

# **Open Space and Recreation Plan Hatfield, Massachusetts**

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Prepared by  
Hatfield Open Space Committee  
with assistance from  
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## **SECTION 1: PLAN SUMMARY**

As its name implies, this plan focuses on the protection of natural resources, access to recreational areas, and the long-term management of both. Although it addresses many of the same issues as did the 2003 Open Space and Recreation Plan, it does so in the light of evolving and changing community needs and circumstances. It thus seeks less to replace, than to build on the findings of its predecessor. The plan itself moves from an inventory of recreational and open space resources, to a description of community preferences in relation to them, and, finally, to an action plan for accommodating such preferences revealed in the committee's fact-finding.

Perhaps not surprisingly, the overall objectives that support the broader goals of providing recreational opportunities, and protecting the valuable natural resources and open space that are currently abundant within Hatfield, have been consistently repeated during this on-going process that began more than a decade ago. These goals, stated in Section 8 are:

- Preserve Community Character;
- Protect Farmland;
- Protect Wetlands and Floodplains;
- Protect the Water Supply;
- Protect Woodlands; and,
- Provide Adequate Recreation Spaces.

## **SECTION 2: INTRODUCTION**

### **A. Statement of Purpose**

Previous Open Space and Recreation Plans for the Town of Hatfield were completed in 1989 and 2003 and approved by the Massachusetts Division of Conservation Services, Executive Office of Environmental Affairs (EOEA). This current document constitutes an update to the 2003 Plan. It inventories open space and recreational resources, identifies the community needs for open space and recreation, and recommends possible ways to satisfy such needs in the form of a Five-Year Action Plan provided in Section 9.

Since the adoption of the 2003 Plan, the Town has undertaken the accomplishment of an impressive list of the actions identified in the plan particularly in the area of adopting local zoning tools to encourage smart growth and proper planning at the community and individual site levels. Strong local regulations serve as the backbone for open space protection, creating standards for development so that the needs of the unspoken are not forgotten.

### **B. Planning Process and Public Participation**

All of the Open Space Committee meetings were held at Town Hall and open to the public. The committee met nine times between October 2007 and June 2008. A community visioning session was held on November 15, 2007 at Hatfield Town Hall. Notice of the meeting was posted in a press release to the local newspapers, posted at town hall, and emailed to the board chairs and department heads for all boards, departments and committees within Hatfield. Although not well attended, the session was extremely useful in identifying the qualities and characteristics that people love about Hatfield and conflicts and issues that exist with some of them. Many who were not able to attend the session submitted their thoughts by email to the committee. Additionally, the posting invited any interested to attend any of the upcoming Open Space Committee meetings to participate in the process.

A second community session was held on May 27, 2008 after the final draft of the updated plan had been available to the public for a 30-day public comment period. The plan was made available at Town Hall and the Hatfield Library and on the website for the Pioneer Valley Planning Commission. A press release regarding the comment period was issued and noted in the Hampshire Gazette, a local newspaper. Notice of the comment period was also mailed to each department, board or committee head. After the community session, Scott Jackson from the University of Massachusetts at Amherst gave a presentation about the Hatfield Dam Removal Feasibility Study performed for the Advocate Dam on the Mill River.

## **SECTION 3: COMMUNITY SETTING**

### **A. Regional Context**

#### ***Geographic Location***

Covering about 16 square miles, the Town of Hatfield is located in Hampshire County in the Commonwealth of Massachusetts, at approximately 42 degrees W latitude and 72 degrees N longitude. Hatfield is surrounded by the towns of Hadley to the east, Northampton to the south, Williamsburg to the west and Whately to the north. Major roadways through the Town are Interstate 91 and Routes 5 & 10. Other major roadways adjacent to the town and having an impact on it are Routes 9 and 116.

#### ***Hydrology***

The limits of the 100-year flood plain are primarily located within the eastern and northern portions of Hatfield along the Connecticut and Mill Rivers, coincident with the majority of Hatfield wetlands. However, some 100-year flood plain also exists along Running Gutter Brook in West Hatfield.

The entire landmass of the Town of Hatfield is situated in the Connecticut River watershed. All naturally draining surface water eventually finds its way to the Connecticut River, which forms about 7.5 miles of the town's eastern and southeastern boundaries. Most of the Town's drainage stays within Hatfield proper before emptying into the Connecticut River, but two minor watersheds in West Hatfield drain first into Northampton. The three major watersheds that drain the approximate 10,000 acres of land in the Town include drainage from neighboring Northampton, Whately and Conway. These watersheds are described fully in Section 4C.

#### ***Development Overview***

Development is limited within both the 100-year flood plain and wetlands as defined under the Massachusetts Wetlands Protection Act and the Town of Hatfield Wetland Bylaw. With diligent application of the appropriate State laws and local bylaws, these areas can remain undeveloped. However, both floodplain and wetland development is potentially permissible under the law provided that certain conditions are met. As a result, protection of these lands as open space is not guaranteed. Nevertheless, both wetlands and floodplain development has been limited in Hatfield and these areas largely remain open space.

Hatfield's location adjacent to the college towns of Northampton and Amherst, as well as its access to Interstate 91, have contributed to its development as a "bedroom community" both for these larger towns and the cities of Springfield, Greenfield, and others along the I-91 corridor. As of 2000, 15.3 percent of residents worked in Hatfield.

Despite Hatfield's location in the well-populated Pioneer Valley, but perhaps due to its paucity of recreational open space, there is no widespread perception that the town is a recreational destination within the Valley, or even amongst Hatfield residents. However, local and area recreational cyclists throughout the week as well as on weekends use its flat, low-trafficked roadways during the spring, summer and fall months. In addition, boaters use the Hatfield boat ramp to access the Connecticut River and increasing ATV use on unpaved town roads and private lands has been noted in West Hatfield on Horse

Mountain. "Bashin Beach", located at the end of Bashin Road on the Connecticut River, also draws a small number of residents and regional people during summer months. Bashin Beach is owned by the Massachusetts Department of Recreation and Conservation and is part of the Connecticut River Greenway State Park.

## **B. History of the Community**

### ***An Old Town with an Important Heritage***

Hatfield was "first a frontier village, then a prominent colonial community which has been the home of educators and benefactors. It has long been known for the beauty of wide streets, sitting between hills and the river valley, the fertile fields, industry and prosperity." So wrote Colonel James Day, in the introduction to *Hatfield, Massachusetts 1670-1970*. A drive through Hatfield today shows the elegant homes mixed with the sturdy, functional New England farmhouses, newer homes, and tobacco barns.

Hatfield, or "Hattfield's," as it first was named by its settlers native to England, began its modern history in 1660, when the deed to the land was signed by Umpanchalla, a Nonotuck Indian chief and turned over to Hadley, Massachusetts. In 1670, Hatfield incorporated as its own Town. Its earliest European settlers were English puritan farmers. The major ethnic groups to migrate to the Town since are the Irish, Germans, French Canadians and Poles, the last being the largest nationality represented today.

With some of the richest land in Massachusetts, Hatfield has been the site of much agricultural as well as industrial activity. Its gristmill for grinding corn was the first in the region (1661); the mill became a sawmill at a later date. Its tall pines produced tar and turpentine (1600's). Flax produced linseed oil (1735). Broomcorn was grown and the broom building business flourished (1826-1860). Here, too, were located the putative first distillery in the state, which became a husk factory to make cornhusk mattresses, and the first creamery system in western Massachusetts. The Town became the state's center for growing tobacco, a crop introduced by the area's Indians. Current crops include tobacco, onions, cucumbers, potatoes, corn, asparagus, strawberries, pumpkins, winter squash, tomatoes, blueberries, beets, lettuce, eggplants, cabbage, string beans, gourds, herbs, and peppers. Cattle, horses and sheep have grazed in the fields. One of the old sawmills was turned into a button factory. Pistols and shotguns were manufactured, engine lathes and automatic knife blade polishers were introduced, and violins, guitars and banjos were tuned here.

Hatfield's early social and political history was marked by warfare between Europeans and Indians, including the King Phillips War (1670's) and the King Williams War (1690's). The Town's oldest burial stone, found in its first burial ground, "The Hill," dates back to this era (May 3, 1687). In the 18th century, 127 men out of a Town population of 600 served in the American Revolution. A three-day convention to prepare for Shay's Rebellion was held in the Town's meeting house (1786). In the 19th century, the Town was a concealment station for runaway slaves en route to the Underground Railroad to the North.

Like all towns, Hatfield has developed through the efforts of all who labored in it. A few names, however, stand out in its recorded history: Israel Williams, the Town's first citizen and a selectman for 31 years; Partridge I. Williams, a Tory leader; Caleb Cooley Dickinson, a prosperous Hatfield farmer, who funded in 1886 the beginnings of our area's largest public hospital; Colonel Oliver Partridge, active in state government and the State's delegate to the Stamp Act Congress; Colonel Ephraim Williams, whose will provided for the establishment of Williams College in Williamstown, Massachusetts (1755); Samuel Partridge; Oliver Smith, whose will provided funds for the establishment of an agricultural school in Northampton—now Smith Vocational High School—and for Smith Charities, a trust fund used to benefit "indigent boys, girls, young women and widows." Sophia Smith is the best-known woman in Hatfield's history. She provided the funds for the beginnings of Smith Academy (now the Town's public junior and senior high school) and Smith College in Northampton.

### *Hatfield Today*

Hatfield has several distinctive areas reflecting the Town's history, agricultural trends, localized development types and the underlying zoning. The entrance to Hatfield via the I-91 interchange at Exit 21 on Route 5 shows moderate density commercial and industrial development, and that quickly diminishes with distance from this corridor, and which itself splits the Town into its eastern and western sections. Towards, the east, the land becomes a mosaic of residential areas broken by agricultural expanses and wooded floodplains, dotted with occasional small commercial enterprises. To the west, the wooded slopes of the "Rocks" area and Horse Mountain have frontage development with single- and multi-family residential lots. Approaching the Main Street area are 18th and 19th century farmhouses, early 20th century clapboard homes and 1950's ranches. Behind the buildings are the agricultural fields, dotted with old, dark tobacco barns. Beyond the fields on the right are the dike, some woods and the river. Crisscrossing the floodplain fields and connecting Main Street to the dike are long dirt roads

Entering Hatfield Town limits from the north along River Road (which becomes Main Street), reveals a more rural character, with a long flat street edged with maples, houses, and farm-stands selling berries, onions, pumpkins, asparagus, Indian corn and the ubiquitous potato. Behind them are the fine, broad fields; across the river, the state university skyscrapers loom up from the plain. The road continues past tobacco sheds in brooding groups of twos and threes, and then it becomes the main street of Hatfield's "town center." Here there are some new homes, a housing complex for the elderly, a convenience store, an elementary school, a brick Town Hall, a local library, great turreted Victorians, plain colonials, classic New England capes, a few Federal style houses, and spired churches. Behind and between them, once again, are the barns, croplands, horse paddocks, and, in the exact center of Town, playing fields, a few graveyards, and great expanses of lawn and gardens.

