

Open Space and Recreation Plan

Littleton, Massachusetts

Presented to:

Melissa Cryan
Commonwealth of Massachusetts
Executive Office of Energy and Environmental
Affairs
Division of Conservation Services
100 Cambridge Street, Suite 900
Boston, MA 02114

Prepared by:

Littleton Open Space and Recreation Plan
Implementation Committee

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Section 1: Plan Summary

1.0 Plan Summary

The 2009 Littleton Open Space and Recreation Plan (hereon referred to as “the Plan”) is an update of the 2003 Littleton Open Space and Recreation Plan. The 2003 Plan has been a critical document in the Town of Littleton’s planning efforts over the last five years. It was also heavily leveraged for the writing of the Littleton Master Plan. This 2009 Open Space and Recreation Plan will again be a document that is actively referred to for future planning efforts.

In 2002, in order to complete and implement the 2003 Plan, the Town formed an Open Space and Recreation Plan Implementation Committee. This group has worked carefully to manifest the goals and objectives from the 2003 Plan.

In 2004, this Committee oversaw the certification of the first vernal pool so designated in Littleton. Since that time there have been 22 additional vernal pools certified in the town. Littleton’s rivers and streams are getting attention as are the many lakes and ponds within the town. The Clean Lakes Committee (CLC) has continued to concentrate specifically on clean-up efforts for the Town’s many surface water bodies.

In late 2003 and into 2004, the Committee worked cooperatively with the Littleton Conservation Commission (CC), the Littleton Conservation Trust (LCT) and the New England Forestry Foundation (NEFF) to preserve 107 acres of land in town. Eighty-five acres of this land, managed by NEFF, are also protected by a conservation restriction held by the Conservation Commission.

The Implementation Committee has completed a land inventory during its tenure. This study classified the remaining open space in town that is not permanently protected. This land includes private parcels that exceed five acres and are critical for preservation based on the views they provide, the wildlife habitats they protect, or the water resources they contain. The Committee used a prioritization model to help systematically evaluate these parcels and rank them in order of critical importance for future acquisition consideration.

Over the past several years the Town has received several donations of land and conservation restrictions through the work of the Planning Board and the Conservation Commission. In addition the Littleton Conservation Trust has secured properties through donations.

The community, the Implementation Committee, the CC, the LCT and the CLC are committed to preserving the rural character that both historically and currently describes the Town of Littleton. The Town is planning on making critical land purchases in the future to preserve this character and to preserve valuable farmland, as well as to add to the existing contiguous parcels of open space in the town. An emerging green belt can be traced from our border with the Town of Acton, across Littleton to the border of Groton. Much of this green belt is prime farmland, the importance of which cannot be overestimated, and will be emphasized on March 28th at the second Littleton Common Forum, “Preserving Farmland-Promoting Agriculture”. Littleton has also engaged in many regional efforts with our neighbors to expand trail systems, contiguous open spaces, and wildlife corridors.

At several times during the last 10 years the townspeople have voted favorably for Town funds to be allocated to open space purchases. This movement is on the rise. Going forward, we hope to expand the use of creative funding mechanisms and techniques to continue to preserve our open space resources.

In line with this, in 2007 Littleton voters adopted the Community Preservation Act and established a 1% real estate surcharge to be used for open space, historic preservation, community housing and recreation programs. Together with conservation restrictions, LAND (Local Acquisition for Natural Diversity) funds, Trust for Public Land projects, APRs, cell tower funds and donations, the CPA fund will be used to protect the land and water most important for Littleton's open space goals.

These goals and objectives will not only meet the wishes of town residents to preserve our open space resources and rural character, but further meet the environmental needs of the regional community by protecting our ground water and surface water resources, as well as our farm lands. The Town is strategically positioning itself for future key land purchases.

The challenge to protect our rural character is growing. The Town's pace of development is accelerating and fiscal constraints are greater than ever. Land resources are steadily being removed from availability, and prices continue to escalate. Still, community expectations for recreational opportunities and the protection of natural and cultural resources are higher than ever. In that context, sound planning is critical.

The balance of this Plan expands on these concepts, ideas and strategies to create a comprehensive, actionable Plan that will guide the Town over the next five years. It begins with an overview of the community setting: the region, Town history, and recent growth (Section 3). That is followed by an inventory of the Town's environmental resources (Section 4), and a detailed inventory of the land parcels which are or should be protected (Section 5). Section 6 provides an overview of the goals being pursued, and on that basis, Section 7 outlines needs for resource protection, recreation facilities, and management needs. Section 8 then details more specific goals and objectives, and Section 9 lays out a five-year plan for addressing them.

Section 2: Introduction

2.0 Introduction

2.1 Statement of Purpose

Historically, the Town has prepared plans once a decade as guidance for its open space and recreation efforts. That has been changed to five-year increments, as the rate of development and availability of State funding necessitates more frequent review. A timeline of previous actions and plans undertaken by the Town of Littleton include:

- 1968: Conservation Commission's Open Space Plan accepted by Town Meeting.
- 1976: Park and Recreation Plan - Littleton, Massachusetts prepared.
- 1977: Conservation Commission's Open Space Plan updated.
- 1986: Littleton Massachusetts Open Space and Recreation Plan prepared.
- 1997: Littleton Massachusetts Open Space and Recreation Plan updated.
- 2003: Littleton Massachusetts Open Space and Recreation Plan updated.

The current Open Space and Recreation Plan will aid in the Town's ability to gain financial assistance in pursuing resource protection. It is imperative that the Plan be kept up to date in order for Littleton to acquire funding and support from State agencies.

The update of this Plan carefully builds on earlier plans in two ways. First, there is a presumption that the goals and objectives that have guided the Town for some years should continue to be supported, except where there are specific grounds for change. The particulars of how to achieve goals can be expected to change, but implementation should be expected to be on-going and to move relatively slowly.

Maps for the 2009 Open Space Plan are revised where necessary; data displayed on all maps was supplied by MassGIS and the Metropolitan Area Planning Council and represents the best available information. Mapping of change was important in shaping this Plan. Maps were prepared through *ArcMap Version 9.3* Geographic Information Systems (GIS).

2.2 Planning Process and Public Participation

In March of 2009, a town-wide survey was conducted to help learn from the people of Littleton what their attitudes were towards protecting open space and what was important to them as residents. The survey was mailed to 3800 homes by the Littleton Water Department with the water bills. In addition the survey was also available on-line by going to the town's website. The committee received 250 surveys back. On March 25th, the Committee held a public forum to discuss Littleton open space and recreation. The results of the survey and forum have been very beneficial to provide guidance in writing this document and the goals and objectives for the town in the coming years. The survey and summary of results as well as the minutes from the forum are included in Appendix A of this Plan.

In line with the results of the survey for this plan, our Committee has heard that people have a strong desire to keep the natural character of Littleton preserved. Drinking water protection was rated very highly in the survey followed by lake and stream protection. A large majority of respondents said they would be inclined to vote favorably at Town Meeting to protect open space when it came available.

This current Plan shares much with the 2003 one. The emphasis of efforts continues to be on how to achieve results given limited financial resources, and without use of aggressive regulation, with a spirit of "partnering" between public and private interests as well as across communities.

The Open Space and Recreation Plan Implementation Committee (OSRPIC) charged with the responsibility of updating the 2003 Open Space and Recreation Plan includes the following members:

Committee Members:

Peter Church, Chair	David Outman
Gary Austin	
Vera Cohen	
Kimberly Harriman	

Rick Findlay and Donald MacIver have also contributed and have been instrumental to the process.

2.3 History of Committee Work

The Committee began preparing for the Plan update in December 2008. The above-mentioned survey was copied and mailed out through the generosity of the Littleton Electric Light Department which included the surveys with their March bills. In addition, a town-wide forum was held as described above.

Based on the thoroughness of the last Plan a decision was made to update the Plan internally and not hire a consultant. At the end of January 2009, the Committee broke down the sections of the Plan to update as follows:

Section 1	Plan Summary	Vera Cohen
Section 2	Introduction	Vera Cohen, Peter Church
Section 3	Community Setting	Kimberly Harriman, David Outman
Section 4	Environmental Inventory and Analysis	Peter Church, Gary Austin
Section 5	Inventory of Lands	Vera Cohen, Rick Findlay
Section 6	Community Goals	Kimberly Harriman
Section 7	Analysis of Needs	Kimberly Harriman
Section 8	Goals & Objectives	OSRPIC
Section 9	Five Year Action Plan	OSRPIC

David Outman revised all maps as necessary.

Meeting minutes, memos and press coverage of the Open Space and Recreation Plan Implementation Committee's activities are included in Appendix B of the final update for further review.

Section 3: Community Setting

3.0 Community Setting

3.1 Regional Context (see Map 1)

Littleton lies in Massachusetts' Northeast Region (as categorized in the Massachusetts Statewide Comprehensive Outdoor Recreation Plan, later referred to as "SCORP"), or the Massachusetts Central Upland (as categorized in the Massachusetts Department of Environmental Management Landscape Inventory, later referred to as "Landscape Inventory"). The eastern portion of the Town drains to the Concord River, (it goes to Assabet first, then Concord) making it part of the Sudbury, Assabet, Concord River (or SuAsCo) basin. That portion of the Town's drainage largely reaches the Assabet via the Nashoba and Fort Pond Brooks. In 1995, the Metropolitan Area Planning Council (MAPC) completed a study for the basin, The SuAsCo River Basin Water Supply Protection Plan. As is often the case, water supplies cross municipal boundaries and therefore the study urges cooperation and coordinated efforts to protect water resources in the basin. In Littleton's case, 18% of the recharge area for local water supply within the basin is located in adjoining towns. The western portion of the Town drains to the Merrimack via Beaver and Stony Brooks.

The Town lies at the junction of the Route 2 radial corridor, important in both history and current economic development, and the Route I-495 circumferential corridor of more recent significance. Based on consideration of functional relationships, Littleton has been included in the Boston-centered Metropolitan Area Planning Council (MAPC), but at its extreme northwestern edge. Finally, Littleton is part of the "Minuteman Advisory Group on Interlocal Coordination" (MAGIC), a subregion of MAPC stretching from Carlisle to Marlborough and Lincoln to Bolton. MAGIC provides the opportunity for communities within the subregion to meet and discuss issues of common interest. Over the years, MAGIC has focused on many open space issues providing a forum for discussion of shared open space concerns.

The regional landscape was long dominated by agriculture, but in recent decades this has become one of Massachusetts' prime growth regions for both housing and business; reflecting generally developable land, and location within easy reach of both Merrimack Valley and Route 128 labor pool for industries, and job opportunities for residents. Additionally, the recent trends in industrial and commercial development along the I-495 Corridor have provided more opportunities for jobs and a convenient commute for those residents preferring to reside in suburban communities as opposed to an urban setting.

Job growth in the vicinity continues to increase, particularly within the high-tech sector, and numerous larger office complexes have been built along Interstate 495 and Route 2 to provide easy access for commuters. These jobs have tended to be high skill, high paying jobs which capitalize on the well-educated workforce in the region. Despite recent economic downturns, the overall trend of growth in the region looks to have a resilient and strong future. In particular, Littleton's future job growth promises to be stronger than the data from the past several years would indicate. Hewlett-Packard moved out of the town in 2005 and the loss of jobs is reflected in the chart below. However, IBM has begun to move into the former Hewlett-Packard complex and is expected to bring 3400 new jobs by fall of 2010.

Table 3-1 Littleton Subregion Jobs (by place of work)

Town	2001	2005	2007	Change (# of jobs) 2001-2007	Percent Change 2001-2007
Acton	9,166	9,491	10,089	923	10.1%
Ayer	5,244	7,406	7,433	2,189	41.7%
Boxborough	2,206	3,096	3,834	1,628	73.8%
Groton	2,246	3,160	3,417	1,171	52.1%
Harvard	649	1,094	1064	415	63.9%
Littleton	5,340	5,311	5,018	-322	-6.0%
Westford	11,461	11,612	11,879	418	3.7%
Subregion Total	36,312	41,170	42,734	6,422	17.7%

Source: Massachusetts Division of Employment Training

Given the increases in job growth in the region, the housing growth for Littleton and adjacent communities has increased at a rate greater than the statewide average. Given the well-paying jobs, excellent municipal services, and quality school systems in the region, housing prices have increased over recent years resulting in a shifting demographic of regional residents.

Table 3-2 Littleton Subregion Housing

Town	2000 # housing units	2007 # housing units	Percent change
Acton	7,680	8,064	4.8%
Ayer	3,154	3,575	11.8%
Boxborough	1,853	1,996	7.2%
Groton	3,268	3,720	12.2%
Harvard	1,809	1,884	4.0%
Littleton	2,960	3,233	8.4%
Westford	6,808	7432	8.4%
Subregion Total	27,532	29,904	7.9%

Sources: Census Bureau Construction Statistics, online at UMass Donahue Institute website, www.massbenchmarks.org

When population and growth trends within Littleton are compared to those towns within its Subregion, one can note that Littleton is relatively in the middle when compared to its peers in terms of population change and density. While the population increases in this area between 2000 and 2007 are well above the state average (1.6%), the density of these towns tend to be much less than the average density for towns within Massachusetts (823 persons per square mile). Based on these trends one can conclude that given an above average growth rate, the density of Littleton will continue to increase over the upcoming decade.

