: Would you be in favor of expanding the municipal sewer & water systems for the following uses?

- Residential development (269 votes)
- Commercial development (206 votes)
- Industrial development (155 votes)

Question #20: Does North Brookfield need public transportation?
While the majority said "no" (359 votes or 65.6%), a significant portion of the population said "yes" (188 votes or 34.4%).