On the west side of Route 5-10, the landscape changes as abruptly as the altitude. You can drive up towards Horse Mountain along Linseed, Old Stage, and Mountain Roads, past a few old houses and many more new ones. Although the roads' surface turns to dirt, the carving out of frontage lots for new homes is abundantly evident. Nonetheless, the

landscape here is still dominated by forest, a substantial proportion of which is actively worked. And here, too, Town-owned woodlands around the reservoir provide permanent protection for this vital water source while contributing to open space and providing habitat for wildlife.

Despite a rural veneer, Hatfield has changed a great deal in the past fifty years from the way it had been for generations. A confluence of factors now has brought the Town to the edge of a critical transformation. These factors include: the economic trends in Massachusetts and the country as a whole; the nationwide dissolution of the family farm; the pressures placed on prime agricultural and forest land by building development; and the changing sensibilities of a population that works increasingly not in primary or secondary industry, but in the service and information sector of the economy. The erosion of Hatfield's farmland and forests by strip developments, highways and subdivisions would be an especially grave loss for river valley land that is as naturally rich and as perfectly made for farming as any land could possibly be. Hatfield also provides stunning architectural qualities from the 18th and 19th centuries.

## C. Population Characteristics

### *Demographics*

Hatfield's geographic location between the Connecticut River and an interstate highway, its abundance of wetlands and floodplains, and the Town's relatively old-fashioned infrastructure have worked together to insulate the Town from some of the more overwhelming development pressures other Pioneer Valley communities have been facing in the last ten years. At the same time, the Town's rich soil and healthy agricultural industry, combined with easy commute distances to many major regional employers, including the University of Massachusetts, have left Hatfield with functioning farmland and a relatively well-educated and well-employed population.

In the last 17-year period for which data is available, Hatfield's population base has been relatively stable, increasing by 7.6 percent from 1990 to 2007 (3,184 to 3,428). At the same time, the median age of the population increased from 38 to 45.4, a 19.5 percent increase. Compared with the region and the state, Hatfield is almost exactly in the middle of the average change in population and median age among similar area communities.

<b>Table 1. Population Changes 1990-2007</b>		
<b>Year</b>	<b>Total Population</b>	<b>Median Age</b>
<b>1990</b>	3,184	38
<b>2000</b>	3,249	43.2
<b>2007</b>	3,428 <sup>1</sup>	45.4 <sup>2</sup>
<b>% Change</b>	7.1%	16.2%

<sup>1</sup> Annual Hatfield Census

<sup>2</sup> Estimate from DemographicsNow – see methodology at

<http://www.demographicsnow.com/AllocateOnline.srct?ShowPage=static/methodology.htm>



While the overall population of Hatfield has remained relatively stable, its population is aging. The percent of the population under age 19 has remained stable at about 23 percent between 1990 and 2007<sup>3</sup>. The population over age 65 increased from 12.5 percent in 1980 to 16 percent in 1990 to 23 percent in 2007<sup>4</sup>. This trend will have an effect on Hatfield's economic character as older adults have different needs and make different contributions to their community than do younger people.

Since the Pioneer Valley region is experiencing growth in residential development it should be anticipated that there would be subsequent growth in the Town of Hatfield. The assessor's offices of the region's 43 communities report that from FY 1993 to FY 2007 the number of single family residences grew from 125,492 to 138,280, a 10.2 percent increase, or an annual growth rate of 0.73 percent. The rate of increase in Hatfield has been slightly higher than for the region as a whole - an increase of 104 parcels from 1993 to 2007, or 10.5 percent for an annual growth rate of about 0.75 percent<sup>5</sup>.

<b>Table 2. Number of Single Family Residence Parcels in Hatfield</b>								
<b>Analysis Years</b>					<b>1993-2000</b>		<b>1993-2007</b>	
1993	1998	2000	2007	# of new parcels	% Growth	Annual rate	% Growth	Annual rate
891	928	980	995	104	10%	1.4 %	10.5%	0.75%

As has been noted, despite a somewhat larger than average residential growth rate, the Town of Hatfield has been fortunate in that it has not yet experienced a major crush of new residential development. Regional growth trends, however, suggest such a push is likely to happen soon.

### ***Economic Character and Employment Trends***

Hatfield is not a self-contained economic unit. As of the 2000 Census, 15.3 percent of residents work in Town, but the majority does not. Conversely, many people from out of town work in Hatfield. From 1980 to 1990, Hatfield's population remained stable (3 percent increase) and income increased dramatically (per capita income by 156 percent and household by 128 percent). From 1990 to 2000, Hatfield's population grew slightly slower at a 2 percent increase with a much smaller increase in income (per capita income by 41 percent and median household income by 29.7 percent<sup>6</sup>). Estimate projections for 2007 show incomes between 2000 to 2007 continuing to trend upward but at a slightly slower pace (per capita income by 24.3 percent and median household income by 19.4 percent).

<sup>3</sup> 1990 and 2000 U.S. Census; 2007 Annual Town Census, town of Hatfield

<sup>4</sup> Town of Hatfield, 2007 Annual Town Census

<sup>5</sup> Massachusetts Department of Revenue, Division of Local Services – At A Glance Report for Hatfield, MA

<sup>6</sup> DemographicsNow, 2007 based on 1980, 1990 and 2000 U.S. Census data

Hatfield residents seem to be relatively well off financially compared with residents in our comparison communities/groups (Hadley, Northampton, Southwick, Hampshire County, and the state average). Per capita income in Hatfield increased a full 30 percent more than it did for other communities in Hampshire County—or for the county as a whole. Preliminary conclusions from median household income data may mask a skewed distribution of income or the fact that households now have two wage earners instead of one. Still, the overall economic and employment picture for Hatfield residents is positive. The median household income in Hatfield went from \$38,864 in 1990 to \$50,238 in 2000 or an \$11,374 increase, up 29.27% over this 10-year period. The median household income for Hatfield moved from the 11<sup>th</sup> position in 1990 to the 12<sup>th</sup> position in 2000 among the 25 Hampshire and southern Franklin communities reported on. Projections for 2007 show another \$9,786 increase in median household income between 2000 and 2007.

Not surprisingly, declining unemployment rates coincided with the increase in median household income. The unemployment rate in Hatfield peaked at 7.93 percent in 1992, declined to 3 percent in 1998 and in 2007 was at 4.5 percent<sup>7</sup>. Hatfield's rate compares favorably with the regional and statewide unemployment rates, which were each hovering around 3 percent in the 1990s and above 4 percent in the 2000s.

Key economic trends in Hatfield include:

- Hatfield's local economy is healthy, with per capita income increasing dramatically over the past two decades, decreasing unemployment rates, and a stable tax rate.
- Hatfield has substantial undeveloped land zoned for commercial or industrial use, although development of some of this land is subject to environmental constraints.
- Businesses perceive Hatfield as a “business-friendly” community.

Both property values and household incomes have increased in Hatfield. The average assessed home value in Hatfield went from \$146,800 in 1990 to 148,166 in 2000, or a .9 percent increase over those 10 years. The average assessed home value in 2007 was \$286,660, a 93 percent increase from 2000.

### ***Business and Industry***

Hatfield has business districts scattered throughout all areas of the Town. The business districts of Hatfield include the following:

- **South Hatfield—Route 5:**

This district is adjacent to the Northampton-Hatfield town line, and is the Town's largest concentration of commercial uses, with some industrial uses mixed in. The district includes retail uses such as Rugg Lumber, Danish Inspirations, and Long View RV Superstores as well as a few industrial uses.

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<sup>7</sup> Massachusetts Department of Revenue, Division of Local Services – At A Glance Report for Hatfield, MA

- **Central Hatfield - Route 5:**

This district is located in the middle of the Route 5 corridor, with commercial and multi-family residential uses including FedEx, Diamond RV Center, and Penske Truck Rental.

- **North Hatfield—Route 5:**

A small commercial center exists along Route 5 in North Hatfield, including several retail outlets and a construction company.

- **Town Center:**

Hatfield's historic Town center includes modest commercial uses combined with civic and residential uses. Across from Town Hall, the Town's retail center is very small, consisting mainly of a convenience store. There is also a modest commercial area at Prospect and School Streets, which includes the Hatfield Market.

- **East I-91 Industrial Corridor:**

Virtually the entire east side of Interstate 91 in Hatfield has been zoned for industrial use. This area is home to Hatfield's largest employers, including C&S Wholesale Grocers and Brockway-Smith, and smaller firms such as Lesco and Lynx Window and Door.

- **Other Commercial Areas:**

Isolated businesses are scattered in many other locations throughout the Town.

Hatfield has a number of large employers, including C&S Wholesale Grocers with about 1,000 employees, Verizon with 130 employees, Brockway-Smith with 110 employees, and Hatfield Equipment and Hatfield Public Schools, both with 50-100 employees.

## **D. Growth and Development Patterns**

### ***Patterns and Trends***

The Town of Hatfield has historically maintained its identity as a small and scenic agricultural community. People who live in Hatfield talk about the community's "rural character." This description refers to four primary aspects of the Hatfield community: agriculture, natural resource protection, open space and recreation, and historic preservation.