Table 3-3 Littleton Subregion Population

Town	2000	Est. 2007	Percent change	Est. Population Per Land Area Square Mile in 2007
Acton	20,331	20,753	2.1%	1039
Ayer	7,297	7,369	1.0%	817
Boxborough	4,868	5,097	4.7%	491
Groton	9,547	10,641	11.5%	324
Harvard	5,981	6,001	0.3%	228
Littleton	8,184	8,714	6.5%	528
Westford	20,754	21,790	5.0%	712
Subregion Total	76,952	80,365	4.4%	591

Source: MassBenchmarks, U.S. Bureau of the Census Estimates

Water resources vitally link communities in this region. Nagog Pond is not only divided between Littleton and Acton, but its waters provide drinking supplies to the Town of Concord. The aquifer associated with the Beaver Brook is important for water supply not only in Littleton but down-gradient in Westford and Chelmsford, where it serves as a source for public water supply. Its integrity is vulnerable to mishaps in Boxborough, as well as locally. Similarly, Spectacle Pond is shared with Ayer, and Forge Pond is shared with Westford. Fortunately, there is a history of cooperation and caring for these shared resources. Protection of these water resources through cooperation and regional planning will help to ensure viable drinking water, recreational and aesthetic resources for Littleton now and into the future.

Open space and recreational resources amongst the communities are shared and linked through trail systems, wildlife corridors and youth recreational programs. Caught between a quiet, more rural past and a potential future as bustling suburbs, Littleton and surrounding towns have the opportunity to preserve their regional small-town character through the acquisition of open space, smart growth and natural resource protection. In 2007 Littleton took an important step in ensuring the character of the community by passing the Community Preservation Act, which provides a funding mechanism for the town to acquire open space to further the goals and objectives of this Plan.

3.2 History of the Community

Littleton is a town with a full and rich history. Originally named Nashobah, this area was first settled by Indians with their leader Tahattawan. As evidenced by our current street names, areas of Town and water body names, we have been greatly influenced by that first Indian culture.

The Indians lived peacefully in Nashobah for years with its many ponds, lakes, streams, wooded hillsides and fertile valleys. Reverend John Eliot translated the Bible into the Indian's language and converted Tahattawan and his people. In 1654, Nashobah was established as the sixth "praying Indian" town by the Massachusetts General Court and ruled by Tahattawan and his successors.

The King Philip Wars of 1675-76 put the Indians in an impossible position. The English did not trust them because they were Indians and other Indians did not trust them because they lived like

white men. The fifty or sixty Nashobahs were placed in protective custody in Concord and later sent to Deer Island.

The Town was touched by the Indian War when Mary Shepherd (a development of that name still exists) was taken prisoner and her family killed by hostile Indians. The Nashobahs did not fare well on Deer Island. All lost their possessions, many died, and few ever returned here. The last of the tribe was Sarah "Indian" Doublet. When the Town was incorporated for the English in 1714, a 500-acre reservation at Fort Pond was set aside as the Indian's New Town. This property was sold in 1734 by the aged and blind Doublet to pay for her maintenance. Today that section of Town is still referred to as Newtown, and in remembrance of the Nashobah's last survivor, an area of conservation land near Nagog Pond is the Sarah Doublet Forest and we have a Sarah Doublet and Sarah Indian Way in her memory.

Over the years, settlers established a town typical of the time. There was a center of town around a green common with streets branching off of it. Around the common were typical businesses and shops helpful to the traveler - an inn, blacksmith shop, a store for provisions, etc. Further away from the town center was where the farmers homesteaded.

Some of these farms are still in existence today, although fewer in number and smaller in size. Besides dairy and beef farms, the agricultural community boasted a bountiful crop of orchard and garden goods, primarily apples and potatoes.

The railroad came to Town in 1840. Shortly thereafter, Littleton was the site of choice for a relocating federal quarantine station for cattle. This was located on Harwood Avenue backing up to the train tracks. As years went on and the Town grew, Great Road became a state highway, sidewalks were laid, the first automobile came to Littleton and Town water and electricity were introduced.

Although primarily still an agricultural community, some industry had popped up. There were still several icehouses, a barrel making plant and a suspender factory, which was very influential as a World War II supplier of webbing materials.

In looking at a map of Littleton, it is easy to see how development spread from the Common outward. Much of the industry was around the Town center, followed by houses and outward to the farmland. It was a desirable community because of its open spaces for gardens, parks, playgrounds, and available space for building. This statement was true in 1946 and still is today, even as we see more and more development in town.

The great clustering of homes on relatively small lots around the lake areas (predominantly Long Lake and Forge Pond) was originally established as summer homes for Bostonians in the 1930's. Littleton was desirable and attractive at the time because of its low tax rate, proximity to Boston and Fort Devens, and natural beauty. Again these same arguments could be applied today.

Then, as now, Littleton was struggling with growing pains. Many in the Town would prefer that it stay residential rather than industrial. However, growth of any kind has its price whether it be adequate schools, medical facilities and other Town services such as police, fire and ambulance, and business can help support their costs.

Now, as in the 1950's, Littleton has some choices to make. We are still a community with lots of history, beautiful vistas, proximity to Boston, and accessibility to major highways. How will we

monitor and regulate future development and plan accordingly to save some of our natural resources and wildlife from here on in?

3.3 Population Characteristics (see Map 2)

The population of the Town, as noted in Table 3-4, has increased steadily since 1940. The U.S. Census (2000) reported a population of 8,184 persons. However, the decade between 1950 and 1960 marked the period of greatest population growth as the residential population increased by 2,760 persons - an increase of nearly 120%. Population growth moderated throughout the 70's and 80's, however the Town has experienced another growth spurt, with an increase in population by 19.9% in the last decade and a half.

Table 3-4 Littleton Population Change 1940-2020

Year	Total Population	Percent Change from Previous
1940	1,651	
1950	2,349	42.3
1960	5,109	117.5
1970	6,380	24.9
1980	6,970	9.2
1990	7,051	1.1
2000	8,184	13.8
2005	8,613	5.0
2010	8,440	-2.0
2020	8,454	0.0

Source: U.S. Bureau of the Census, 2005 from Littleton Town Clerk, 2010-2020 projected from MISER

The Town of Littleton has had population increases of over 10 times the rate of growth within Middlesex County, and nearly 4 times that of Massachusetts as a whole, over the period of 2000 to 2007 (Table 3-5). This growth is indicative of the desirable nature of Littleton in which to live, as it is situated near major commuting routes, has quality school systems, and has a relatively diverse tax base keeping residential property taxes low compared to many neighboring communities.

Table 3-5 Change in Population in Littleton, Middlesex County and Massachusetts, 2000-2007

Year	Littleton	Middlesex County	Massachusetts
2000	8,184	1,465,396	6,349,097
2007	8,714	1,473,416	6,449,755
Percent Change	6.1	0.5	1.6

Source: U.S. Bureau of the Census

The age structure of the population is shown in Tables 3-6 and 3-7. It is important to note population groups with special recreational needs. Typically such groups include children (those less than 19 years) and the elderly (individuals 65 years and older). Those 18 years or younger make up 26.7% of Littleton's population - almost the same as the statewide average of 23.6%. The Town's elderly population on the other hand - 12.5% of all Town residents - is less than the statewide average of 13.5%.

Table 3-6 Littleton Population Age Structure (2000)

Age	Littleton
Under 5	671
5-9	699
10-14	585
15-19	388
20-24	233
25-34	980
35-44	1,721
45-54	1,195
55-59	436
60-64	311
65-74	485
75-84	339
84 and older	141

Source: U.S. Bureau of the Census

Table 3-7 Littleton Population Age Structure (1990-2000)

Age	1990	2000	Percent change
Under 5	497	671	26.7
5-19	1,316	1,672	22
20-24	447	233	-48
25-44	2,452	2,701	8.6
45-64	1,500	1,942	22.8
65 and older	839	965	12.5

Source: U.S. Bureau of the Census and MISER

It is evident from the previous table that Littleton has experienced a dramatic drop in its population of 20-24 year olds since 1990. This trend may be a result of a lack of affordable housing for younger people, or other economic and social factors within Littleton.

Table 3-8 shows a breakdown of the types of employment within Littleton. The percentage of manufacturing jobs has slowly declined over the past decade with apparent employment gains in more diverse fields (classified in the table below as “all other”). Over the decade several hundred jobs have been added to the Littleton area.

Table 3-8 Littleton Employment (1990-2001)

	1990		1995		2001	
	#	%	#	%	#	%
Manufacturing	2,940	55	2,286	44.8	1,742	30.2
Wholesale and Retail Trade	506	9.5	744	14.6	947	16.4
Misc. Services	1,214	22.7	1,367	26.8	1,759	30.5
All other	682	12.8	708	13.9	1,325	23.0
Total	5,342		5,105		5,773	

Source: Massachusetts Division of Employment Training

Table 3-9 shows the median household income statistics for Littleton as well as the percent change between 1990 and 2000. Median household income rose by close to 40% between 1990 and 2000, which is consistent with the change in median household income within Middlesex County as a whole. Of the fourteen counties in Massachusetts, Middlesex County's median household income ranks third in the state. While Littleton median household income is above average within the county, it is significantly lower than surrounding communities such as Harvard, Westford, Groton, and Boxborough.

Table 3-9 Littleton Median Household Income (1990-2000)

Median HH Income	1990	2000	Percent change
Middlesex County	\$43,847	\$60,821	38.7
Littleton	\$51,425	\$71,384	38.8

Future Growth

Population projections for 2010 and 2020, based on Census 2000, are available through MISER (Massachusetts Institute for Social and Economic Research). These projections show a modest increase of 3% over the period of 2000-2020. However, these projections seem to underestimate the population growth Littleton will likely experience, as the actual population in 2005 exceeded the 2020 projections, and has grown by additional 1% from 2005-2007 as previously shown in Table 3-4. Unless Littleton experiences a population decrease over the next decade these projections drastically underestimate Littleton's 2020 population.

In 2001, a Buildout Analysis was issued by the Executive Office of Environmental Affairs (EOEA) revealing demographic projections for Littleton at complete buildout. A summary of these statistics are shown below:

Population	
2007	8,714
Buildout	15,433
Percentage	43.5
Households	
2007	3,233
Buildout	5,909
Percentage	45.3

These numbers are based on currently available land for development under existing zoning regulations within Littleton. While these projections do not reflect when buildout will occur, given the rate of growth in Littleton, these numbers for future growth should cause concern amongst residents and hopefully spark interest in preserving remaining open space lands.

Implications

The increasing population growth in Littleton will continue to add pressure to the housing market, traffic and other municipal services. The potential conversion of currently undeveloped lands within Town to meet the demand of such population increases has had and will continue to have significant impacts on open space, recreational needs and water supply. Given the rate of

population growth, the increasing sizes of homes and loss of agricultural and forested land, the necessity for open space land acquisition continues to require attention from both residents and political officials. Allowing planned, harmonious growth with the open space and recreation interests of the community is in the best interest of the Town from both an environmental and fiscal standpoint.

3.4 Growth and Development Patterns

3.4.1 Patterns and Trends

Littleton originated as a rural, agrarian community, as did many other Massachusetts towns. Until the 1940's, agriculture and large land holdings were the predominant land uses. Residential uses continue to characterize the Town, as a result of which a strong suburban component supplements the Town's rural flavor. Transportation developments in the late half of this century have strengthened the influence of metropolitan areas on the Town. Growth of the commercial and industrial sectors has been very strong in the past three decades, and development pressure is expected to continue.

The western half of the community, west of Route 495, appears largely rural in nature, though the populated Forge Pond neighborhood lies in the Town's northwest corner, along with the industrial zone along Route 110 leading into Ayer. The major concentrations of residences are located east of Route 495 in the areas of Littleton Common and Long Lake. Many residences both in the Long Lake and Forge Pond areas were originally built on small lots as summer cottages. A growing number of subdivision developments are found off main roads. Commercial and industrial activities follow the Town's major transportation routes and nodes. Commercial enterprises are found along the length of Routes 2A and 119. Industrial activities tend to cluster at the three Route 495 interchanges, along with the previously mentioned area along Route 110.

The Town is fortunate in that much of its acreage remains undeveloped open space land. However, given past trends and current projections, the Town will continue to grow. Population forecasts and buildup analyses predict a substantial increase in the residential population. Similarly, pressures for commercial and industrial development are expected to continue given the growth trends along the I-495 corridor. Most of this growth will be accommodated at the expense of the Town's open space lands, particularly those former agricultural lands located along major travel roads. Therefore, it is critical that areas most important for their resource, agricultural, or scenic qualities be identified and plans for their protection developed, as is being done.

The Town can readily accommodate new development. However, that development must be targeted to suitable areas. Soil capability, proximity to sensitive environmental features, accessibility, and compatibility with existing development are only a few of the factors which should be considered. Industrial Districts as currently mapped are located in some environmentally sensitive areas such as Well #2 near the Westford Town Line and adjacent to Fort Pond. Residentially zoned lands currently occupied by agricultural uses along Route 119 / Route 2A may face conversion to residential subdivisions as development pressures grow. Open space planning need not preclude growth but need only provide a sound course for the path of future development.

3.4.2 Infrastructure (see Map 3)

Transportation

Changes in transportation technology and transit networks have been a major influence on the development of the Town. The community is well-served by highway systems; access to Boston and points west, as well as to points north and south along Route 495 is very good.

I-495 has served as a channel for industrial and residential growth in many of the communities it serves. Littleton is no exception. Industrial growth in the area of the highway's three Littleton interchanges has been substantial.

Route 2 runs the length of the Town and serves as the major link between the Metropolitan Boston area and the western portion of the state. Route 2A/119 is the local north-south route. Much of the Town's commercial activity is found along this major local road.

A rail line crosses the Town's western corner. Freight service is offered between Boston and Western Massachusetts. The Massachusetts Bay Transit Authority Commuter Rail also operates on this rail line. Passenger service originates in Boston, and from Littleton continues through Ayer and Shirley, terminating in Fitchburg - approximately 30 miles west. This existing rail station is currently well utilized. Expansion of the parking facilities to accommodate larger volumes of passengers has been considered for years, and a privately-owned, paid lot opened in 2006.

Water Supply and Sewage Disposal

Groundwater is the sole source of all drinking water in the Town. The Littleton Water Department services approximately 80% of the population. Residents in outlying areas, primarily those residing near the Boxborough town line, and some in the Forge Pond and Oak Hill areas, continue to rely on private wells for drinking water.

The Town maintains three wells, which tap groundwater supplies. Two of these wells lie in the Beaver Brook Watershed; the third lies just southeast of Spectacle Pond. Three storage facilities hold public water: One on Oak Hill, one on Newtown Hill, and the third on Cedar Hill off Cedar Road.

Well #1, and wells #3 and #4, actually a wellfield, are north and east of Routes 2 and 495 off Whitcomb Ave. Well #1 and the wellfield, #3 and #4, have a combined drinking water capacity of 1.4 million gallons per day. Well #2 borders Beaver Brook at the Westford town line and has a capacity of 432,000 gallons per day. Well #5 at Spectacle Pond is the Town's newest and largest well. Located in the Bennett's Brook watershed, installation of this well has allowed greater flexibility in the use and maintenance of the Town's water system. Further, well #5 ensures that in the event wells #1 through #4 are lost due to a chemical spill in the Beaver Brook watershed, the Town will not be without a drinking water supply. An iron and manganese removal facility is operating at the Spectacle Pond well site. Well #5 has a drinking water capacity of 1.5 million gallons per day. Four additional well sites have been identified, and their development is being explored. Currently, the Water Department is exploring the possibility of bedrock wells in the Nagog Pond area of town, near the Acton town border. Bedrock wells would allow another source of potable drinking water in the region, outside of the sand and gravel aquifers and away from possible impacts from major highways. The Water Department has acquired an easement for three sites on the Island near Cobb Pond and has purchased two building sites of

approximately 5 acres and gifted the land to the Conservation Commission. Preliminary assessments have found good water yield in the three bedrock wells and the Department plans to undertake a full investigation of the potential of this site to be a municipal groundwater source, composed of three bedrock wells, during the summer of 2009.

No public sewerage is available in the Town, though development of such a system is the exploration phase for the Long Lake area. Residential, commercial, and industrial users rely on on-site systems for sewage disposal. Old and insufficient systems on small lots with poor soils for sewage disposal have resulted in a number of septic system failures in the Town. Mill and Long Ponds are also listed on the Massachusetts DEP 303d list as water bodies not in compliance with water quality standards due to high nutrient levels, low dissolved oxygen and high numbers of noxious aquatic plants. Septic system failures have also occurred in the Littleton Common, Forge Pond, and Mill Road areas causing water quality problems in those areas as well.

Cognizant of the Town's dependence on groundwater and the sensitivity of this resource to contamination, Littleton has developed a comprehensive aquifer watershed management program. Industrial growth over the seventies had begun to tax water supply and raise concerns over the potential for groundwater contamination. Thus, in 1979, the Town initiated a study of its groundwater resources. Extensive hydrological studies were done and a program for water resource protection proposed. As a result of this study, a number of regulatory, programmatic, and management techniques have been instituted including: an Aquifer and Water Resource Zoning Bylaw amendment; a Toxic and Hazardous Materials Bylaw; development of a third Town well; a groundwater monitoring and industry inspection program; and an innovative water supply management program designed to minimize risks to water supply. The Town maintains many observation wells to monitor groundwater quality. During winter de-icing operations, the Town utilizes one of the lowest salt/sand ratios in the state. Finally, through the joint efforts of the Fire, Police, Highway, and Water Departments, an Emergency Response Contingency Plan has been developed. In the event of accident or spill involving hazardous materials on any of the Town's major transit routes, critical Town officials will be notified, immediate spill contamination actions taken, and public water supply wells shut down if necessary.

The Town updated the Aquifer and Water Resources District Bylaw (the zoning overlay districts that protect groundwater supplies) in May 2004, adopting a new Aquifer and Water Resource District map based on new modeling of the extent of the areas contributing to the Town water supplies. In May 2007 Littleton Town Meeting approved a DEP requested update to the Aquifer and Water Resource District Bylaw to better align with State goals. May 2007 Town Meeting also implemented a zoning bylaw change requiring Low Impact Development design and associated Best Management Practices guidelines for stormwater be incorporated for all new residential and commercial development. Finally, in light of continued growth and development in the Town, acquisition of areas identified as potential sources of public water supply is necessary so that future residents are ensured an adequate supply of quality drinking water.

3.4.3 Long-Term Development Patterns (see Map 4)

Littleton's current zoning by-law (Town Code, Chapter 173, Zoning) identifies four zoning districts – residential, business, and industrial A & B. A detailed schedule of permitted and prohibited uses within each district can be found under Article V, §173-26. Business and industrial zones are concentrated in three areas: (1) Littleton Common and junction of Rt 2A/119 and Rt 110, (2) I-495 and Rt 2 interchange, and (3) western end of Rt 110/Ayer Rd. The remainder of the town is zoned residential, which includes single family homes and “lodging”

houses, with two family homes and residential social service facilities allowed by special permit of the Board of Appeals. Residential subdivision projects of 10 acres or more are subject to the “open space development” rules under Article XIX, which are designed to “encourage the preservation of significant parcels of agricultural land and open space.” In addition to the zoning districts, Article XIV also identifies an Aquifer and Water Resource District overlay which places additional restrictions on allowed uses within these sensitive resource areas.

Table 3-10 lists all of the approved subdivisions since 1997, as well as the number of lots that have been built within each as of January 2008.

Table 3-10 Littleton Subdivisions Since 1997

Name	New Lots	Total Acreage (Acres)	# of Lots Built as of January 2008	Year Approved	Open Space Area (Acres)
Reed Meadow Over-55 Housing	9	7.5	3	2007	4.4
Hobby Horse Sleigh Ride Lane	9	10.8	4	2006	N/A
Shelburne Village Over-55 Housing	9	9.1	3	2006	5.3
Meadow View Bumblebee Lane	6	21.6	5	2002	9.4
Cobb Development	17	118.6	4*	2001	98
West View Jillian Lane	5	7	5	2001	N/A
Mary Shepherd Estates	17	36.5	17	2000	20.3
Wilson Estates Nancy's Way	5	7.7	5	2000	N/A
Richard Way	7	8.9	7	2000	3.3
Delaney Drive	14	31.4	14	1999	21.6
Laury Lane	4	7	4	1999	N/A
Highland Farms	5	8.6	5	1999	N/A
Center Village	3	5	3	1999	N/A
Jane's Drive	5	8.64	5	1998	N/A
Partridge Lane	5	7.83	5	1998	N/A
Russell Court	2	10	2	1997	7
Apple D'Or	70	Not Available	Not Available	1997/8	

* Cobb Development: of 17 the approved lots, 4 are developed, 6 are preserved for Open Space, 3 are used for agricultural purposes and 4 are available for development.

In addition to residential development, there have also been a number of significant commercial development projects, particularly along Great Road and Taylor Street, perhaps most notably the Orchard Square project.

Population and development trends suggest Littleton will continue to grow steadily in the coming decades, and is perhaps poised to experience accelerated growth as surrounding communities such as Groton, Harvard, Boxborough, and Acton have higher taxes and property values making them less “affordable”. As shown in the previous table, build-out projections for Littleton indicate roughly a doubling of both population and number of households.

These trends and projects suggest the Rt 2A/119 and Rt 2A/110 corridors will continue to experience significant residential and commercial development pressure in the coming years. Such expansion is consistent with observations of development that has occurred along Rt 2A in neighboring communities to the east. Without intentional efforts to conserve open space and manage development along these corridors, they will likely be developed in a similar manner. In addition to the major corridors, large tracts of open land are also likely to experience development pressure for conversion to residential subdivisions. Large subdivisions and “sprawling” development along travel corridors would result in “fragmentation” of the landscape from an ecological standpoint, with significant negative impacts for certain wildlife, such as the stated listed Blanding's turtle. As the landscape becomes more “fragmented”, wildlife will lose, and become disconnected from, important habitat necessary for survival. As a whole, the long-term development patterns suggest a significant threat to open space, or the “green infrastructure”, which supports wildlife, outdoor recreation, agriculture, and the scenic qualities that are all currently part of the defining characteristics of the community.

Section 4: Environmental Inventory and Analysis

4.0 Environmental Inventory and Analysis

4.1 Topography, Geology and Soils

4.1.1 Topography

The Town of Littleton's topography may be characterized by a large number of small irregular shaped hills with relatively small spaces of nearly level land near the town center. Within the hills are numerous small to large ponds, lakes, marshes, swamps and brooks. The topography of the town has been disrupted by Interstate Route I-495, Route 2A-119, 110, 2, and an active commuter railroad. The town's topography is influenced also by being in a transitional position between the lowlands extending eastward to Boston and the highlands extending northerly into New Hampshire.

The elevation of the town varies from a low of 210 feet above sea level at Spectacle Pond and a high of 504 feet at the top of Oak Hill (a difference of about 300 feet). Both locations are in the northern section of town.

There are five named hills (Oak, Proctor, Long Pond Brothers, Newtown and Nashoba) and eight unnamed hills for a total of 13 hills. There are seven named small to large ponds and lakes (Nagog, Fort, Long, Cobb, Mill, Spectacle and Forge) and numerous smaller unnamed vernal ponds. One major brook (Beaver) flows eastward from Boxborough through Mill Pond, then to Forge Pond in Westford. Forge Pond then empties into Stony Brook to end up in the Merrimack River. Reedy Meadow Brook runs along Rt. 2A into Mill Pond, and Bennett's Brook into Spectacle Pond. Numerous smaller unnamed permanent and intermittent brooks occur in nearly all areas in town.

4.1.2 Geology and Soils (see Map 5)

The Town of Littleton is underlain by a variety of unconsolidated glacial deposits overlying relatively shallow bedrock. The bedrock, which outcrops at numerous locations primarily consists of northeast-southwest trending schist and gneiss formations. Schist and gneiss are hard metamorphic rocks estimated to be up to 900 million years old. The observed bedding or attitude of the arranged component minerals is very high angle and is typically highly weathered at the surface. Schist is composed of extremely fine-grained minerals (quartz and mica) arranged in roughly parallel bedding planes. Gneiss is composed of fine to coarse-grained quartz, mica, feldspar and iron bearing minerals also arranged in roughly parallel bedding planes. Often schist and gneiss is intruded by masses of hard coarse-grained granite pegmatite that is more resistant to weathering than the surrounding schist and gneiss. Pegmatite consists of very large crystals of quartz, mica and feldspar. A variety of pegmatite, called quartz monzonite, is actively quarried in Town by Middlesex Materials Corp. for crushed stone for the construction industry. Several historic abandoned limestone (actually marble) quarries exist within the Town. Nearly all of the marble was quarried out completely at least 100 years ago. The Northeast-southwest trending Oak Hill (highest hill in town) is on the edge of the Clinton-Newbury Fault which experiences relatively frequent earthquake activity.

Almost all of the bedrock surface is overlain by very thin to relatively thick deposits of unconsolidated stratified and unstratified silt, sand, gravel and boulders that remained following continental glaciation which retreated from this area about 15,000 years ago. The advancing ice

mass left a very dense non-stratified layer of silt, sand, gravel and boulders. This material is called "till" but is often referred to as "hardpan". When the glacier retreated, the meltwater streams and ponds left many irregular features that we see today. Commonly, these features overly the till, and are typically stratified deposits of sand and gravel, generally referred to as "glacial outwash". In more recent years (up to about 10,000 years), decaying vegetation has formed thick to thin soft black deposits of "organic silt", "muck" and "peat" in swamps, marshes and ponds.

Unique geologic features in Littleton are identified on Table 4-1.

The National Resource Conservation Service (or NRCS) has identified four general classes of soil in the Town. The Paxton-Woodbridge association occupies about 36% of the Town. These are well-drained stony soils underlain with hardpan - generally unfavorable for high-density development.

The Hollis-Paxton association comprises 21% of the Town. Rock outcrops and a bedrock close to the surface limit development on these soils.

The Hinckley-Merrimack-Gravel Pit-Made Land association makes up 33% of the Town. These soils are sandy, gravelly soils found in areas that have been altered by removal or addition of fill. Most of these soils are found west of Route 495 and generally present few development limitations.