William MacConnell and the University of Massachusetts first documented Land use patterns in Massachusetts through aerial photography in the 1950s. In 1971, 1985, and 1997 aerial photographs of land use in Hatfield were taken again and mapped according to what was photographed. Table 3 identifies the most recent picture of land use distributions based on the MacConnell maps, as they are called. Table 3 also shows the change in land use from the 1971 data. Some of the most noticeable changes during this period have been increases in residential development and industrial development, highlighted by frontage lot development and small subdivision development along existing Town Roads and the development of major industrial facilities in North Hatfield

and smaller light industry elsewhere in Town. The tabular data show a large percent (but small real) increase in mining activity (gravel pits). The “loss” of urban open land and “gain” in other open land reflects a change in the methodology of categorizing land use types, and not a real change in use. The land use data on wetlands significantly under estimates the actual extent of wetlands within the Town, which is closer to 30% based on mapping performed by Paul Davis of the Conservation Commission.

**Table 3. Land Uses in Hatfield 1971 – 1997**

Land Use	Acres 1971	Use as % of Total	Acres 1985	Use as % of Total	Acres 1997	Use as % of Total	% Change '71 - '85	% Change '85-'97
Crop Land	3,754	34.9%	3,717	35%	3,478	32%	-1%	-6%
Pasture	73	0.7%	84	.8%	82	.8	16%	-3%
Forest	5,043	46.8%	4,868	45%	4,795	45%	-3%	-2%
Wetland	141	1.3%	141	1.3%	141	1.3%	0%	0%
Mining	15	0.1%	15	.1%	21	.2%	0%	39%
Open Land	149	1.4%	118	1%	139	1%	-21%	18%
Recreation	35	0.3%	30	.3%	30	.3%	-15%	0%
Multi Family Residential	-	0.0%	2	.1%	2	0%	NA	0%
High Den Residential	2	0.02%	5	.1%	7	.1%	121%	30%
Medium Den Residential	360	3.3%	396	4%	411	4%	10%	4%
Low Den Residential	385	3.6%	544	5%	711	7%	41%	31%
Commercial	35	0.3%	49	.5%	71	1%	42%	43%
Industrial	59	0.5%	75	.7%	115	1%	28%	52%
Urban Open	45	0.4%	64	.6%	53	.5%	41%	-17%
Transportation	166	1.5%	170	2%	156	1%	2%	-8%
Waste Disposal	3	0.03%	8	0%	8	.1%	171%	0%
Water	479	4.5%	479	4%	479	4%	0%	0%
Orchard/Nursery	20	0.2%	-	0%	67	.6%	-100%	NA
<b>Total Land</b>	<b>10,766</b>		<b>10,766</b>		<b>10,766</b>			

Source: MacConnell Land Use Survey and Massachusetts Geographic Information System (GIS).

### ***Commercial/Industrial Growth***

In Hatfield, 279 acres of land are zoned for business (commercial and industrial) use and, as of 1997; 71 acres of land (25 percent) were developed for commercial use. The 71 acres of developed commercial land is up from 34 acres in 1971, an increase of 103 percent in 26 years.

Furthermore, 1,047 acres are zoned for industrial use in Hatfield, including 764 in the industrial zone and 283 in the Industrial A Zone. As of 1997, 115 acres (11 percent) were

developed for industrial use. The 115 acres of developed industrial land is up from 58 acres in 1971, an increase of 94 percent in 26 years.

The business district in Hatfield is divided into 29 separate land parcels or freestanding groups of parcels, which are scattered throughout the Town. The industrial districts comprise 19 distinct parcels or groups of parcels, also scattered throughout Town. Table 4 shows the Business and Industrial zoned acreage in Hatfield as identified in the Town's Master Plan dated January 2001.

**Table 4. Current Business and Industrial Zoned Acreage in Hatfield**

<b>TYPE</b>	<b>ACRES ZONED</b>	<b>Acres Developed 1971</b>	<b>Acres Developed 1985</b>	<b>Acres Developed 1997</b>
Business	287	34	49	71
Industrial	1047	58	75	115
Total	1334	92	124	186

Although Hatfield has significant acreage of industrial and commercial zoned land, large amounts of this land either are already developed or are constrained from future development due to floodplains, wetlands, river protection lands, and other environmental constraints. Some of the land zoned for commercial and industrial uses is protected from development by the Rivers Protection Act 310 CMR 10.58 that restricts development of land within 200 feet of a river (25 feet in urban areas). While this legislative protection is likely to exist into the future, other environmental constraints may not. For example, in today's real estate market in western Massachusetts, it is not cost effective to develop land that exceeds a certain slope. In other parts of the country where land is scarce and growth pressures are much greater than they are here, developers routinely build on steep slopes. Given existing constraints in western Massachusetts, of the 287 acres of commercial zoned land, 35 acres are unconstrained for future development. Of the 1,047 acres of industrial zoned land, 189 acres are unconstrained for future development<sup>8</sup>.

### **Infrastructure**

Two big issues face the Town of Hatfield with respect to infrastructure and public facilities: (1) the age of existing infrastructure, and (2) the effect of new infrastructure development. Originally, the Town was able to get by with allocating only minimal funds to maintain existing infrastructure and public facilities when the infrastructure was all relatively new. Now that the infrastructure is aging, it will no longer be cost effective to defer maintenance. The Town must address the relationship between provision of public facilities and infrastructure, and growth and development. As was noted in the Economic Character section of this plan, the Town has accidentally avoided many of the growth pressures facing towns in the Pioneer Valley by having a relatively outdated infrastructure that has made Hatfield less attractive than surrounding communities to new development. The first issue suggests the need for large-scale upgrading of Hatfield's

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<sup>8</sup> Hatfield Master Plan, 2001

infrastructure to save the Town money in the long run. However, such an upgrade of the Town's infrastructure, especially upgrades to the sewers and roads, could lead to a significant influx of new development.

**a. Transportation Systems.** The Pioneer Valley Planning Commission conducted a pavement management study for Hatfield in 1997 and again in November of 2002<sup>9</sup>. The studies assessed the Town's pavement maintenance needs and determined schedules and cost-effective solutions to improve the conditions of roadways. Pavement management information also assists in allocating resources to maintain eligible roads. In 2002, there were 12.22 miles of Federal-Aid roadways including Elm Street and King Street. Of these roads, the survey found that 20 percent of the roadways are in good to excellent condition, 26 percent are in fair condition and 54 percent are in poor condition.

The interests of residential and industrial property owners are in conflict along North Hatfield Street. Industrial users that depend on truck traffic and access to I-91 create traffic noise and congestion. This problem has been going on for five or more years without resolution. Access to the industrial park is part of the problem. Employees use North Hatfield Street, while trucks use Plains Road. C & S originally established these separate entry points to keep automobiles away from the 18-wheeler trucks. Plains Road may not be wide enough to handle two-way traffic of varying types of vehicles.

**b. Water Supply Systems.** Hatfield's public water supply comes from three sources: the Town reservoir (capacity of 500,000 gallons per day); the West Hatfield Well (capacity of 350,000 gallons per day); and the Omasta Well (capacity of 150,000 gallons per day). The Town relies on the reservoir as the primary source of water (74%) and the two wells as a secondary or back up supply (26%).

The water treatment plant came on line in 1997. It is located at the reservoir on Reservoir Road in West Hatfield. Although the capacity of the reservoir is 1.5 million gallons, the actual safe yield rate is 500,000 gallons per day.

*Usage* – As of 2007, water usage was 322,816 gallons per day, or 117,828,000 gallons per year serving 1,302 service connections. As in most communities, demand for water is highest during the warmest eight to ten weeks of summer. During this high use period, demand can reach a level of one million gallons per day, placing a severe strain on the system, particularly after summer storms render the waters of the reservoir cloudy with particulates from storm water runoff. Currently, approximately 95 percent of the community is served by the public water system. In 2006, the Town completed metering all residences which has encouraged conservation because people are now paying for water based on their actual usage. The current rate for water usage is \$2.60/100 cu.ft.

*Distribution* - Much of the current distribution system is composed of asbestos-cement (AC) pipe. In popular use from the 1940s through the 1960s, this material is susceptible to leaks. Small breaks or abrasions can become major pipe failures as the cementaceous

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<sup>9</sup> Hatfield Pavement Management Report, PVPC, March 2004

material disintegrates over time. Locations where new lines are tied into existing AC pipes are particularly threatened. As long as the pipe material remains intact, it is not believed to be dangerous to public health. However, because of its brittle nature, this piping material is being replaced as portions of the system are upgraded. Ductile iron is the material of choice in current line construction. The Town performed a leak detection survey of the distribution system in 2007 and detected and repaired one 10,000 gal/day leak and four smaller leaks at hydrants.

The size and the layout of the pipes delivering water to Hatfield residents and businesses are not fully adequate. The line serving Routes 5/10 is a mere 6 inches in diameter, far short of the 12 inches preferred to serve businesses and homes. Adequate water for fire suppression is a main worry for users along Routes 5/10.

Three other areas in Town require some modification in the layout of the water distribution pipes:

- Need to eliminate dead end water line at North Main Street
- North Street requires pipe size upgrade from 4 inches to 8 inches
- Need to continue 10-inch line from Depot Road to Main Street

**c. Sewer Service.** The wastewater treatment plant is 18 years old. It is located off Main Street on the Connecticut River and has a capacity of 500,000 gallons per day. Approximately one-third of the Town is currently served by this system. Current demand is 250,000 gallons per day. As the plant is now relatively old, it is likely that it will need ongoing maintenance and upgrades to avoid such costly repairs in the coming years. Billing for sewer usage is now based on water usage as determined by the metering program at \$4.20/100 cu.ft. of water used.

Some sewer lines are facing problems with infiltration and inflow (I & I). Some of the lines are cracked, and groundwater seeps in during heavy rain events. Thus, the plant treats groundwater and, during extreme storms, fills to capacity because of the inflow. The Town continues to rehabilitate old pipes sealing older joints with epoxy. The inflow problems consist of isolated areas where storm drains, footing drains, roof drains, and sump pumps are connected to the sanitary sewer primarily on Plantation and Primrose Roads or the Colonial Acres. Sanitary sewer manholes and piping have been completely rehabbed, all sump pumps have been removed and 13 of 36 footing drains have been separated in this area.

Some businesses located on the southern portion of Routes 5/10 are connected to the Town sewer. Several businesses from this area asked the Town to extend sewer from Dwight and Elm across I-91 so that they could tie in. The DPW, working with MassDevelopment, a regional economic development agency, obtained a grant to expand the Town's sewer service to this area. The sewer now extends from the Hatfield / Northampton town line north to the intersection of Linseed and Church Streets.