Finally, the Muck-Fresh Water association occurs in the Town's wetland areas. Occupying 10% of the Town, development on such soils is severely constrained due to its wetness.

About one-quarter of the Town's land area is classified by the NRCS as either "Prime" or "Locally Important" for agriculture, based on soils analysis reflecting topography, drainage, depth to bedrock, and other considerations. Interestingly, neither development nor still-active agriculture are strongly correlated with the pattern of that land resource, with substantial amounts of agricultural activity on lands not so-identified, and substantial amounts of urban development on land which was so identified.

Table 4-1 UNIQUE GEOLOGIC FEATURES

Site	Location	Significance	Owner
Oak Hill	Oak Hill Road	-major fault zone -highest hill in town -view from top	Town of Littleton
Tophet Chasm	Harvard Road	-glacial lake outlet -80' steep chasm -10' to 40' muck in bottom -subject of early geologic studies	Town of Littleton
Old Limestone Quarries	Whitcomb Ave.	-small historic quarry sites	Smith, under Cons. Restriction
Old Limestone Quarry	#6 Old Orchard Lane	-medium size historic quarry site	#6 Orchard Lane Owner with historic preservation restriction
Granite Quarry	Nashoba Road, Sarah Doublet Forest	-small historic granite quarry being restored	Littleton Conservation Trust
Beaver Brook and Marshland	Boxborough to Westford,	-largest and longest brook in town -overlies important aquifer -extensive associated marshland	Numerous land owners including Town, Water Dept. and Littleton Conservation Trust
Sanderson Esker	Oak Hill Road	-distinctive unusual glacial esker and pond	Private Ownership
Glacial Lake Outlet	Harwood Ave., Long Lake Park	-glacial lake outlet (brook) and steep valley wall to Long Lake	Town of Littleton

4.2 Landscape Character (see Map 6)

Littleton covers about 16.5 square miles of gently rolling hills in northwest Middlesex County. The elevation above sea level ranges between 200 and 500 feet with the higher areas located mostly toward the northern end of town. The Landscape Inventory places Littleton in the “Upper Nashua Valley–Shrewsbury Ridge Unit” and identifies both “Distinctive” and “Noteworthy” areas with regard to landscape character. Open Space Workshops and surveys involving citizen participation, also identified significant landscape character including:

- The Long Lake Park area that affords scenic views and comprises part of an Acton to Groton greenbelt. It also contains important cultural resources, including stone walls that mark routes of historic importance.
- Property north of Long Pond off Wilderness Road, important as a wildlife corridor, and again affording scenic views and protection for Long Pond. The New England Forestry Foundation's property on top of Wilderness Hill offers views to the west of Mt Watatic and Mt Monadnock in New Hampshire.
- The property surrounding Beaver Brook, which would provide recreational opportunities and would serve to protect Beaver Brook wetlands, which are important for flood control, habitat protection, and water resource integrity. This area is also important as a wildlife corridor and includes several certified vernal pools.
- Farmland along Routes 2A and 119, plus other open fields that tie into existing open space.
- The large parcel of land that is bordered by Route 2, Harwood Avenue, Foster Street, and Boxborough Road. This land has the potential of being the largest contiguous open space parcel in the town.

Selected items are depicted on the Unique Features Map included within this Plan.

4.3 Water Resources (see Map 7)

Water and wetlands occupy over 1,000 acres of the Town's area. Two major watersheds drain the Town. The SuAsCo basin drains Littleton's southern regions. Initially, runoff is received by the Assabet River. In Concord, the Assabet then joins the Sudbury River to form the Concord River. In the northern half of the Town, Beaver Brook and Bennett's Brook drain into Stony Brook and then ultimately into the Merrimack River. An overall analysis of Littleton's water resources would state that Littleton is rich with water resources for recreational, water supply and wildlife habitat purposes.

4.3.1 Surface Water

Nagog Pond is the Town's largest body of water. Located on the Acton/Littleton town line, 140 of its 284 acres lie within Littleton. The Pond serves as public water supply for the Town of Concord. Other significant surface water bodies include Forge Pond, Fort and Mill Ponds, Spectacle Pond, and Long Lake.

There is extensive developed recreational access to Long Lake on lands variously managed by the Park and Recreation Commission and the Conservation Commission. There are protected lands on several of the major water bodies, generally affording at least limited use for passive recreation where that is compatible with water supply interests.

4.3.2 Wetlands

Wetlands border many of these ponds. Fort Pond and Long Lake have large areas of associated wetlands. Littleton's most valuable wetland lies adjacent to Beaver Brook. Flowing west-to-east, Beaver Brook wetlands form an extensive central greenbelt spanning the width of the Town. Three of the community's four public wells are located adjacent to this marshy area and other potential well sites within it are being investigated.

4.3.3 Aquifer Recharge Areas

Each of the Town's four (4) drinking water wells' have been located on Town maps with their respective Zones I, II and III delineated. The Town has purchased open space around the Whitcomb Avenue wells and the Spectacle Pond well for aquifer protection. A significant parcel upgradient of the Route 119 well is owned by the local gun club and is undeveloped. Development within the aquifer recharge areas would threaten local groundwater supplies with nitrate loading and reduced recharge. Groundwater impacts stemming from commercial development is assessed via the local groundwater-monitoring program.

Since the 2003 Plan, the Town of Littleton purchased a water easement around Cobb Pond for potential future use as a well site. Based on the topography of that area Lucy's land is directly uphill from this potential water source.

4.4 Vegetation

Littleton's past has heavily influenced the vegetative features of the area. Open space created by farming was predominant throughout the 1800's and early 1900's. As farmland reverted to woodland, early succession growth gave way to the red oak/white pine forests we have in the area today. Other trees such as red and sugar maple, black and yellow birch, shagbark and pignut hickory, American beech, ash and eastern hemlock can be found throughout the town's woodlands. A large stand of eastern hemlock can be found on the northwestern side of Oak Hill around Tophet Chasm.

Besides woodland, wetlands and agricultural open space also make up a large area of the town. The Town's varied terrain of woodland, open field and wetland provide habitat to a rich diversity of plant and animal species. Shade trees have played an important role in the community. At the turn of the century many American elms lined Littleton's roadways. Today the town has an active shade tree committee that works closely with the town's tree warden on annual tree plantings. The ice storm of December 2008 caused much damage to the town's shade trees. The Highway Department and Light Department spent much of the winter of 2008-2009 pruning hazardous limbs.

The Executive Office of Environmental Affairs (EOEA) report "The State of Our Environment" (April 2000) states that "the two biggest threats to biodiversity in Massachusetts are the destruction and fragmentation of wildlife habitats and the introduction of invasive non-native species". Non-native species that are invasive have been transported out of the ecosystem in which they evolved and put in an environment without the population controls native to their original ecosystem. Land disturbance is a common cause for the proliferation of invasive plants. Invasive plants have a tendency to out-compete native plants because of the lack of population controls. Since the writing of the 2003 plan, fragmentation and invasive species threats, continue to be a major issue in Littleton. The Littleton Conservation Trust is closely monitoring invasive species threats on both town owned and LCT properties. Invasive species that have been problematic include autumn olive, burning bush, buckthorn, bittersweet, phragmites, purple loosestrife, knotweed and multiflora rose to name a few. Working with the LCT and volunteers, the town must find ways to survey, catalogue and address problem invasive species threats.

Hemlock, a distinctive tree that can be found throughout Massachusetts is in danger of being decimated by the woolly adelgid, an insect native to Asia. This insect has spread throughout the East Coast up into Massachusetts over the past decade feeding on and killing large stands of

hemlock. Since the writing of the 2003 Open Space Plan, the woolly adelgid has been identified in Littleton. Another invasive species that is common to Littleton, is purple loosestrife a prolific wetland plant with striking purple flowers. While attractive, this invasive plant displaces native food sources for waterfowl and threatens breeding waterfowl habitat.

In 2008, a new threat has emerged in the state of Massachusetts and needs to be monitored carefully. The Asian Longhorned Beetle has been identified in the Worcester area. This non-native beetle infests maple trees and other hardwoods and beetle larvae girdle tree stems and branches eventually leading to the death of the tree. The only effective means of eradication are to quarantine an area and then remove infested trees and destroy them by chipping or burning.

Littleton presently does not have an active forest management program on its town owned lands but has approved environmentally sound forest management on existing Conservation Restrictions that the town holds. The town may consider forest management planning in the future for its properties.

The Massachusetts Natural Heritage and Endangered Species Program has identified two rare plant species that have been observed in Littleton, the first is the Purple Milkweed and the second is the Green Rock Cress. The Purple Milkweed is listed as endangered.

4.5 Fisheries and Wildlife (see Map 8)

The combination of the varied habitats that can be found in the town, help to promote the numerous wildlife species that live in the area. The biggest single threat to wildlife is the current rate of open space fragmentation due to development. Protecting open space areas is just part of the solution to diverse wildlife habitat. Wildlife corridors are also vital in order for animals to survive and reproduce. The disappearance of non forested open space, such as open fields also contribute to the decrease in certain wildlife populations.

Several sites in Littleton have been identified by the Natural Heritage and Endangered Species Program and designated as priority habitats. There are twelve vernal pools that have been officially certified by the Natural Heritage and Endangered Species Program. Vernal pools are temporary bodies of water that provide critical habitat for many wildlife species, including spotted salamanders, wood frogs and four-toed salamanders, which are a state-listed species of special concern. Littleton has the potential to have many more pools certified. Vernal pools that are certified have the added protection of Massachusetts law, providing a 100-foot buffer and preventing alterations provided that the vernal pools fall within wetland resource areas as defined by the Massachusetts Wetlands Protection Act.

Littleton is home to many species of wildlife, including deer, coyote, beaver and turkey. The Massachusetts Natural Heritage and Endangered Species Program has identified several priority habitats within the Town. The Marbled salamander, a threatened species in Massachusetts, has been identified in the town. The Blue-spotted salamander, the spotted turtle and the Mystic Valley amphipod have also been spotted in Littleton. All three are state listed species of special concern. Several other rare wetland species occur within Estimated/Priority habitats designated by the Natural Heritage Program that share boundaries with the town. Two rare wetland birds, the American Bittern and the Least Bittern, occur in these areas. The Blanding's turtle has also been documented in a Priority Habitat area that crosses into Littleton.

The Massachusetts Natural Heritage and Endangered Species Program has recently developed an extremely useful tool to help identify areas in Massachusetts that help protect native species and natural communities across the state. The Biomap was produced to help guide the protection of the state's biodiversity through land conservation and acquisition of Biomap Core habitats. Littleton has several Biomap core areas, of which only a small fraction is protected open space.

4.6 Scenic Resources and Unique Environments

Littleton's scenic resources include the landscapes identified in the Landscape Inventory as cited above, but go beyond that. Some of these items are depicted on the Landscape Character Map. In Littleton's 2002 Master Plan, citizens have also cited:

- Agricultural lands, whose openness and activity are central to the rural character of the community and highly prized by many of the town's residents. These lands are threatened by the possibility of development.
- Scenic vistas across open water and fields. Littleton's topography isn't dramatic, so the benefit of those views depends upon unobscured roadside and middle ground areas. In this region, these open areas can quickly become overgrown unless agriculture or some similar activity maintains openness.
- Historic resources unique to Littleton. The town has a rich legacy of historic structures, roads, walls, and archaeological remains. While there are several concentrations of such resources, they are widely distributed across the community, in that way enriching many areas, but at risk of being overshadowed by newer and potentially unsympathetic development.

Archaeological and historical areas of special priority are:

- The stone chamber on Whitcomb Avenue near the Harvard town line. The chamber is located along the road side next to the barn. This site is classified as a Stone Chamber – not a root cellar. It is historically significant because it is 1 out of 150 such chambers in the area from New York to Maine.
- The glacial boulder located off Beaver Brook Road. This large boulder is now hidden within the woods (that used to be farm land). This rock is historically significant because it is related to the American Indian history of Littleton. It is mentioned on the original layout of Nashoba plantation in 1654. It was used as a marker along the property line. This boulder could be lost through land development for housing. (It could be blasted to get it out of the way.)
- The old stone bridge that crosses Beaver Brook. The Massachusetts Historical Commission is currently investigating the historical significance of this bridge.

The following sites are also of importance but they are already under some form of protection:

- The Gray Farm barn and shed on Hartwell Avenue, which were recently restored with the development of the houses on Gray Farm Road. These are not only historic structures, but they also provide a very scenic view, especially at sunset.
- The Lime quarry off Whitcomb Avenue, across from Porter Road. This site is located on private land but is preserved via a conservation preservation easement.
- Tophet Chasm on Oak Hill as described in the "Geology, Soils, and Topography" section (4.1).

- The Westlawn cemetery is an important historical site. It contains important: Revolutionary, Civil, and Spanish-American war burials. In addition, a certified vernal pool is located in the back of the cemetery.
- The old burying ground on King Street is listed on the National Historic Register. The first burial in this cemetery is dated 1717.
- Also on the National Historic Register is the Houghton Memorial Building at the corner of Foster and Rogers Streets. It was built in 1895 by the children of William Houghton. It had been Houghton's wish to have a Town library building. For many years it housed the Reuben Hoar Library, and is now owned by the Town. It is rented by the Littleton Historical Society with a one hundred year lease.
- The Rose Wood House on Meeting House Road is on the National Historic Register. The home was built before 1780. The current owners, who bought the home in 1996, have restored the home to much of its original detail.
- Liberty Square at the intersection of Taylor and Hill Roads. There, the Littleton Minutemen held drills under the command of Lieutenant Aquilla Jewett. The Minutemen assembled there on the way to Concord in 1775. A monument was erected with the names of all of Littleton's Revolutionary War soldiers.

The following are priority habitats because they are home to rare and endangered wildlife:

- Beaver Brook Marsh (also acts as a wildlife corridor)
- Spectacle Pond
- Cobb's Pond

Note: See the Fisheries and Wildlife section (Section 4.5) for details on the rare and endangered species that live in these areas.

4.7 Environmental Challenges

Littleton's major environmental problems stem from growth, despite the care with which it is managed. New development along the Route 2A corridor has contributed to land consumption, and displacement of habitats, and possible threats to groundwater quality.

4.7.1 Hazardous Waste Sites

According to data maintained by the Massachusetts Department of Environmental Protection – Bureau of Waster Site Cleanup, there are a number of properties in Littleton that are currently being remediated or have completed remediation. A comprehensive list of areas of chemical releases and spills in Littleton will be found in Appendix C of the final update.

4.7.2 Landfills

Littleton has one landfill, now capped and serving as a transfer station for Littleton residents only; it is maintained and operated by the Littleton Highway Department. There is an active recycling program in place, with separate dumpsters and trailers set up for plastics, wood, bulk items, bottles and propane tanks, among other items.

There is a monitoring well network encompassing the landfill footprint area, with one well located upgradient and four wells downgradient. These wells continue to be sampled annually by

the Littleton Water Department; past sampling results have been favorable, identifying no negative impacts on local groundwater supplies.

As the landfill now serves as a transfer station, it is likely that future solid waste disposal needs will be met.

4.7.3 Erosion

Widespread erosion problems are not apparent in Littleton. Localized areas of erosion have occurred associated with the development of land and the clearing of vegetation.

A number of years ago, the Town of Littleton received a state grant to revitalize Long Lake; among the measures being implemented with the funding are bioretention cells and rain gardens in the neighborhoods surrounding the Lake. These kinds of stormwater management tools are becoming increasingly popular in communities looking to treat stormwater before it is discharged into storm drains and makes its way to our lakes and streams.

Littleton currently does not have an earth removal bylaw. While Littleton does have larger areas of agricultural land, there are no known cases of large-scale erosion problems. However, there may be localized runoff of nitrates within the stormwater.

4.7.4 Flood Hazard Areas

Littleton has several areas designated as 100 or 500-year flood zones. These areas are concentrated along Beaver Brook and the larger surface water bodies in town. Developed areas along the shores of these water resources could be at risk of flooding during larger storm events. Many of these flood zones coincide with existing wetlands protected and regulated by the Wetlands Protection Act, thereby reducing development impact in these areas.

4.7.5 Sedimentation

Sedimentation is evidenced locally after heavy rains at sites of residential development and commercial properties. Haybales and sediment fences, although required, are not always utilized or utilized optimally, resulting in localized sedimentation in streams and ponds. Stricter controls at the time permits are granted by the Town would be helpful, as would encouraging residents to report heavy sedimentation events as they occur.

4.7.6 Development Impact

This latest population boom has seen homes built on previously undeveloped land, most notably on lands formerly used for agricultural purposes. While some of these developments have preserved open space as part of their development process, overall the acreage lost to new subdivisions to accommodate Littleton's population growth is significant. A list of subdivisions approved since 1997 is noted in Table 3-10.

4.7.7 Climate Change

While the full environmental impact of climate change cannot be predicted, it is likely to present a number of environmental challenges. Perhaps more accurately, climate change is likely to amplify a number of environmental challenges previously mentioned. For example, there will likely be greater frequency and severity of storm events, such that major flooding associated with

50 or 100 year storm events will become more frequent. There is also the potential for an increase in seemingly unusual or unpredictable weather events. Invasive plant species will also likely become even more pervasive with shifting temperatures and weather conditions. The changing conditions will result in added stress to some native plant species, weakening them and making them even more susceptible to being outcompeted by invasive species. Further, poison ivy is also likely to become more pervasive, increasing the potential for inadvertent exposure by residents using public open space, presenting a potential increased health risk. Other outdoor related health risks such as mosquito and tick borne illnesses are also likely to increase.

4.7.8 Ground and Surface Water Pollution

Surface water and groundwater are closely interrelated. The quality of the Town's groundwater has, in general, been very good. In the early 1980's Littleton adopted a Water Resource Overlay by-law and Groundwater Monitoring Program. This program, which focuses on land-use planning, groundwater monitoring, groundwater quality trend analysis, and early contamination detection, has served the Town well over the years. Littleton's drinking water quality continues to meet or exceed all State and Federal Safe Drinking Water Act Regulations and Guidelines; this program has been so successful, that it has become a national model for local Groundwater Protection.

Surface water quality has been somewhat variable. Section 303(d) of the Federal Clean Water Act (CWA) requires states to identify those water bodies that are not expected to meet surface water quality standards after the implementation of technology-based controls and, as such, require the development of total maximum daily loads (TMDL). Long Lake and Mill Pond are included on the list, threatened by pollution from noxious aquatic plants, nutrients, and organic enrichment.

A study of surface water conditions was done for Long Pond in 1980 followed by studies for Forge Pond and Long Pond in 1990, Mill Pond in 1998 and Spectacle Pond in 2001. Funded jointly by the Town and State Programs, the studies suggest a number of remedial actions for the Town to take to improve water quality in the ponds.

A 319 Non-Point Source Grant and A DEM Demonstration and Remediation Grant were awarded to the Town of Littleton to install a series of BMP's (best management practices) throughout the Long Lake neighborhood; this approach was designed to control and remediate the stormwater runoff that drains the steep neighborhood streets and discharges directly into the Pond. Other segments of this remediation project included: a) the construction of a large engineered wetland cell, which will retain and attenuate stormwater runoff from a large segment of the neighborhood area, before being released to the Pond; b) the reconfiguration of the beach and boat ramp drainage systems, parking lots and accesses to receive and remediate stormwater runoff; c) the reconfiguration of the Lake Shore Drive drainage system; d) limited shoreline dredging; and e) limited, select herbicidal application aimed at the proliferation of exotic, aquatic plants around the beach area and northern half of the pond.

The rain gardens are designed to collect stormwater runoff from roofs and impervious surfaces and allow it to recharge into the ground. These gardens filter out the harmful nutrients that would typically be flushed directly into the Lake. Perennial plants are planted in the garden and thrive off the nutrients left behind. Rain gardens have an additional benefit in reducing the need for large amounts of turf; they create a pleasing landscape that does not require additional watering that a lawn would need.

Accelerated eutrophication in Mill Pond has been an ongoing problem for many years, resulting from the Pond's shallow depth and heavy nutrient loading from nearby farms, homes, and industrial discharges. The Pond's open water body has been compromised significantly by the proliferation of exotic, aquatic plants. Local industries have reduced the nutrient loads in their effluent, but dredging the pond bottom and remediating stormwater runoff is needed if substantial Pond improvements are to be made. The Army Corps of Engineers teamed up with the Town to review the dredging plans and other remediation options for Mill Pond. At this writing the Army Corps of Engineers is working on the final design and economic stimulus money may be available for this project.

4.7.8 Environmental Equity

While Littleton does not contain any “environmental justice” (EJ) areas as designated by the Massachusetts Executive Office of Energy and Environmental Affairs, there are EJ populations in the neighboring towns of Ayer and Acton (see Map 2) that could be served by outdoor recreation opportunities in Littleton. Further, environmental equity is recognized not only with regard to EJ populations. Equitable access and use for residents of all ages, socioeconomic backgrounds, ethnicities, and physical abilities is an important part of meeting the open space and recreation needs of the community. Currently, Littleton enjoys a relatively even geographic distribution of conservation lands and open space, with certain high use recreation and community event areas centrally located. For example, Long Lake, which supports the town beach, is centrally located within an area of town with the greatest population density. While this location has the advantage of serving a large number of residents in close proximity, it is important to ensure the outdoor and recreation opportunities at Long Lake continue to be a community-wide resource, and do not simply become a neighborhood amenity. Prouty Woods and Fay Park also support many community events and outdoor programs and are centrally located. Access and recreation facilities specifically designed to serve residents with physical disabilities, as well as young children and elderly adults, presents an ongoing challenge and opportunity for improvement. Finally, as changing demographics present more foreign born and/or non-English speaking residents, it may be necessary to give more consideration to language and communication of messages on open space and recreation related signage.

Section 5: Lands of Conservation and Recreation Interest

5.0 Lands of Conservation and Recreation Interest (see Map 9)

Open space preservation is necessary if Littleton is to maintain the rural character treasured by most residents. It is an important resource for local agriculture/food, outdoor recreation, and drinking water protection, as well as habitat for animals and plants. The goal of this section is to identify and map all protected and unprotected land of interest for conservation and recreation. This inventory has been developed by reviewing the files of lands held by the Town or State and lands with special tax-exempt or tax-reduced status. Each parcel has been categorized and numbered for reference on the accompanying tables.

Table 5-1 summarizes the protected open space lands that are owned by the Town of Littleton or the Littleton Conservation Trust, and are managed by the Trust, the Littleton Water Department or the Conservation Commission. These lands have been set aside in perpetuity and, for most, only a vote of the legislature can release them for other use. Table 5-2 is a summary of unprotected lands (park and recreation land, multi-purpose open space land) that are owned primarily by the Town and are managed by various entities, including the Park Department, the School Department, the Board of Selectmen, the Town the Board of Health, the Highway Department or Littleton Water and Light. Table 5-3 lists those lands enrolled in the State's Chapter 61 Program for Forest Land; Table 5-4 lists those lands enrolled in Chapter 61A for Agricultural lands; and Table 5-5 lists those lands in the Chapter 61B program for private recreation lands. This inventory categorizes the conservation and recreation lands in Town and identifies the name, location, owner, manager, acreage, and zoning of the lands, as well as a description, condition, recreation potential, public accessibility and degree of protection for each parcel.

It is important to recognize that parcels subject to Chapter 61 restrictions are not necessarily protected in perpetuity; they are vulnerable to development and the protection offered to the community.

Summary of Protected and Unprotected Land

Land Category	Acreage	% of Town
Protected Lands	1570.80	14.6
Park and Recreation Land (unprotected)	31.91	0.3
Multi-purpose Open Space Land (unprotected)	478.95	4.5
Chapter Lands (unprotected)	2000.43	18.6
TOTAL	4082.09	38%

5.1 Land Protected from Development

Protected lands in Littleton are comprised of those areas either owned by the Town of Littleton or the Littleton Conservation Trust (LCT) and managed by either the Water Department (including the Concord Water Dept.), LCT or the Conservation Commission (CC). These lands include a variety of conservation lands, parks, wetland areas and others that serve the recreation and open space needs of the citizens of Littleton.

Beyond Town-owned lands, there are State-owned lands, conservation restrictions (“CRs”) and agricultural preservation restrictions (“APRs”). Restricted lands are defined as less than fee interests in land that can keep land in an open state in perpetuity. For example, a property owner might be willing to sell or donate a conservation easement or restriction, which would prevent future development on the land. As is true in most places, this land is preserved but is generally not available for public access. The use of these easements and restrictions are helpful in maintaining community character without the actual purchase of the land by the Town or Conservation Trust.

5.1.1 Permanently Protected Land

Permanently protected land is considered conservation land owned by the Town of Littleton, State, Conservation Trust (LCT); or Water Departments, as well as CRs and APRs.

Permanently protected Town lands include:

Manager	Acreage	% of Town
Water Departments	131.27	1.2
Conservation Commission	729.78	6.8
Littleton Conservation Trust	309.37	2.9
Joint Management	122.05	1.1
New England Forestry Foundation	96.33	0.9
Conservation Restrictions:		0.5
Smith (LCT)	47	
Cobb (CC & LCT)	10	
2 Misc. (CC)	2	
Ag. Pres. Restrictions:		0.3
Nagog Hill Orchard	33.5	
Div. of Fisheries & Wildlife	89.5	0.8
TOTAL	1570.80	14.6%

Total land area = 10,760 acres

Amongst these protected lands are Bumblebee Park (CC), Sarah Doublet Forest (LCT), Newtown Hill (CC) and Nagog Hill Orchard (some CC, some APR, some municipal). More sizeable parcels of land include the Oak Hill Conservation Land (220 acres, CC) and the Long Lake Park (115.35 acres, CC). The OSRPIC and LCT completed a “Guide to Conservation Land” in May 2005, which highlights Town-owned conservation lands, provides maps and information on each site which has been helpful in informing the public of the conservation land opportunities throughout Town.

5.1.2 State-owned Land

Massachusetts Fisheries and Wildlife owns 89.5 acres bordering Route 2 and the Boxborough line. At one time a Commuter Rail Station was planned for the site, but later abandoned because of environmental concerns. It is now protected in perpetuity.