Expansion of town sewer service could spur secondary residential development along Linseed and Old Stage Roads, just as recent expansion on Bridge Street has increased pressure for significant development along the town's unimproved Jericho Road. The town therefore needs to assess carefully the provision of sewer service west of I-91 and to provide some means of controlling residential growth in this area. Such controls could include limitation on sewer flows via pipe size reduction, prioritized allocation of service, betterment zones favoring business use, or other techniques.

## **Long-Term Development Patterns**

### ***Zoning By-Laws***

During the Master Plan process undertaken by the town in 2000 to 2003, a critical evaluation of the town's zoning was performed that resulted in recommendations for a major overhaul of the town's zoning bylaws. According to the Master Plan for the Town of Hatfield published January 2001, "Regional pressures make it necessary for the town to take specific new actions to control its fate. Hatfield needs up-dated zoning regulations to preserve its rural character and enhance its economic base without overstepping private property rights. The town does not have adequate tools to attract new business to town while preventing over-scaled, poorly sited, or ill-designed commercial and industrial buildings."

The Master Plan also claimed that Hatfield lacked housing opportunities for elderly residents and for children of Hatfield families who wished to buy their first homes here. It lacked standards for clustered residential development that might help preserve open space. The Town's water supply was strained by residents' needs in the summer and is threatened by development occurring over the aquifer. Houses on large lots are being built on some of the world's richest farmland, while land currently zoned for industrial and commercial growth is crisscrossed by wetlands.

With the momentum of the newly created Master Plan behind it, a comprehensive zoning package was adopted at Town Meeting in May of 2003. The revised bylaws separated the Agricultural Residential "B" district into Rural Residential and a new Agricultural District, establishing ten (10) zoning districts as follows:

<u>DESIGNATION</u>	<u>TITLE AND PURPOSE</u>
RR	Rural Residential District
OR	Outlying Residential District
TC	Town Center District
TCB	Town Center Business District
B	Business District
I	Industrial District
LI	Light Industrial District
AG	Agricultural District
FP	Floodplain Overlay District
WS	Water Supply Protection Overlay District



The following changes were also made:

- Adopted site plan review/approval for all commercial and industrial uses.
- Adopted commercial and industrial design guidelines.
- Adopted commercial and industrial performance standards.
- Adopted Transfer of Development Rights bylaws.
- Created a new light industrial and technology park district.
- Created a new satellite business center district.
- Created an Agricultural Zoning District to provide protection of prime farmland.
- Created a Water Supply Protection District to protect the watershed and Hatfield's drinking water.
- Adopted a Stormwater Management Bylaw specifically for construction and post-construction storm water events.
- Adopted an Environmental Impact Analysis for large development projects.
- Created a Floodplain Overlay District to buffer the negative impact of development.

#### ***Scheduled/proposed subdivisions and expansions to infrastructure***

There are three approved subdivisions as follows: 1) 50-lot senior housing development on Elm Street for people 55 years of age and older; 2) 4-lot residential subdivision between Chestnut Street and Gore Avenue; and, 3) a 25-lot subdivision off Kellogg Road and Main Street next to the Hatfield sewer treatment plant. The Kellogg Road parcel was subdivided several years ago but has yet to be developed.

#### ***Projected community character with a maximum build-out under current zoning plans***

The PVPC performed a build-out analysis in 2003, to show how the town population and character could change if each zoning area were to be developed to its maximum under zoning in place at that time. Since then, a zoning overhaul has been adopted which may have some impact on the following build-out statistics. Such an analysis, however, is beyond the scope of updating an Open Space and Recreation Plan. Thus, the following build-out statistics are being provided for informational purposes and may not be reflective of development restrictions under current zoning. However, the potential for new development has been given great consideration in development of this plan and is reflected strongly in the Action Plan in Section 9.

**Summary Build-Out Statistics**  
**Impact of Additional Development-Hatfield, MA**

Developable Land Area (Acres)	7,119
Additional Residential Units	6,260
Additional Commercial/Industrial Floor Area (Square Feet)	6,532,719
Additional Residential Water Use (Gallons Per Day)	1,616,835
Additional Residential Solid Waste (Tons)	6,743
Additional Students	1,750
Additional Miles of Roadway	78

## **SECTION 4: ENVIRONMENTAL INVENTORY AND ANALYSIS**

### **A. Geology, Soils and Topography**

#### ***Geology***

Hatfield hosts two different topographic relief forms, one being the fertile lowlands in the eastern two thirds of the Town, and the second being Horse Mountain and the Rocks, located just west of Interstate 91. Both relief forms and the associated soil types have been greatly influenced by the last glacial Ice Age which most recently shaped the Town's geology a mere 10,000 to 20,000 years ago. The retreat of this two-mile high block of ice resulted in much of Hatfield being covered by a vast glacial lake known as Lake Hitchcock. The bottom of this lake marks the boundaries of the lowland which are characterized by thick varied lake bottom deposits that include glacial stream deposits of gravel and sand, outwash plains, deltas and terraces left by the retreating waters of the lake. More recently rich silt deposits are left by the Connecticut River as it periodically floods its banks during the high waters of spring while snaking across this primitive lake bottom. The edges of this lake are marked by a thin layer of sand, silt and gravel till left by the glacier on top of higher bedrock, which bounded the valley floor.

In close proximity to the rocky ledges (the Rocks) of West Hatfield is the abandoned Galena mine where tailings of barium sulphate (used as a lead substitute in paint) may still be found. The Hatfield lead vein is one of five similar accessible deposits in the central Connecticut Valley. Mining operations for gravel and sand deposits occur off Mountain and Rocks Roads, as well as between Linseed Road and Routes 5-10, in the western third of the Town.

#### ***Soils***

Soils within the Horse Mountain and Rocks region are very thin, generally poorly drained and wet, with shallow bedrock. The nature of these soils poses moderate to severe limitations on intensive development. The Town should use caution and carefully limit development in this region. In addition, this area is where the Town's reservoir is located and also is the aquifer recharge region for both of the Town's water wells.

The soils in the lowlands east of Interstate 91 are in sharp contrast to the rugged soils of West Hatfield. They are almost evenly divided between two predominant soils associations: (1) Hinckley-Merrimac-Windsor association, and (2) Hadley-Winooski-Limerick association. Each association has a distinctive pattern of soils, relief, drainage; each forms a unique natural landscape, and each consists of one or more major soils and some minor soils.

The Hinckley-Merrimac-Windsor association consists of about 25% Hinckley, 15% Merrimac and 10% Windsor soils. The remaining 50% minor soils are composed primarily of Agawam, Sudbury, and Walpole soils. The soils in this association are deep, nearly level to steep, excessively drained, both sandy and loamy, and formed in outwash

deposits in outwash plains. These soils are suited best to tree growth and can be droughty. This droughtiness could limit plant growth. The major soil groups in this association possess very rapid permeability; hence with current Title V Health Code regulations there are few limitations for private septic systems. The rapid permeability does create the possibility for ground water contamination. Walpole and Sudbury soils possess a high water table. In Hatfield, this association is found predominantly in an approximately 2+-mile band along Interstate 91.

The Hadley-Winooski-Limerick association consists of about 35% Hadley, 15% Winooski and 10% Limerick soils. The remaining 40% minor soils consist of Pootatuck, Rippowam, Saco, and Suncook soils. These are deep, nearly level, well to poorly drained, loamy soils formed in alluvial materials on floodplains. They are found mostly in broad bands adjacent to streams and rivers. They are exceptionally suited as cropland as well as for tree growth. These soils are subject to occasional flooding and seasonally high water, which could limit their use for private septic systems. This association is located from the Connecticut River westerly to the Hinckley-Merrimac-Windsor association mentioned above.

The U.S. Department of Agriculture has defined a land capability classification, which shows in a general way the suitability of soils for most kinds of field crops. The soils are grouped according to their limitation for field crops, the risk of damage if they are used for field crops, and the way they respond to management. Capability classes are designated by Roman numerals, I-VIII, indicating progressively greater limitations and narrower choices for practical use. Generally, the soils best suited for agriculture are classes I-IV. Of the 21 soil classes found in the lowlands east of Interstate 91, 14 classes are class III or better. The dominant class is the Hadley silt loam, a class I soil.

"SCS Agricultural Soils Land Use Statistics" produced by the Soil Conservation Service for a Connecticut River Valley farmland retention program in the early 1980s, identifies 5,045 acres of prime farmland soils in Hatfield, and 1,239 acres of soils of state and local importance. According to *National Geographic*, Hatfield has the seventh best agricultural land in the world. Hatfield as part of the larger Pioneer Valley has been identified by the national farmland conservation organization, American Farmland Trust, as the 19<sup>th</sup> most threatened agricultural landscape in the Nation.

These data objectively verify the commonly held perception that Hatfield is blessed with a large amount of the best soils in the country. A soils-based protection strategy obviously should strive to retain the best soils, either prime or of state or local importance, for agricultural use and should guide growth and development on to the poorer quality soils. Unfortunately, however, the best agricultural soils often present the least impediments for development. The worst soils are in the areas otherwise not acceptable for large-scale development.

### ***Topography***

The relief and forested areas are greatest in the section of Town west of Interstate 91 in several of the mountains (Horse and Chestnut) and the Rocks, with elevations reaching as

high as 840 feet above sea level, with steep slopes ranging from 5 to greater than 15%, which is often the limits of readily developable land. In this densely wooded terrain, outcroppings of bedrock alternate with pockets of wetlands, most of which flow into Running Gutter Brook, the primary stream draining these western Hatfield hills. East of the Interstate are the fertile Connecticut Valley lowlands, where the terrain has hardly any slope—elevations being as low as 110 feet above sea level. Map 2 provides greater details on the Agricultural Soils and Topography of Hatfield.

## **B. Landscape Character**

The Town of Hatfield has diverse natural landscapes, which have more or less formed natural boundaries for residential, industrial and agricultural development. The Connecticut River has cut a path in the bottom of a former glacial lake bottom, and its natural flooding cycles have contributed to rich farmland in the lowlands that border its banks. The early settlers recognized the value of this land, and thus built their homes on this land adjacent to the river more than 300 years ago. Today in the center of Town, there remain many grand old homes adjacent to vast flat fields that extend to the banks of the river where cash crops of potatoes, cucumbers, squash and other vegetables are grown.