5.1.3 Agricultural Preservation Restrictions

The Agricultural Preservation Restriction (APR) program is a way for farmland to be protected from future development. The APR program pays farmers the difference between “fair market value” and the “agricultural value” of their farmland in exchange for a permanent deed restriction, which precludes any use of the property that will have a negative impact on its agricultural viability. There are presently two APRs in the Town of Littleton, totaling approximately 45 acres. The first is on three sections of the Nagog Hill Orchard totaling 33.5 acres. The second, 11.3-acre APR is on the ‘Long Field’ owned by the New England Forestry Foundation.

5.1.4 Conservation Restrictions

Conservation restrictions (“CRs”) can be placed on a parcel of land for a specified number of years, or in perpetuity. The conservation restriction (or easement) is a restriction to a particular specified use or an exclusion of certain types or degree of development. The restriction runs with the land and is recorded at the Registry of Deeds in a deed instrument. This tool functions to retain the property in its natural state or in agriculture, farming or forest use; to permit public recreation; or to restrict development activities. Conservation restrictions, sometimes called development restrictions, must be granted voluntarily; however, the Conservation Commission and/or Planning Board can encourage this mechanism as a way of maintaining privately owned land in a natural state.

There are 3 CRs held by the Conservation Commission:

- A 1-acre lineal easement from Moore Lane to Black Pond in Harvard;
- A 1-acre with old limestone quarry on Orchard Lane off of Whitcomb Ave.
- An 85 acre CR on land owned by the New England Forestry Foundation, known as Prouty Woods

There are 3 CRs held by the Littleton Conservation Trust on Whitcomb Avenue, donated by Edith and Paul Smith.

There are CRs totaling approximately 10 acres on 5 building lots with restricted building envelopes in the Cobb Pond sub-division. These are held jointly by the Conservation Commission and LCT.

There are several more CRs in the process of being designated, but have not yet been finalized.

5.2 Lands Not Protected from Development

Private open lands can be offered various levels of protection. The designation of private parcels as Forest lands (Chapter 61), Farm lands (Chapter 61A), or Private Recreation lands (Chapter 61B) restricts the use of land in exchange for significant reduction in taxes. Land that is currently taxed under the exemptions allowed by M.G.L. Chapters 61, 61A, and 61B has very little protection. Currently, there are approximately 3,675 acres of land in Littleton that is classified as temporarily protected under this tax abatement program.

Properties under these designations allow the Town a right of first refusal to purchase the land should the property owner intend to take the land out of the restricted status. Land may be taken out of Chapter 61, 61A or 61B classification by notifying the Town and paying a withdrawal penalty tax. However, such land may not be sold for, or converted to, residential, commercial or industrial use while taxed under the classification without written notification to the municipality in which it is located. The Town has 120 days in which to exercise its right of first refusal option to purchase the land. Should this time period pass and/or the Town states in writing that it will not act on its option, the land may be developed for alternatives use(s), removing it from its “open” status as forest, farm or recreation land.

Town-owned “apparent” open space properties that are held in municipal status are also not permanently protected. These lands include the Town Forest on Harwood Avenue, (86 acres), Morgan Land on King Street, (50.8 acres) and parts of the Morrison Orchard. It would take a Town Meeting vote to remove these lands from their current condition.

There are additional lands of high value to the Town owned by individuals who have chosen not to put their land into one of the state programs, and not specifically identified here.

5.2.1 Chapter 61 Forest Lands

Forest Lands require a minimum of ten contiguous acres under a minimum 10-year management plan certified by a State Forester. Once the application has been received and approved, the classification statement functions as a lien upon the land for taxes levied under the provisions of M.G. L. Chapter 61. The landowner must re-file every ten years or the land shall be removed from classification by the Town Assessor. A tax payable on stumpage income for the two years prior to management and a much reduced property tax is payable once per year during the management period. Approximately 199 acres in Littleton are classified as Chapter 61 Forest Lands.

5.2.2 Chapter 61A Farm Lands

Farm land requires a minimum of five contiguous acres “actively devoted” to agricultural or horticultural use. These classifications include animals, fruits, vegetables, and forest products. To qualify as “actively devoted,” a minimum of 500 dollars in gross sales income during the two prior years is required. One must apply to the Town Board of Assessors for consideration, and the status must be renewed every year. A reduced property tax is applied if approved. There are approximately 1,447 acres of land classified as Chapter 61A Farm Lands in Littleton.

5.2.3 Chapter 61B Private Recreation Lands

Private Recreation land must have a minimum of five acres that is left wild and/or maintained for wildlife habitat or used for recreational purposes either by the public or a private non-profit group. One must apply to the Town Board of Assessors for consideration and the status must be renewed every year. A reduced property tax is applied if the land is approved. There are approximately 355 acres of land in Littleton classified as Chapter 61B land.

5.3 Recreational Facilities

Littleton currently has numerous recreational facilities to serve the community. Many of these facilities are located on municipal lands associated with local schools. A current inventory of recreational facilities includes:

- Koerper Field (1) – Ayer Road; soccer;
- Ayer Rd. Bike Park
- King Street Fields (2) –King Street; (leased from St. Anne's) multi-purpose;
- High School Fields (5) – King St; 2 tennis courts, 1 baseball, 1 soccer, 3 multi-purpose;
- Russell Street Fields (5) – including track, football and 3 multi-purpose fields;
- Shaker Lane Fields (3) - 1 baseball, 2 multi-purpose;
- Shattuck Street behind Town Hall - (1) 1 baseball, 2 tennis courts;
- 300 King Street - 1 outdoor basketball court, 2 tennis courts, "Castle in the Trees" playground;
- Foster Street - Fay Park some playground equipment, large field for public gatherings, concerts, picnics, events, etc. and gazebo;
- Town Road- Town Beach with beach house, picnic area, playground.

Recreational facility needs are based somewhat on demographics, but mostly on enrollment in school and in Park and Recreation programs.

5.4 Regional Open Space

Map 1 shows areas of open space located in towns adjacent to Littleton. The conservation restriction given by Edith Boyd Smith creates linkages between Littleton and Harvard which serve wildlife communities which do not recognize town and state borders. The town has pursued working relationships with neighboring towns' conservation groups. It is beginning to connect trails and look at other cooperative ventures. The town will continue this very worthwhile pursuit.

It should also be noted that Littleton has numerous water resources which present unique challenges to the effort of preserving open space and maintaining water resources in the area. There is Beaver Brook and many small streams, some of which connect lakes or ponds. There are seven lakes and ponds, four of which are entirely within its borders, and three shared with Ayer, Groton and Acton . These bodies of water add immeasurably to the quality of life for Littleton residents, as well as being a valuable resource for wildlife of many kinds. Keeping these lakes and ponds clean and healthy is the particular concern of the Clean Lakes Committee, along with the Littleton Conservation Commission and the Littleton Conservation Trust. Good water quality requires care taken regarding runoff from surrounding land; necessitating education about

fertilizer use, septic system care and, in addition, the washing of boats brought from other lakes and ponds so that noxious weeds and other water plants are not transported into a body of water.

5.5 Opportunity Areas

Littleton is fortunate to have protected parcels distributed throughout Town with major holdings adjacent to the most densely populated area around Long Lake. These serve the community well, but opportunities exist to expand holdings to further secure town character, outdoor recreation and wildlife corridors. The following table lists some general areas of Town that have unique or natural lands that are not presently protected and should be considered in the future for protection. This expansion should be consistent with the Town's policies towards open space acquisition and community needs. Sections 6 and 8 discuss the Town's open space and recreation goals and Section 7 summarizes the needs of the community that have been described earlier in the text and analyzes these needs. Section 9 is the Action Plan, which identifies the five-year plan for implementation of responses to community and regional needs.

Unique or Natural Lands Currently with Limited or No Protective Status

Name	Address/Zoning	Current Protection Status	Potential Use and Condition
Route 2A/ Route 119	From Powers Road to Gilson Road	Limited; privately held	Maintain current scenic roadway, preserve agricultural use.
Newtown Road	From Telephone Tower to Ipswich Drive; Nagog Hill Road to the Yapp Cons. Land	Limited; privately held Limited, privately held	Maintain scenic views, add to existing protected land
King Street	Across from Congregational Church	Limited, Municipally owned	Maintain wildlife corridor, viewshed, rural quality
Harwood Avenue	Town Forest	Limited; Municipally owned	Maintain wildlife corridor,
Beaver Brook Corridor	Along Great Road and Rt. 495	Limited; privately held	Maintain aquifer, wildlife corridor
Whitcomb Avenue / Sanderson Road, Oak Hill Rd.	Across the road from Oak Hill Conservation Land	Limited; privately held	Protect aquifer; add to wildlife corridor
Land adjacent to Newtown Hill & other area Cons. Land	Boxboro Rd. to Foster St.	Limited; privately held	Maintain wildlife corridor
Remaining Cobb Development Lots	Pickard La. Ext.	None	Complete multi-parcel aggregate. Wildlife habitat
Aggregate Industries Quarry Site	Ayer Rd.	None	Playing fields/Park

Section 6: Community Vision

6.0 Community Vision

6.1 Description of Process

The Town of Littleton's Open Space and Recreation Plan (OS&RP) Implementation Committee began work in December 2008 to guide and oversee the development of this Open Space and Recreation Plan Update. In March 2009, a draft Plan was submitted to the Executive Office of Energy & Environmental Affairs (EOEEA) in order to meet eligibility requirements for the state L.A.N.D. grant program, as a L.A.N.D. grant application was being prepared concurrently with the OS&RP for the purchase of "Lucy's Land", a 53-acre parcel on Newtown Road owned by the Yapp family. The draft Plan was approved contingent on completion of the community input sections.

The committee developed a town-wide survey that was posted on the Town website from February 18, 2009 to April 14, 2009 and was mailed out to the Town (3800 households) to solicit feedback on draft goals and objectives that were developed by the Implementation Committee. There were 250 respondents to the survey, a 6.6% response rate. The survey and the complete results can be found in Appendix A.

The Committee also held a forum on March 25th to ask for feedback from residents as to open space goals and objectives for the future. The meeting consisted of a brief summary of the work the Committee had done to date followed by a presentation of maps depicting protected and unprotected open space. An open discussion followed, allowing participants to express opinions and concerns, as well as to provide additional information on certain aspects of the Plan.

6.2 Statement of Open Space and Recreation Goals

Based on the input from the survey and the forum, the following are the town's broad, long-term goals regarding open space and recreation:

- *Protect and enhance the quality of Littleton's surface and groundwater as a source of drinking water and for recreational use*
- *Preserve Littleton's important land resources through land acquisition, improved management and education*
- *Provide improved recreational opportunities for Littleton residents of all ages and abilities*
- *Promote the use of Littleton's open space by residents, through developing better access to protected properties and encouraging community participation in open space maintenance*
- *Link Littleton's open space and trails both throughout the Town and on a regional level, particularly near shared natural resources.*
- *Balance development with the preservation of open space to help retain Littleton's rural character*

- *Find funding resources outside of taxes for protecting open space or building recreation facilities*
- *Protect agricultural lands within Littleton*

Section 7: Analysis of Needs

7.0 Analysis of Needs

7.1 Summary of Resource Protection Needs

Littleton has large quantities of land and water resources that require careful management and planning to ensure their long-term protection. This protection will help maintain the rural character of the Town and its precious, and limited, natural resources. The open farmland, ponds and forested areas create a small-town atmosphere despite development pressures and Littleton's proximity to main transportation routes.

Littleton's residents strongly value the Town's land and water resources. When asked in the town-wide survey to rate for importance various aspects of open space preservation, drinking water and lake and stream protection were the top two answers. When asked what was most important with regard to open space and recreation, the number one answer was continuing to preserve and protect open space.

7.1.1 Land Resources

Conservation Land

Although the Town and private trusts own over one thousand acres of permanently protected land in Littleton, even more remains threatened by development. There are over two thousand acres of unprotected woodlands, farmland and water resources that are part of the landscape and serve other important functions.

More than two thousand acres of land are considered "temporarily protected" in the State's Chapter 61, 61A and 61B Program. This number has decreased since 2003. Approximately three-quarters of this land is used for agriculture in some form (field crops, orchards, productive woodlands and pastures), while the other sections remain in long-term forestry management or private recreation land. There exists an opportunity for Littleton to expand and link its open space inventory by acquiring rights to these lands when they are removed from the Chapter 61 Programs. The Town has acquired a number of such properties since the 2003 update of the Plan, including the Hartwell, Cobb, and Prouty land. The Town is in the final stages of acquiring one more such parcel, the 54-acre Lucy Yapp property on Newtown Road ("Lucy's Land"; see Table 5-6). At the time of writing, the Town has made an agreement with the land owners and in the May 2009 Town Meeting approved purchase of this property using Community Preservation Act funding as well as a L.A.N.D. grant from the Commonwealth. Further acquisition of lands such as these will also provide an opportunity to secure lands contiguous to or within the aquifers, sensitive wetlands, agricultural lands and lands that provide scenic views. This would protect the rural character of the Town, and help to extend the "Green Corridor" that is desired by many residents. In addition, it is important to protect distinct natural communities of flora and fauna, such as wetland areas, grasslands, vernal pools, and old-field growth.