The large expanse of former alluvial floodplain soils is a unique natural resource. In few places around the world are the soils of such high agricultural quality. Large tracts of farmland can still be found In North Hatfield - east of Bradstreet and Main, along Straits Road, east of Great Pond, and in the floodplain along the Connecticut River south of Town. Located in the midst of the farmland is the remnant of a wayward Connecticut River, the Great Pond and Cow Bridge Brook. A Connecticut River oxbow, the Great Pond, with its approximately 200 acres of open water, wooded swamp, and marsh, has many rare plant species and is an important refuge for migrating wildfowl.

Above the lower river valley, near the general north-to-south line formed by Prospect Street and Straits Road, you reach a plateau where farmland, residential, commercial and industrial development has been a part of the landscape for several decades, developing on the flat terrain which readily supported agricultural activities during the early history of the Town. The Mill River falls at the Prospect Street dam dramatically mark the rapid change in topography between the lower floodplain terrain and the upper plateau. The railroad and state/interstate highway systems are located within these areas and have served as focus for more recent residential, commercial and industrial growth in amongst scattered farm parcels.

Further to the west, the flat upper plateau is bounded by a rugged wooded hilly landscape whose primary value to the Town is its source of water and its recreational possibilities, with some limited residential development having escalated within the last twenty years. The area of Hatfield west of Routes 5-10 is dramatically different from the flatland of the eastern part of Town. Here, the steep, rocky wooded slopes contain three main natural features: the “Rocks”, Horse Mountain, and Chestnut Mountain.

Horse Mountain, rising approximately 840 ft. and covering approximately 3100 acres, is most easily accessible by a trail off of Coles Rd in Hatfield accessible from Williamsburg. The mountain is hardwood forest, with few conifers and much mountain laurel. Included among the several steep slopes and vistas are several impressive views, White Rock being one such vista. Providing a 180-degree view of Hatfield Center and the Connecticut Valley, it contains a limited amount of white quartz and is important for geologic study.

Chestnut Mountain is located in the northwest section of Town and rises approximately 740 ft. above sea level. It can be reached via Chestnut Road off of Rocks Road. Much of this area is part of the Northampton Mountain Street reservoir and, as such, will be protected as open space. Horse Mountain and Chestnut Mountain provide the opportunity for hiking, snowmobiling, horseback riding, and hunting as well as being an important wildlife habitat.

The “Rocks” is a north to south ridgeline with much exposed bedrock between Route 5 and Linseed Road. They are a steeply rising, rugged section of terrain which forms the easterly boundary of West Hatfield. There is the potential for a series of trails to connect Horse Mountain, Chestnut Mountain and the “Rocks”.

Between the Rocks and Horse Mountain is the Hatfield reservoir. Approximately 300 acres of wooded land, mainly mixed stand of hardwood and softwood, this is an important wildlife area. Running Gutter Brook, a clear clean brook flowing to and from the reservoir, contains recreational and water supply functions along with the habitat of an endangered species. There is also a small falls, which further enhances the beauty of this stream. Broad Brook, near the southwest border, is another clear fresh brook in this area.

## **C. Water Resources**

### ***Rivers and Streams***

Hatfield is heavily influenced by watercourses. There are approximately 35 miles of stream and river channel within the town boundaries, primarily consisting of the Connecticut River, the Mill River, Running Gutter Brook, Mountain Brook, and Broad Brook. The following is a brief description of these water resources and some of the important features of each.

#### **Connecticut River**

About 7.5 miles of the Connecticut River forms the eastern and part of the southern boundaries of Hatfield, providing approximately 450 acres of open water. The Connecticut River is one of the longest and largest rivers in the American northeast and it has influenced everything from settlement patterns to agricultural productivity.

The construction of the wastewater treatment plant has contributed to the upgrading of the river to Class B (fishable/swimmable) status, allowing the potential for swimming, recreational boating, fishing and wildlife propagation. The river supports over 30 species

of fish including shad, walleye, northern pike, and catfish. This section of the river is also part of a federally funded and not particularly successful Atlantic Salmon Restoration Program. It is also home to many other types of wild animals, such as ospreys, river otters, and herons.

The dike, adjacent to the river in the Indian Hollow section, offers 2 miles for hiking, hunting, and cross-country skiing, however, it is illegal to discharge a firearm within 100' of a residence. Access to the dike can be gained from Valley Street, South Street, Bridge Road, and the path directly across the street from Memorial Town Hall on Main Street, immediately to the south of the former Center School building.

Access to the river is possible from Old Farms Road, Upper Farms Road, Bashin Road, at the state boat ramp, the dike, at what is known as the Indian Hollow boat ramp near Kellogg Hill Road, and at the confluence of the Mill and Connecticut Rivers. Boat access is limited to the state boat ramp, while small canoes can be entered in the water at the Indian Hollow site and the confluence of the Mill and Connecticut. Three sites, along Bashin Road, Indian Hollow, and the confluence of the Mill and the Connecticut, are most suited for swimming. Canary Island, located near the Northampton border, offers the potential for limited access picnicking or boat camping.

Land use patterns along the Connecticut River in Hatfield show that most of the acreage within 2,000 feet of the riverbank is in agricultural use. At several points along the river, forestland provides a vegetated buffer to human activities although much of this forest area is quite narrow—less than 200 feet deep. The Town center area parallels the river for approximately two miles, coming within 800 feet of the bank for much of this stretch. Most of this riverbank, however, remains unprotected from development.

### Mill River

The Mill River is a central geographic feature within Hatfield, draining from a watershed of 5 communities. The Mill River enters the Town along the northern boundary with Whately. In the northern portion of Town, the Mill River parallels the west side of Route 91, but then flows in a broadly meandering southeasterly path to its confluence with the Connecticut River. Once called Capawonk Brook, this meandering, approximately 7-mile river forms a natural green belt through the Town. With variable depth and width, containing dual channels, islands, and peninsulas, overhung with trees and lined with native shrubs, this enchanted wilderness is a haven for recreationalists, naturalists, hunters and fishermen. The wildlife supported includes several species of ducks and songbirds as well as trout, pickerel, and perch.

The Mill River watershed has been the focus of increasing research over the past several years, showing the unique value of this riverine resource with studies performed by Smith College, University of Massachusetts and Cornell University. It has become known as one of the most biologically diverse river systems in Massachusetts, supporting four of the state's seven listed species of freshwater mussels, including the Federally endangered dwarf wedgemussel *Alasmodonta heterodon*. There are additional protected flora and fauna known to inhabit this river corridor, including the wood turtle *Clemmys insculpta*.

River otter live along the brook, the favorable water quality of which also supports brook trout. Atlantic salmon are known to migrate to the base of the historic Hatfield Dam on Prospect Street. There are at least five access points to the Mill River (Plain Road, Chestnut Street, Bridge Street, off Elm Street, and off Farm Road) for fishing and other activities.

The Hatfield Dam on Prospect Street is close to the mouth of the Mill River at its junction with the Connecticut River. The dam is approximately 150 feet long, 15 feet high and three hundred years old and was built on a 7 foot high sandstone outcrop. The dam is the only one on the Mill River and blocks the movement of fish (Atlantic salmon, American shad, blueback herring and lamprey) and other aquatic organisms between the Connecticut River and the upper watershed.

A feasibility study for the removal of the Hatfield Dam to restore fish passage continuity has been completed.<sup>10</sup> Dam removal is complicated by a number of factors. Removal of the dam could negatively impact the mussel population through the introduction of predatory species. It could also potentially impact the extensive upstream wetland system through a decrease in water levels. In addition, the old mill site was listed on the National Register of Historic Places in 1982.

Major tributary streams to the Mill River include Running Gutter Brook and Mountain Brook, which drain much of West Hatfield. Running Gutter Brook drains much of the Rocks and Horse Mountain areas, feeds the Hatfield Reservoir and includes the tributary of Broad Brook, whose watershed extends into Northampton. Mountain Brook drains the northwest portion of Hatfield and extends into Whately. It originates at the Northampton water reservoir system, and a portion of its natural watershed contributions are diverted to other portions of the Northampton water system.

### ***100-Year Floodplain***

The 100-year floodplain is defined as an area with a 1 percent chance of flooding in a given year. The floodplain serves as a critical habitat for many plant and animal species and provides some of the richest agricultural soils in the Pioneer Valley. An overlay-zoning district for protecting floodplain areas in Hatfield has been completed in conjunction with the proposed zoning map. Areas in the 100-year flood zone in Hatfield are primarily those lands adjacent to the Connecticut River in the eastern part of the Town and along the Mill River in central Hatfield. A portion of the floodplain extends northward along a portion of Running Gutter Brook into West Hatfield, as well. Much of this flood area is currently in agricultural production—cleared of wooded, habitat areas—and ready for development. This condition perhaps makes these areas more vulnerable to development in the coming years.

Hatfield has not experienced substantial development of its floodplain areas and with the new Floodplain and Riverfront (or Agricultural) Overlay Districts, greater review is

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<sup>10</sup> Parasiewicz, Piotr et al., *Advocate Dam Feasibility Study, Mill river, Hatfield, Massachusetts*. Northeast Instream Habitat Program, Department of Natural Resources conservation, University of Massachusetts. January 2007.



required in order for a structure to be built in this area. Neither of these zoning districts expressly prohibits residential or other development but rather require certain provisions for its occurrence which add costs to a project. Hence, these overlay districts do not prevent development but potentially make it more expensive. Other protective regulations and disincentives that limit development in the floodplain exist at several levels: 1) Lending institutions may require flood insurance for those structures built in the 100-year flood zone; 2) The Massachusetts Wetlands Protection Act limits the impacts of construction and alteration activities in the floodplain through its local enforcement by the Conservation Commission; and 3) The State Building Code requires the elevation of structures in the floodway, and also reinforces the overlay district regulations by prohibiting any change in the flood storage capacity of the area.

### ***Wetlands***

The Town of Hatfield includes about 3100 acres of wetland, floodplain, and open water (including about 450 acres of the Connecticut River), which accounts for about 30% of the Town's total area. These wetlands include the open water of streams and ponds, shrub swamps, forested swamps, wet meadows, bogs, marshes, beaver ponds, and land within the flood water elevation of the 100-year storm, not all of which is currently considered true vegetated wetland under the Massachusetts Wetlands Protection Act, Chapter 131, Section 40 of the General Laws of the Commonwealth. Wetlands were identified using aerial photographs (Mass. Map Down, MacConnell et al., 1972), USGS topographic maps, and Flood Hazard Boundary Maps (Federal Insurance Administration) as presented in the Hatfield Land Use Planning Study (Almer Huntley, Jr., & Associates, Inc.).

Most of the wetlands are in the eastern and northern sections of Hatfield bordering the Connecticut River, the Mill River, Great Pond, and the old oxbow meander in the northeast section of Hatfield. The wetlands in West Hatfield are primarily narrow wetlands bordering Running Gutter Brook and its tributaries, with larger expanses within the Rocks area and at the base of Horse Mountain. However, several small isolated wetlands exist in this area as well, which also provide important wetland wildlife habitat.

Wetland areas are home to frogs, fish, freshwater clams and mussels, beaver, muskrats, great blue herons, waterfowl, and bitterns. Wetland habitats in Town occur along stream and river corridors with some isolated ponds and pools in places like The Rocks in West Hatfield. In Hatfield, wetlands and water resources stretch from the hills in the west to the Connecticut River on the east and from Whately on the north to Northampton on the south.

Riparian areas are the vegetated lands adjacent to water sources. This juncture of land and water attracts a range of species and tends to mark a transition zone between habitats. As such, these corridors link one habitat to another. In Hatfield, the riparian areas exist along the Connecticut River, Mill River, Running Gutter Brook, and Great Pond. Many of these riparian areas remain intact, aided by the Rivers Protection Act and regulations restricting floodplain development. However, floodplain regulations in Hatfield are not as effective as they could be. An ineffective floodplain overlay district requires revision or

replacement with a bylaw that can decrease inappropriate development if the community wishes to do so.

In 1996, Massachusetts amended its Wetland Act to include protection of a 200-foot buffer along all streams and rivers in the commonwealth. Development within this “riverfront area” is severely restricted to protect the natural quality of the waterway, its adjacent wetland areas, and its habitat and wildlife resources. The Rivers Protection Act established this additional resource area to be considered by local conservation commissions who must enforce the wetlands regulations. Waterways affected by these regulations include those that flow year round. Even with the Rivers Protection Act in place, it is probable that there will continue to be some development along waterways. Single lots of record in existence at the time the law was passed in 1996 are held to a less restrictive standard that allows development within the “outer riparian zone” (100’—200’). The Hatfield Wetlands Bylaw establishes additional protections beyond the State Wetlands Protection Act especially up gradient of the reservoir and to isolated wetlands.

### ***Watersheds***

The entire landmass of the Town is situated in the Middle Connecticut River Watershed Basin. All naturally draining surface water in Hatfield eventually finds its way to the Connecticut River. Three major watersheds drain the 10,000± acres of land in the Town.

Running Gutter Brook in West Hatfield drains one of these watersheds. This sub-watershed has its genesis in the upper reaches of West Hatfield along Mountain Road and includes the Hatfield Town Reservoir. The brook is also fed by inputs from Whately and Northampton. Broad Brook feeds into Running Gutter Brook from Northampton. Two minor watershed areas in West Hatfield drain into Northampton, one of which includes Mountain Reservoir. About one-third of this 35-acre reservoir is in Hatfield’s far northwestern corner.

The second major watershed drains through the Mill River, a primary tributary of the Connecticut River with its headwaters in the Town of Conway. Running Gutter Brook joins this mature river just east of I-91 in south central Hatfield. The dam at Prospect Street, the site of former water based industry, causes the watercourse to run deep upstream of the dam with wide meanders and broad marshes that are important wildlife habitats.

The third major watershed is within the northeast corner of Hatfield. This area drains the remnants of an old Connecticut River meander—once an “oxbow lake”—including Great Pond and Cow Bridge Brook, and eventually drains to the Connecticut River. This area was originally an oxbow lake, which, over the years, has aged due to sedimentation and eutrophication, and the oxbow is now a series of ponds and marshes. It remains a significant wildlife habitat and Connecticut River flood storage area.

### ***Public Water Supply***

Of the three sources of drinking water in the Town of Hatfield, the community has come to rely heavily on but one—the Running Gutter Brook Reservoir. This surface water source provides most of the water reaching homes and businesses in the Town. A filtration plant prepares the water for distribution to users in the Town. Two public wells supplement the supply from the reservoir: the Omasta Well and the West Hatfield Well, neither source of which is treated with filtration or chlorination. Cost has dictated the choice of primary water supply from the reservoir, as the operation of the filtration plant remains less expensive than the electrical power used to operate the two wells. The wells are used primarily in two situations: 1) to provide adequate water supply during peak demand hours (summer months), and 2) to bypass the reservoir supply during times of high turbidity (primarily after heavy rainstorms).

<b>Table 6. Source of Hatfield Public Water</b>	
<b>Water Source</b>	<b>Approximate Annual % Total Water Supply</b>
Town Reservoir	70 %
West Hatfield Well	20 %
Omasta Well	10 %

This reliance on a surface water reservoir as the primary supply of water to Hatfield presents several problems:

- 1) Vulnerability and sensitivity to land use changes in the watershed: Changes in land use that result in a degraded water supply area can directly, and quickly, affect the quality of the water supply. The removal of forest lands, wetlands, and other naturally vegetated areas can result in increased storm runoff and increased sediment in the reservoir. This leads to the turbidity problem during heavy rains.
- 2) Vulnerability to contamination by human activity: Human activity, and development in particular, leads to an increased threat of contamination via failing on-site septic systems, hazardous waste spills (even motor oil and gasoline), and increased use of lawn chemicals (pesticides, herbicides, and fertilizers). All of these threats can result in immediate contamination of the supply.
- 3) Capacity for growth: There are limits on the number of gallons that can be affordably and practically provided to users of the water supply system when surface waters are the primary source. The current safe yield of Running Gutter Brook Reservoir is approximately .5 million gallons per day (mgd), and up to 1 mgd with the two wells online. Water usage in 2006 averaged 331,178 gallons per day which was a reduction in usage from the previous year after the town completed metering all service connections. Metering generally creates a reduction in usage and can function as conservation or demand management measure. Water users perceive that because they are paying for their water based on their actual usage versus a flat fee, their bill will go up which in turn makes people use less water.

Threats to the water resource follow closely those to the watershed areas and waterways. They include:

- Residential development in sensitive areas—particularly in the forested water supply area feeding the reservoir
- Clearing of vegetation that borders waterways
- Alteration of stream conditions such as temperature, velocity and volume of flow, and turbidity (amount of particulate matter in the water)
- Non-point source pollution from households, septic systems, roadways, agricultural operations, and industries
- Overuse or misuse of recreational resources
- Poor stewardship of forest lands through inappropriate timbering practices

The development of residential lots in the upper reaches of the Running Gutter Brook watershed in recent years endangers the health of the reservoir. Continued removal of natural vegetation and replacement of this natural landscape with human residences increases storm water runoff contaminated by lawn fertilizers, pesticides, de-icers, motor oil, and other damaging substances.

According to a 1999 report titled “Comprehensive Nonpoint Source Management in the Mill River Subwatershed, Hatfield, Massachusetts”:

“Many large agricultural land parcels are being converted to residential uses. This is evidenced by the number of withdrawals of Chapter 61A farm parcels from the farm use assessment tax programs. Several large, unused, easily developable agricultural parcels are located in the primary recharge area to Hatfield’s Omasta and Whately Wells. Without adequate land use controls, large subdivision development of this area could threaten the quality of Hatfield’s drinking water supplies....The watershed and recharge areas are extremely desirable locations for new homes.”

Threats to the aquifer recharge areas surrounding the Town wells are similar to those in the water supply area feeding the reservoir. The 1994 report Developing a Regional Wellhead Protection Program notes:

“...hazardous wastes and petroleum present one of the greatest threats to aquifers. Only a few parts per billion of these contaminants can ruin an aquifer for human use....Subsurface oil or gasoline storage tanks in service stations, private residences, and businesses present a serious threat to groundwater supplies. Stringent preventive measures are justified, due to the considerable impairment of groundwater supplies from the many leaks and spills from petroleum products. The cost to restore contaminated aquifers can reach millions of dollars.”

The report goes on to document the location of the primary and secondary recharge areas in Hatfield, illustrating that most of the land west of I-91 lies in the secondary recharge zone. The primary recharge zone covers a swath of land in the upper reaches of Running Gutter Brook. Land uses that pose a high risk to the water supply in this area of Hatfield

include auto service and repair facilities, fuel stations, auto body and auto repair shops, general agricultural use, major highways, railway tracks, commercial greenhouses/nurseries, operational equipment storage, road and maintenance depots, fertilizer/pesticide storage and application, on-site septic systems, and underground storage tanks.

A Zone II study of the West Hatfield Well, completed in January 2000, provides a more detailed and accurate delineation of the recharge area. The new Zone II delineation was used to update the current Water Supply Protection District boundary on Hatfield's zoning map and to ensure a safer source of public water.

## **D. Vegetation**

### ***Forest Land***

In terms of forest types, Hatfield is located in what is referred to as the transition zone. This transition area is a blending of the southern oak-hickory forests and the northern maple-birch climax forest types. Also found in association with this zone are eastern white pines. Forty-five percent of Hatfield's total acreage is forested land.

The forest resources and woodlands in Hatfield lie primarily west of the I-91 corridor. Extensive range of forestland encompasses approximately 4,800 acres, which consists of 45 percent of the total land area in the Town. There has been a slight decline of 75 acres, or 2 percent, in forested cover since 1985. The residential development that has occurred recently along Linseed Road and Mountain Road accounts for some of this land conversion.

There are approximately 135 species of trees and woody shrubs naturally occurring in Hatfield. Several species have an economic importance to the lumber industry and are used locally, as well as exported out of the region to other states and European markets. Eastern white pine and northern red oak head the list of commercially valuable species. Pine is used widely in the construction of homes, outbuildings, furniture, crates and boxes, and as pulpwood for the paper industry. Red oak is in demand for veneer for paneling, flooring, trim detail in homes and buildings, and for furniture.