In addition to protecting conservation land within Littleton, there is also a need to connect parcels and trails with existing protected properties and trails in other towns. Preliminary talks have been held between members of the Littleton Conservation Trust and members of the Conservation Trusts in Westford, Harvard, Acton, Groton and Boxborough to discuss linking trails, but thus far no plan to do so has been decided upon.

Recreation Land

Long Lake provides most of Littleton's public water recreational opportunities, though there is public access to Mill Pond, Spectacle Pond and Fort Pond. Long Lake hosts the Town Beach, and is a focal point of The Park & Recreation Department's summer Recreation Programs, which includes swimming lessons and day camp.

Littleton has playing fields and tennis courts available on Town and school properties, and also leases fields from St. Anne's Church.

According to survey results, Littleton residents are extremely interested in maintaining and improving current recreation land, in particular the basketball and tennis courts, and acquiring or converting additional parcels for specific purposes, including a community track. Additionally, citizens would like to see bike paths, especially those which would connect to bike paths already established in contiguous towns such as Westford and Groton.

7.1.2 Water Resources

Littleton has several water bodies that afford recreation and drinking water supply opportunities, and Littleton residents have overwhelmingly expressed interest in keeping these resources safe and protected. Long Lake, Mill Pond, Spectacle Pond, and Forge Pond are major water resources that need to be protected. Additionally, the Littleton/Acton border is bounded in part by Nagog Pond, the surface water supply for the Town of Concord. A highly productive aquifer is located along Beaver Brook and supplies water for the Town.

Protection of surface and groundwater supplies for recreation and drinking water purposes is critical to maintain and enhance the quality of life in Littleton now and into the future. As existing homes in the watersheds of the ponds are sold, the septic systems will be tested for Title 5 compliance and those that are in failure will be upgraded or replaced. This will assist in protecting the water resources. The Town is also in compliance with the Stormwater Management regulations that have been set forth by the Environmental Protection Agency. In addition, the following steps have been taken or are in the process of being taken to continue to protect Littleton's water:

- The Clean Lakes Committee administered a 319 and Demonstration Grant for the restoration of Long Lake. "Best Management Practices" (BMPs) and in-lake restoration techniques began in 2004 with the goal of decreasing the nutrient and sediment load into Long Lake, and significantly reducing the near-shore aquatic vegetation.
- Town Meeting adopted a local wetlands protection bylaw in May 2003.
- In 2007, the "Low Impact Design Best Management Practices Manual" was written by the Littleton Water Department as a result of the stormwater management work on Long Lake.
- The Clean Lakes Committee continues to pursue stormwater management strategies to support the restoration of Long Lake, Mill Pond, Spectacle Pond and Forge Pond
- An invasive plant eradication program is in place at both Long Lake and Spectacle Pond though a three year limited herbicide treatment program.
- The Littleton Water Department is working with the Army Corps of Engineers towards a cost effective method for the restoration of Mill Pond by creating biodiversity through a limited dredging program.
- "Best Management Practices" are being publicized so that they will be implemented by the residents and businesses that are in the aquifer and water resources zones.

7.2 Summary of Community's Needs

7.2.1 Conservation

Conservation needs as expressed by the community reflect residents' appreciation for Littleton's rural character and their desire to actively use open space. Overwhelmingly, response to the survey indicates that citizens want to continue to preserve open space, and specifically would like to protect open space from development. In addition, especially in the economic climate of 2009, citizens are interested in finding alternate sources of funding (other than tax increases) to purchase land. At the Town Meeting in May 2009 voters approved the purchase of Lucy's Land using CPA funding and a LAND grant with a vote of 164 for to 9 against. Notably, 85% of respondents to the survey indicated that they would vote favorably to purchase a piece of conservation land at Town Meeting.

Survey and forum results also expressed the need to better maintain the open space properties currently protected and to make them more accessible to a broader range of citizens, including senior citizens and people with disabilities. Community work days, education, and newspaper articles were mentioned as ways to engage more residents. Residents would like to see better parking areas and more walking trails. The senior population in particular requested more benches and picnic tables for passive recreation, and sidewalks to the conservation areas were also frequently requested.

7.2.2 Recreation

Recreation needs as expressed by the community were varied, but overall themes could be identified. The following were most popular:

- Bike path/bike lanes
- Swimming pool
- Sports fields
- Community/recreation center
- Programs for young children
- Track
- More/better sidewalks
- Skateboard/rollerblade park
- Programs for seniors

Of these, two are currently in progress and have broad town support. The Littleton Track Organization received funding through Town Meeting in May 2009 to perform a feasibility study on the possibilities of building a new track. Also, in December 2008 a Bike Path Committee was formed to begin work on a path from Long Lake to the commercial center of the Town and to investigate possibilities for other bike paths which might connect to adjacent towns.

In many ways Littleton's recreation needs as determined by the community closely relate to those identified for the Northeastern Region in the State Comprehensive Outdoor Recreation Plan (SCORP), of which Littleton is a part. In the region, as in Littleton, bikeways and locations for swimming were strongly identified for possible areas of new recreational development. Improving access for people of all abilities to existing conservation and recreational facilities is also a common theme in both Littleton's community review and the SCORP. When it comes to

funding, Littleton's citizens strongly expressed the desire as the broader region to better maintain and improve existing recreation and conservation areas, which 98% of those surveyed in the Northeastern Region identified as the most important funding priority.

7.3 Management Needs, Potential Change of Use

7.3.1 Management

- Discuss and implement undeveloped municipal lands coming under the ownership of the Littleton Conservation Trust or Conservation Commission in order to establish “protected” status under the Open Space and Recreation Plan guidelines.
- Continue to fund the Community Preservation Act and use income from cellular telephone towers to provide funding to purchase open space lands of interest and importance.
- Use the Senior Tax Abatement Through Work Program and the student community service requirement to maintain/mow certain trails.

7.3.2 Threatened Areas

The area along Rt. 2A / Rt. 119 provides a distinct character to Littleton, reflecting its pastoral and agrarian history. This area should be a prime focus of preservation as it contains large tracts of farmland, providing a unique landscape for those passing through Town, and potentially providing local food for Littleton and the greater Boston area. Already, hundreds of acres of previously open space along this corridor have been replaced by strip malls, condominiums, and a day care center. Recently, the Town was asked to change the zoning of another 81 acres of prime agricultural land from residential to commercial, and though the request was pulled before a vote, this parcel and others are almost certainly going to come before the Town again. The Town should seriously consider the ramifications of such requests for zoning changes as farmland and prime agricultural soils are very valuable and can never be restored once converted to commercial/industrial use. In addition, such rezoning becomes a “slippery slope” for other properties along this stretch of rural highway and elsewhere in town.

Areas adjacent to Beaver Brook and the ponds provide distinct wildlife habitat, recreational resources, and are critical to the surface and groundwater supply. These areas help maintain the groundwater aquifer and are at risk of further development. Preservation and land acquisition goals should recognize the importance of these lands to the overall water quality and quantity available in Town.

7.3.3 Special Opportunities

- The Town should restart efforts to create a Tri-Town Conservation Area with Boxborough and Harvard. Where possible, focus should be on acquiring lands to create linkages with existing conservation land.
- In 2007 Littleton voters adopted the Community Preservation Act at 1% in anticipation of future acquisitions. The Town has the opportunity to increase its commitment in the future incrementally to 2 or 3% to take advantage of matching funds.

- There is currently an opportunity to build a bike path connecting the Long Lake residential area with the Town's commercial center. This would be the Town's first bike path.

Section 8: Goals and Objectives

8.0 Goals and Objectives

The following general goals are those identified in “Community Needs” (Section 6), and are followed by objectives that will drive the development of more specific recommendations in the “Five-Year Action Plan” (Section 9). These goals and objectives were composed on the basis of the “Analysis of Needs” (Section 7), and input received from the Open Space and Recreation Plan Implementation Committee, the town-wide survey and the public forum.

Goal:

Protect and enhance the quality of Littleton’s surface and groundwater as a source of drinking water and for recreational use

Objectives:

- Educate residents about protection of surface and groundwater with non-polluting land and water practices
- Acquire/preserve new sources of drinking water
- Fund lake restoration
- Work with Littleton Water Department to coordinate maintenance/improvement efforts of ground water, surface water and wetlands
- Conserve lands to maintain aquifer and surface water health.

Goal:

Preserve Littleton’s important land resources through land acquisition, improved management and education

Objectives:

- Conserve lands that support agricultural uses and contain important agricultural soils.
- Conserve land for historical and natural purposes including unique geological features and a variety of wildlife habitats.
- Enlist cooperation of local and regional conservation organizations as well as town boards and committees to improve management of existing properties
- Improve education and communication efforts about value of open space and specific properties
- Coordinate efforts with Community Preservation Committee
- Coordinate with the Littleton Conservation Trust to develop a management plan for invasive species.

Goal:

Provide improved recreational opportunities for Littleton residents of all ages and abilities

Objectives:

- Update facilities to meet Americans with Disabilities Act requirements.
- Explore special opportunities for recreational facilities
- Provide more passive recreational options
- Maintain and improve existing recreational facilities
- Work with Park and Recreation and similar groups towards broadening the scope of recreational opportunities for all ages.

Goal:

Promote the use of Littleton's open space by residents, through developing better access to protected properties and encouraging community participation in open space maintenance

Objectives:

- Promote active public use and stewardship of conservation lands through outreach and education of citizenry
- Publicize needs and opportunities for volunteer help with maintenance
- Ensure that open space is accessible to all citizens regardless of age or ability
- Implement strategies that will facilitate the permanent care of recreation and conservation areas.
- Develop forestry plans for harvesting and maintenance of wooded areas.

Goal:

Link Littleton's open space and trails both throughout the Town and on a regional level, particularly near shared natural resources.

Objectives:

- Work to link public and private open space and recreation areas to each other, as well as to population centers or neighborhoods
- Cooperate with neighboring towns to link adjacent open space and recreation areas.
- Create larger areas of contiguous open space in ecologically sensitive areas.
- Work with the LCT and contiguous towns to establish/expand trail systems and bike paths to connect the various areas in Littleton and within the region.

Goal:

Balance development with the preservation of open space to help retain Littleton's rural character

Objectives:

- Provide/educate landowners about alternatives to selling land to developers
- Modify bylaws to provide better protection of sections of town considered historic, agricultural and/or scenic, and to prevent environmental degradation
- Conserve agricultural lands that are "Gateways" to Littleton
- Permanently protect the Town Common
- Encourage mixed-use and/or higher density development in and around Littleton Common and Historic Depot areas
- Lessen environmental impact of development through stricter wetlands and erosion control by-laws and certification of vernal pools
- Establish a permanent committee to oversee all open lands and implement acquisition, conservation restrictions, and the careful monitoring of 61A & B lands

Goal:

Find funding resources outside of taxes for protecting open space or building recreation facilities

Objectives:

- Partner with local, regional and state agencies to acquire sources of open space, agricultural or recreation funding

- Develop/continue creative mechanisms within town resources to fund protection of open space
- Pursue state and federal grants
- Work with state and local officials to establish more funds for land purchases, protection and maintenance
- Work cooperatively with private conservation organizations to leverage philanthropic resources

Section 9: Five-Year Action Plan

9.0 Five-Year Action Plan (see Map 10)

This Action Plan builds on the “Goals and Objectives” (Section 8) by developing specific strategies to be completed by responsible parties. The actions listed below are essentially steps that need to be taken to accomplish the outlined objectives. As with Section 8, this Action Plan is designed based on information from 2003 and the collected information that is written in the 2009 plan.

The Five Year Action Plan is designed to implement Littleton's Open Space and Recreation Plan. The Action Plan directly addresses the recreation and conservation deficiencies identified in the analysis of community needs. The plan elements are based on information gathered from town wide surveys and the collective knowledge and experiences of the Open Space committee. Listed below are the top town priorities followed by action steps that can be undertaken within the next five years.