Without forested areas, floodwaters from heavy storms would run off more rapidly, raising flood waters and assuring more property and crop damage. Other environmental impacts such as air quality degradation, reduction of visual buffers from adjacent uses, and elimination of habitat could ensue as well. In particular, West Hatfield forested land provides important absorption and filtration of water runoff before it reaches the Town's water supply reservoir. Protecting this supply will be crucial to the future commercial and residential growth of the Town. Continued deforestation within the water supply recharge area could result in pollution of the supply as oil, fertilizers, and other chemicals are rapidly washed off developed areas to the surface waters.

Deforested areas in the hills also could cause impacts on down-gradient properties as the rapid runoff causes erosion of stream banks and hillsides, sending sediment onto farmland and other properties, and potentially causing greater damage to homes and businesses during major storm events. Erosion causes streams and rivers to fill with silt, resulting in oxygen deprivation to water plants and animal species, killing them and causing down-slope wetlands to deteriorate. This in turn would eliminate food sources for migratory birds and land animals. Finally, the loss of significant forested areas will visually alter the character of the community.

The vegetation of riparian zones where water and land meet also serve important functions to both the wildlife of the area, as well as to man's dependence on these environments. These "bordering vegetated wetlands" along streams, rivers and ponds in the Town provide wildlife habitat and play a critical role in maintaining water quality by serving as natural filters for nutrients, toxins, and sediment that would otherwise move directly into surface and ground waters.

### ***Rare, Threatened and Endangered Species - Flora***

A biologically diverse native ecosystem is important to ensure stability of all plant and animal species. On a global scale, it is essential for human health as well. As the number of species within an ecosystem declines, the remaining species become more dependent upon fewer resources for survival. In many cases, the elimination of one species leads to the demise of another or many others when such species cannot adapt to the reduction and change in their environment.

Because of its diverse terrain, Hatfield is abundant in important habitat for plants as well as animals. BioMap cores (C709, 605, 751, 706, and part of 734), Living Waters Cores (LW354 and 425), and PH1233/EH874 extend along the Connecticut and Mill Rivers in Hatfield and include multiple rare species: these rivers and their surrounding areas are of great biodiversity importance. BioMap and Living Waters cores were produced by NHESP to identify the areas of most importance for biodiversity: they are based on known locations of rare species and uncommon natural communities, and incorporate the habitats needed by rare species to maintain the local populations. BioMap focused on species of uplands and wetlands; Living Waters focused on aquatic species. Large unfragmented conservation land provides the best opportunities to maintain populations of species and limit further species loss from the Town. Land protection that ties in with open space in other municipalities, and other protected open space, public or private is one way to provide important large areas of biodiversity protection.

Most of the rare plants of Hatfield are species of riparian areas – river and stream side specialists. Because floodplain areas are also prime agricultural lands, habitat for these species has diminished over the years. The remaining undisturbed and even moderately disturbed lands along the rivers provide important habitat for these rare and other more common native species, as well as helping to protect the waters of the rivers and streams. Other plant species formerly known from Hatfield, such as New England Blazing Star, were found in pastures and other dry open areas. Moist forests with some nutrient

richness support some of the other upland species. Hatfield clearly has a variety of habitats, some of which have been lost or changed as the land has reforested over time.

There are several uncommon natural communities from Hatfield in the Massachusetts Division of Fisheries and Wildlife's Natural Heritage and Endangered Species Program (NHESP) database, all but one associated with the rivers. The various types of floodplain forest are just small remnants of what would have been present in the past. Even the small degraded example of Major-river Floodplain Forest (located at Bashin Beach) could be a core for restoration and river shore protection. The other uncommon type of natural community, the Black Gum-Pin Oak-Swamp Whit Oak "Perched" Swamp (located in North Hatfield between Route 5 and River Road and extending north into Whately) is very uncommon, forming only on glacial lake sediments, and known from very few places in Massachusetts and Connecticut. Even though only a small part of this community occurrence is in Hatfield, most being in Whately, protecting the area with the community would contribute to maintaining the region's biodiversity.

Hatfield is one of the towns with town wide maps showing areas forested in the 1830s, areas of possible Primary Forest, most of which were untilled woodlots and wooded pastures. Such lands have greater biodiversity than areas that have been tilled. These are not Old Growth, they have been harvested and pastured, but the ground may not have been tilled. Harvard Forest digitized maps from the 1830s that the Massachusetts legislature mandated that the Towns make. Hatfield's map exists and shows areas that were forested in the 1830s. NHESP GIS staff took those data and combined them with information from MassGIS' landcover datalayer made from 1999 aerial photos. Although a great deal will have gone on in those areas in the time between the map dates, some areas that were forested in both times won't ever have been tilled. Surveys of the soil structure in the individual sites are necessary to determine whether those sites are Primary Forest. The importance of primary forest is that such sites retain more native biodiversity than sites that have been tilled: soil fauna and flora, microorganisms and plants that reproduce primarily vegetatively contribute to the higher biodiversity. In addition, a variety of species of wildflowers are more common in untilled forests than previously tilled lands. The areas of 1830s forest on private land would be good targets for conservation acquisition to maintain the biodiversity of the town and region.

According to NHESP, as of 2007, there are 13 Certified Vernal Pools (CVP) and many additional Potential Vernal Pools (PVP) (identified from aerial photographs, needing verification on the ground) in Hatfield. Areas of swamps also provide habitat for vernal pool species. Certifying more of the PVPs would provide additional protection to these wetlands and the species that use them. There are several clusters of CVPs/PVPs, which provide extra habitat value for the species that use them since each pool is somewhat different and provides alternate habitats in different years and seasons. Any such lands already protected are good sites for biodiversity and good cores for larger properties. When such clusters are on "1830s forest" described next, they are particularly good targets for protection.

**Table 7 Rare Species and Natural Communities Documented in the Town of Hatfield (as of December 14, 2007)<sup>11</sup>**

Scientific Name	Common Name	MESA Status	Most Recent Year
<b>VASCULAR PLANTS</b>			
<i>Actaea racemosa</i>	Black Cohosh	E	1973
<i>Arisaema dracontium</i>	Green Dragon	T	2007
<i>Deschampsia cespitosa</i> ssp. <i>glauca</i>	Tufted Hairgrass	E	1991
<i>Desmodium canescens</i>	Hoary Tick-trefoil	WL	
<i>Digitaria cognata</i> ssp. <i>cognata</i>	Fall Witch-grass	WL	
<i>Eleocharis erythropoda</i>	Redfoot Spike-rush	WL	1983
<i>Eleocharis intermedia</i>	Intermediate Spike-sedge	T	1984
<i>Equisetum palustre</i>	Marsh Horsetail	H	1938
<i>Eragrostis frankii</i>	Frank's Lovegrass	SC	1987
<i>Hypericum ascyron</i>	Giant St. John's-wort	E	1974
<i>Liatris scariosa</i> var. <i>novae-angliae</i>	New England Blazing Star	SC	1860
<i>Menispermum canadense</i>	Moonseed	WL	
<i>Pseudolycopodiella caroliniana</i>	Carolina Clubmoss	H	1976
<i>Sagittaria rigida</i>	Mud-arrowhead	WL	
<i>Salix exigua</i>	Sandbar Willow	T	2004
<i>Tillaea aquatica</i>	Pygmyweed	T	1984
<b>NATURAL COMMUNITIES</b>			
Black gum-pin oak-swamp white oak "perched" swamp	S2		1993
High-terrace floodplain forest	S2		1998
Low-energy riverbank	S4		1991
Small-river floodplain forest	S2		1998
Transitional floodplain forest	S2		1997
<b>VERTEBRATES</b>			
<i>Acipenser brevirostrum</i>	Shortnose Sturgeon	E, FE	1999
<i>Ambystoma opacum</i>	Marbled Salamander	T	2002
<i>Clemmys guttata</i>	Spotted Turtle	Delisted	1996
<i>Glyptemys insculpta</i>	Wood Turtle	SC	2005
<i>Haliaeetus leucocephalus</i>	Bald Eagle	E	2006
<i>Hybognathus regius</i>	Eastern Silvery Minnow	SC	2003
<i>Ixobrychus exilis</i>	Least Bittern	E	1991
<i>Pooecetes gramineus</i>	Vesper Sparrow	T	2000
<b>INVERTEBRATES</b>			
<b>Freshwater mussels</b>			
<i>Alasmidonta heterodon</i>	Dwarf Wedgemussel	E, FE	2006
<i>Alasmidonta undulata</i>	Triangle Floater	SC	2006
<i>Lampsilis cariosa</i>	Yellow Lampmussel	E	2006
<i>Ligumia nasuta</i>	Eastern Pondmussel	SC	2001
<i>Strophitus undulatus</i>	Creeper	SC	2001
<b>Dragonflies and Damselflies</b>			
<i>Gomphus abbreviatus</i>	Spine-crowned Clubtail	E	2005
<i>Gomphus ventricosus</i>	Skillet Clubtail	SC	2005
<i>Neurocordulia yamaskanensis</i>	Stygian Shadowdragon	SC	2007
<i>Ophiogomphus aspersus</i>	Brook Snaketail	SC	1998
<i>Stylurus scudderi</i>	Zebra Clubtail	E	2006
<i>Stylurus spiniceps</i>	A Clubtail Dragonfly	T	2006

**KEY TO MESA STATUS:** FE – Federally Endangered; E = Endangered. T = Threatened. SC = Special Concern. H = Historic, no longer present in state. WL = unofficial Watch List, not regulated. Delisted – species no longer

<sup>11</sup> MA Division of Fisheries and Wildlife, Natural Heritage and Endangered Species Program, December 14, 2007



protected under MESA. Natural Communities are not regulated. S (state abundance) ranks are on a 1 to 5 scale, with S1 being considered vulnerable, generally having 1 to 5 good occurrences, and S5 being demonstrably secure. Community types ranked S1, S2, and S3 are priority for conservation protection.