1. Protect and enhance water quality in Littleton

Actions:

- Educate residents on the importance of water quality (e.g. negative impacts of excessive lawn fertilizers and pesticides) (Littleton Water Department and the Clean Lakes Committee)
- Identify and acquire potential new well sites (Littleton Water Department)
- Identify and pursue grant funding options for lake restoration (Clean Lakes Committee)
- Establish volunteer “stream team” for monitoring water quality in Beaver Brook
- Protect all surface and sub-surface waters

2. Preserve Littleton's important land resources through land acquisition, improved management and education

Actions:

- Purchase open space of interest and farmland as it comes available (Conservation Commission, Littleton Conservation Trust, Littleton Selectmen)
- Work with landowners to put land under conservation restriction or agricultural restriction (Littleton Conservation Trust, Conservation Commission)
- Permanently protect town owned land not currently protected under Article 97 (Littleton Selectmen)
- Work with the Agricultural Committee to ensure the viability of existing farm operations
- Improve maintenance to existing open space properties (Littleton Conservation Trust, Conservation Commission, Littleton Highway Department, OSRPIC, Volunteers)
- Inventory, monitor and develop management plan for land-based and aquatic invasive species control or eradication (Littleton Conservation Trust, Conservation Commission, Littleton Highway Department, OSRPIC)
- Provide environmental education to residents through newspaper articles, walks, school programs and outreach events (Littleton Conservation Trust, Conservation Commission, OSRPIC)
- Continue and expand Land Stewardship Program (Littleton Conservation Trust, Conservation Commission, OSRPIC)

3. Provide improved recreational opportunities for Littleton residents of all ages and abilities

Actions:

- Make recreational facilities wheelchair-accessible (Town of Littleton, Parks and Recreation Commission)
- Provide benches and picnic tables at more locations (Town of Littleton)
- Find logical routes for bike paths/bikeways/walkways and work to develop them (Planning Board)
- Build a new track (Town of Littleton)
- Develop/support more programs for youth/teens (Parks and Recreation Commission)
- Develop/support more programs for seniors (Parks and Recreation Commission)
- Enlist community's aid in maintenance of facilities (Parks and Recreation Commission)
- Build more sidewalks for better access to facilities (Littleton Highway Department)

4. Promote the use of Littleton's open space by residents, through developing better access to protected properties and encouraging community participation in open space maintenance

Actions:

- Improve/expand parking areas near open space properties (Conservation Commission, Littleton Highway Department)
- Develop "Community Work Days" for maintenance of open space (Littleton Conservation Trust, Conservation Commission, OSRPIC)
- Work with students to fulfill their community service requirements through maintenance of open space (Littleton Highway Department, Conservation Commission)
- Make trash cans and doggy-litter bags available at more locations (Littleton Highway Department)

5. Link Littleton's open space and trails both throughout the Town and on a regional level, particularly near shared natural resources.

Actions:

- Work with local conservation commissions and land trusts from contiguous towns to identify parcels of open space which might be connected across town borders. (Conservation Commission, Littleton Conservation Trust)
- Acquire parcels of land in Littleton which are adjacent to existing open space in order to create a broader protected area (Littleton Conservation Trust, Land Protection Organizations)
- Map potential trail corridors and "greenways" (OS&RPIC, Littleton Conservation Trust, Parks and Recreation Commission)
- Expand trail system to connect multiple open space and recreational areas across town (Conservation Commission, Littleton Conservation Trust)

6. Balance development with the preservation of open space to help retain Littleton's rural character

Actions:

- Educate citizens about conservation and agricultural restrictions and easements (Conservation Commission, Littleton Conservation Trust)
- Work with landowners who are interested in CRs and APRs (Conservation Commission, Littleton Conservation Trust)
- Create a “smart growth” overlay district (Planning Board, Conservation Commission)
- Develop a “scenic roads” bylaw (Planning Board)
- Develop an Agricultural Incentive District (Planning Board)
- Develop a non-regulatory Historic District (Planning Board)
- Establish partnerships with developers to preserve valuable portions of land (Planning Board, Conservation Commission)
- Encourage “Leadership in Energy and Environmental Design” standards in all new residential, commercial, and industrial development projects (Planning Board)
- Certify vernal pools (Conservation Commission and volunteers)

7. Find funding resources outside of taxes for protecting open space or building recreation facilities

Actions:

- Increase funds to CPA account (Town of Littleton)
- Increase funds to cell tower accounts (Town of Littleton)
- Consider other sources of town income which might be dedicated to preservation of open space or building new recreation facilities (Town of Littleton)
- Partner with Sudbury Valley Trustees to protect land of mutual interest (Town of Littleton)
- Apply for L.A.N.D. grants as parcels of land become available (Town of Littleton)
- Apply for Recreational Trails grants (Town of Littleton)
- Establish partnerships with Businesses and Corporations in Town to carry out projects that will improve “quality of life” in Littleton and help attract clients and personnel (Town of Littleton)
- Apply for Farm Viability Program funds through Massachusetts Department of Agricultural Resources (Town of Littleton)

Section 10: Public Comments

10.0 Public Comments

Letters of endorsement follow from the:

Littleton Board of Selectmen
Littleton Conservation Commission
Littleton Planning Board
Littleton Park and Recreation Committee
Littleton Conservation Trust

Section 11: References

11.0 References

Department of Housing and Community Development Community Profiles;

Executive Office of Energy & Environmental Affairs Buildout Analysis;

Executive Office of Energy & Environmental Affairs “The State of Our Environment Report,” April 2000;

Federal Emergency Management Agency. Flood Insurance Rate Map (FIRM) for Littleton, Massachusetts, June 15, 1983;

Lemire, Robert, *Creative Land Development*;

Littleton Conservation Trust

Littleton Highway Department

Littleton Open Space and Recreation Plan, 2003

Littleton Water and Light Department;

Massachusetts Department of Conservation and Recreation *Landscape Inventory*;

Massachusetts Department of Environmental Protection;

Massachusetts Department of Revenue, Division of Local Services;

Massachusetts Division of Employment and Training;

MassGIS;

Massachusetts Institute for Social and Economic Research (MISER);

MetroFuture

Natural Heritage and Endangered Species Program - Division of Fisheries and Wildlife;

Official Dedication Booklet of the 250th Anniversary of the Town of Littleton, 1965;

Statewide Comprehensive Outdoor Recreation Plan;

Sykes, John Thomas, *A History of Littleton*, 1953; and

United States Bureau of the Census

Section 12: Maps

Appendix A: Public Survey Summary

Appendix B: Meeting Notes

Notes from Open Space & Recreation Public Form

March 25, 2009, 7:00 PM

Attendees:

Dave Outman (Committee member)
Vera Cohen (Committee member)
Kimberly Harriman (Committee member)
Don MacIver (Littleton Conservation Trust)
Ann Himmelberger
Alex McCurdy (Town Selectman)
Rick Findlay (Littleton Conservation Trust)
Cindy Heitmeyer (Littleton Track Organization)

KH: introduced Committee, reason for the Plan update, history, application for the grant for the Yapp land

DO: demonstrated on maps:

Town boundary
Infrastructure
Open Space
Explained chapter land

AM: stretch along 2A – status of land is “perilous at best”

Work committee is doing is excellent

Need to do is integrate planning efforts – BOS, CC, LCT, Ag. Commission

To move forward – economic development – economic development without open space is not economic development

Management

Can't look at adding business without looking at green space

Communication

Tenacity

Prime example – spread of the Common – all the way up 2A – in terrible jeopardy

Gateway land to Littleton – Couper Farm, Pickard, Fletcher – not all owners see value in agriculture

300+ acres in Westford is commercial

BOS is looking and trying to see what community wants instead of hodgepodge from Cisco to Farms Development

AM is trying to focus on protecting gateway – preservation of Open Space, Agriculture

If Acton and Littleton get together, where are we?

Yapp Land is also very important

Master Plan steers in this direction, but we need reminders

All parties need to integrate

Recreation, business – all needs to work together

We have lots of little plans, lots of goals, but no big plan

Proactive vision and planning – longer to get someplace but we're in better shape when we get there

No better example than Acton Toyota – plan is being driven by developers – driven by economics

We're in a great position – leveraged state money, planners, hearing message loud and clear, ED net positive rather than if you build a sewer they'll come – key to failure and it failed

RF: talking to Savas – points from state for town – we got none for water protection – sewage management – if we'd gone through the process of the plan to see what would have happened to get sewer (300,000) would have gotten that point

AM: preserving vernal pools

For years everyone was in different places

Recreation too – we need a plan because when something is broken, it doesn't get fixed

DO: open space not in a bubble – conservation & recreation can help attract business too, could be a selling point

AM: Plan makes town eligible for grants, very important – but anything we can do need to empower the committee to do things – put the committee together but don't empower them – that's his job – BOS – let everybody have a place in the planning of the committee – no elected board or couple of boards

KH: how do you rank farmland?

AM: rate farmland very highly – only trumped by Yapp land b/c of opportunity –

Fletcher #1, 119 (Gary's, Springdale, Spring Brook) #2

Feature of Littleton – and important because it used to be a feature of Acton

DM: Acton has worked very hard at working along Route 2 – corn fields

AM: if you popped off the rotary at 2A – certain impression in Acton, there needs to be a break in that impression for Littleton – “here's a town that's in touch with its history, its culture, its roots” – it's now or never

RF: wooded parts that are/will be vulnerable – would like to see bike trail from train station to Long Lake – in between Rte. 2 and Foster St.

DM: Joyce ? wants to preserve her land – needs some money but isn't going for fair market value, SVT trustees has land, off of Boxborough Rd. there are some riding trails, some logging happens there – protecting that area is of great concern

RF: Fish & Wildlife only wants to add to what they have – will they preserve on both sides of the highway – opportunity there

DM: Sanderson land – high priority (Art & Bill Brown working on) – other side of Whitcomb Road from Oak Hill

AM: Sanderson fields – open space/recreation combination

DM: transportation infrastructure – better to have satellite parking area than second village area – where would traffic go?

AM: tree farm is under threat too (the one near the train station)

If we're successful at integrating our planning, train station – how it impacts open space?

Development – we can ask them to do things for us – planning business and train station

Same for recreation needs – address possibly through development

Track – if we decrease by a playing field, we need another playing field

DM: infrastructure impacts open space – quarry site too – will hit end of life soon, what happens then? Transfer of development rights – allow people to develop one place more intensely and give money to protect other – best is in Groton – money goes into a fund (like cell tower money)

AM: other methods of recurring revenue solely for protection – another cell tower will come to town

RF: Henry Harvey walked it – negotiating with homeowners and then go to Fish and Wildlife – beautiful greenbelt going through there – work with SVT too

DO: land that is in Northwest – unprotected – what about that?

DM: Peter Woll, Jim Pickard – behind Oak Hill

CH: part of Littleton Track Organization – hopefully having feasibility study done, have two locations possible – LHS and Russell St. - people want to know if there are other places that could be considered – wants to know is there any place else they could consider – if we do look at current place, displacing fields – people feel there is not enough of baseball and soccer fields, recreation point of view – real need for additional fields (need five acres)

RF: was at NARA in Acton – was a quarry – Littleton's quarry could be a recreational area someday

DM: at some point there are some lovely areas

VC: there was a place that was a horseracing track –

RF: field on Russell St. on other side of Hartwell

DM: Grey Farm area – backs up to – owned industrially (Sandvell Land)

AM: beside Precast Building – Distribution Drive

RF: homeowner that has land that goes back all the way to that property – could maybe negotiate a way to get there

DO: any part of IBM or Cisco

AM: worth a discussion – tricky spot – Cisco – several different zoning overlays – planners working on it

DM: Cisco land was fairly restricted b/c of wetlands

AM: tract of land directly across 2A from quarry - cornfield – problem is still proximity to quarry

RF: Morgan Land is too wet

DM: if can't get APR, should become conservation land – should be protected, also 30-acre Morrison property – should be protected

CH: proposing feasibility study to see what issues are at each site – they want the best site and will see what the feasibility study says – tracks can vary a bit but 3.7 acres is the minimum

DM: behind IBM?

RF: where LWD – near Train Depot

AM: problem is aquifer and parking

DO: could do permeable surfaces for parking

DM: maybe VeryFine – Sunny Delight

AM: probably a facility that's precarious at this point

DO: truck space on south side – next to gas station

RF: would be a great area for smart development if it goes under – train station

AM: a lot of wetlands around there

DO: bike lanes

DM: bike path – on 119, Bruce Freeman Trail – 119 to Groton and there's another one that's coming to the other side of Groton – work with Nicki Tsongas to get agriculture

protection on 119 – one of first numbered roads – goes to 119 in New Ipswich, NH and 119 in VT – cultural or agricultural or historical designation
Area bicycle maps more formalized

AH: Freedom's Way is working with Littleton for a weekend in October – developing walking routes with designations of older houses on Foster St., King St. to Common, also will do bike routes with similar landmarks – last year they did Ayer

DM: running area – used to be maps when it was digital; grants for recreation, outdoor protection – lakeside connectivity from Prouty Woods to Town Beach, acquire parcels on Long Lake

RF: connect Prouty Woods to Long Lake

CH: in general, bike paths, more playing fields, things kids can use

RF: trying to connect high school to middle school with a trail through Charlotte Hartwell property, cemetery

DO: on usability theme – any way to make some of the open space a little more active – like Cold Spring Park in Newton – stations – exercise – good for kids

DM/AM: not many people use them

AM: more handicapped accessible trails

KH: preliminary survey results – senior citizens want more that is accessible for them, also benches – places to sit (group here in agreement)

DO: Forge Pond – has kayaked from Forge Pond down Beaver Brook – any trails along it? Amenity?

RF: pretty well developed along Forge Pond – open space is Matheson's Farm, one end is bog

DM: thinking of agriculture & promoting – management, financial – help promote – some places like town orchard – have increased development & diversity – what happens when current person who leases town orchard can no longer? Concern...
Last night at lecture with Michael Pollan at Tufts – School of Nutrition – New Entry Farming – Foodsheds – as part of planning process – what areas develop food and grow local food and feed an area (like watershed) – Edge City – on edge of major roads – distribution to other areas – different lens of looking at farms – where is it going to go

RF: very important – three articles in NYT

DM: business section of NYT

DO: recreational opportunity too – learn how to plan it, get hands dirty, put smaller garden at their houses

AH: farm in Anatick like CSA, Springdell is starting CSA. Doug Peterson: farming is economically viable

DO: good last point – let's end – 9:00 PM

Appendix D: Section 504: Handicapped Accessibility Self-Evaluation