## **E. Fisheries and Wildlife**

### ***General Inventory***

Wildlife populations are related directly to habitat, which is a function of soil types and vegetation. All forms of wildlife have two basic requirements: food and cover. If one is deficient, a stable population cannot exist. Many species do not restrict themselves to one habitat, but share both upland and lowland sites at various times.

The wooded areas of West Hatfield are primary habitat for several upland mammal species including white-tailed deer, black bear, bobcat, eastern coyote, red and gray fox, porcupine, skunk, weasel, red and gray squirrel, flying squirrel, fisher cat, opossum, raccoon, snowshoe hare, cottontail rabbit, mice, voles, moles, shrews, woodchuck, chipmunks and bats. These upland forests are contiguous with vast forest tracts of the Appalachian Range in the American northeast, and sightings of moose that move along these corridors have become more frequent in recent years. Upland birds include ruffed grouse, turkey, woodcock, turkey vulture, several species of hawks and owls, crows and ravens, woodpeckers, and deep wood songbirds such as wood thrush, scarlet tanager, and veery among others.

Lowland wildlife mammals are primarily beaver, muskrat, otter and mink. Lowland birds are primarily Canada geese, several species of ducks, osprey, green and blue herons and kingfishers.

Grasslands and open fields are habitat for grassland birds such as meadowlarks, bobolinks, vesper sparrows, and mammals such as mice. These areas occur generally in the parts of Hatfield east of I-91 and include much of the Town's agricultural lands. In general, the upland species occur west of Interstate 91 and lowland species east of it. There are exceptions, however, the ring-necked pheasant being one, most often associated with open farmlands. Great importance should be attached to the numerous species of insects, reptiles and amphibians that inhabit both upland and lowland environments and form the basis for much of the food chain.

Fish range from warm water species like bass, pickerel, catfish, sunfish and walleye to cold-water species such as brook, rainbow and brown trout. Trout are found mainly in the Mill River and Running Gutter streams.

The Massachusetts Department of Fisheries and Wildlife and the Hatfield Fish and Game Club annually stock trout in the Mill River and place a large population of ring-necked pheasants in eastern Hatfield. Hunting, fishing, and trapping are very popular with many people, as is bird watching and nature study. These activities are the principal ones that use the different wildlife resources.

## *Environmental Needs of Wildlife*

The various natural resources present in Hatfield provide a wide array of benefits for both the natural environment and the residential, farming, and business community at large. It is beyond the purview of this plan to provide an exhaustive identification of the carrying capacity of these resources. However, it is widely documented that substantial degradation or elimination of resources such as forestlands, wetlands, floodplain areas, and riparian habitat has profound implications on the communities surrounding these areas. If wetlands and floodplain areas are unable to perform their intended filtering and absorption functions, results such as increased weed growth and algae blooms will occur. These blooms use a tremendous amount of oxygen during their natural cycles. This massive consumption of oxygen leaves little for fish and other plant life, causing “fish kills” and ultimately affecting the entire food chain from plants to birds and animals that depend on aquatic life for sustenance. Not only is the natural filtering and absorption eliminated, but also what replaces the wetland is generally impervious surface, which increases the velocity of runoff and often leads to erosion.

The extensive forestland in the hills and along river corridors provides vital resources for wildlife. These include:

- Protection and shelter for inland and water-based species such as bear, moose, duck
- Nutrient and food source for land and water species
- Nesting areas for indigenous birds such as osprey, duck, and heron
- Seasonal shelter and food source for migratory birds
- Protected breeding areas

A great diversity of species is dependent upon the wetlands and riparian areas in Hatfield. If these corridors are disturbed or interrupted, damage to habitat and species population will result. This holds true for common species as well as rare and endangered species. Maintaining the integrity of wetlands and riparian corridors with vegetated cover is important to:

- Provide shelter for various species
- Provide protected corridors for movement between and among adjacent habitats
- Provide food source
- Provide permanently flowing water sources
- Provide nesting and breeding places

Wildlife populations are used often as indicators to judge the quality of the environment. The best way to maintain healthy upland populations is to insure that habitat is maintained and intensively managed to create diversity, which produces food and cover. In the case of lowland species and fish, it is vital to maintain their environments and to ensure they are not polluted with contaminants like pesticides and waste products. The question of how to safeguard productive farming and the wildlife that thrives when farmland is not overly saturated with pesticides is thus a critical one.

### ***Rare, Threatened and Endangered Species - Fauna***

The Massachusetts Division of Fisheries and Wildlife's Natural Heritage and Endangered Species Program has mapped areas of critical concern for threatened and endangered species within the Town of Hatfield. The animals that fall within this classification are identified in Table 7.

These species are dependent upon habitat provided by riparian and wetland resources as well as forest resources. There are over 5,000 acres that provide productive habitat for wildlife species in Hatfield, including forest, open waters, and wetland. Approximately 500 of these acres include areas that are priority sites for rare and endangered species. Preventing the extinction of these species is critical to maintaining biodiversity in the Pioneer Valley. A biologically diverse native ecosystem is important to ensure stability of all plant and animal species. In many instances, the elimination of one species leads to the demise of another or many others when such species cannot adapt to the reduction and change in their environment.

Most of the currently known rare animal species in Hatfield are associated with wetlands. A few, such as the Marbled Salamanders and Wood Turtles also use uplands for much of their lives including for foraging for food. The Marbled Salamanders breed in vernal pools in the fall and spend most of their time in surrounding uplands forests, under the leaves (as a result, they and their relatives are called "mole salamanders"). Wood Turtles spend time in streams and upland and riverside forests, but over-winter in the river (or stream) bank.

The Bald Eagles nest in old trees near water, along rivers and oxbows. The Least Bittern is a reclusive marsh bird, nesting in tall grassy marshes in backwaters with patches of open water where they hide their nests and raise their young in areas of little disturbance. Vesper Sparrows, on the other hand are species of upland grasslands, such as old fields and pastures. Although considered secure globally, they have declined significantly in eastern North America due to changes in agricultural land use.

Both groups of invertebrates, freshwater mussels and dragonflies, found in Hatfield, depend on the rivers and streams for habitat. The Mill River, particularly, provides exceptional habitat and needs to be maintained in the good condition it is in: Having four of the state's seven listed species of freshwater mussel in the town means that it is a hot spot for aquatic biodiversity. The abundance of rare dragonfly species, whose young spend several years in the sediments of streams and ponds (depending on the species), reinforces the importance of maintaining the aquatic conditions in Hatfield.

## **F. Scenic Resources and Unique Environments**

### ***Scenic Landscapes***

Hatfield abounds with landscapes that have much scenic value. The following landscape viewpoints have been identified to have particularly great scenic value, and efforts should be maintained to protect these areas:

- Open breath-taking vistas from wooded trails along the peak of Horse Mountain (in particular a location known locally as “White Rock”) that look over Hatfield toward Hadley and Amherst to the East, with views of the Holyoke Range to the south, and Mount Sugarloaf and Mt. Toby to the north;
- Similar but less expansive views at lower elevations seen from the northeast corner of Swift Plantation on Mountain Road, and points along Mountain Road as it descends to Pantry Road;
- Banks of Connecticut River, in particular the areas defined by public access points in the Bashin Beach area and along the dike from the Town center south and then west to the confluence of the Connecticut River with the Mill River;
- Canary Island beach in the Connecticut River near the Northampton Town line that is accessed from Little Neponsett Road.
- The Mill River itself, which has been identified as part of MA DCR’s “Commonwealth Connections, A Greenway Vision for Massachusetts”

### ***Major Characteristic or Unusual Geologic Features***

Some of the distinctive geologic features in Hatfield include the following which are described in detail in Section 4:

- Fertile Connecticut River and its floodplains
- Great Pond (remnants of an oxbow lake) and its associated marshes
- Horse Mountain and Chestnut Mountain
- The “Rocks” area of West Hatfield including some shallow lead mines used during the 1700 and 1800’s.
- Glacial outwash delta forming critical ground water recharge area for North Hatfield well.

### ***Cultural and Historic Areas***

Historic districts are commonly defined as areas possessing a concentration, linkage, or continuity of sites, buildings, or structures united historically or aesthetically whether by plan or spontaneous development. There are two types of designations of historic districts: National Register districts and districts designated locally.

A listing on the National Register of Historic Places, the nation’s official list of historic and cultural resources, provides properties with a degree of protection from federally funded projects or programs that could threaten or destroy historic character. Although National Register designation provides a high level of recognition and can qualify select property owners (commercial and rental property owners only) for certain beneficial tax credits or other preservation funding, it does not offer the same type of protection that a local historic district can provide. Hatfield has one single property listed on the National Register and eight nationally registered districts identified in Table 8.

Historic districts designated at the local level are those protected from major changes through the adoption and enforcement of a local historic preservation ordinance. Historic preservation ordinances are flexible tools that can facilitate preservation through a variety of means. They are often used to encourage a wide range of preservation activities in historic districts depending on local preservation goals. Many ordinances encourage preservation by regulating alterations to building facades, exterior building materials, exterior architectural detailing, and building mass. New construction in historic districts can be encouraged to complement the existing character through design that is sensitive in terms of size, style, and placement. Through the designation of a local historic district and adoption of an historic preservation ordinance, municipalities can accomplish many goals, including guiding alterations to privately owned historic buildings and delaying or preventing demolition of important resources.

<b>Table 8. National Register of Historic Districts and Places</b>		
<b>Name</b>	<b>Location</b>	<b>Date Registered</b>
Billings Way Tobacco Barn	Billings Way	7/27/1994
Bradstreet Historic District	Main Street and Bashin, Cronin Hill, Depot, Old Farms and Upper Farms Roads	7/17/1997
Elm Street Historic District	Elm, Sunset and Scotland Streets and Little Neponset Road	12/7/2000
Hatfield Center Historic District	Roughly bounded by the Connecticut and Mill Rivers and Day Avenue	7/27/1994
Mill-Prospect Street Historic District	Chestnut, Bridge and School Streets, Raymond Avenue and Prospect Court	10/22/2002
North Hatfield Historic District	155-166 Depot Road, 178 North Hatfield Road and 273-336 West Street	10/30/1997
Old Mill Site Historic District	48 and 50 Prospect Streets	6/2/1982
Upper Main Street Historic District	Main Street from 83 Main Street to Cow Bridge, 1-44 King Street and 6-70 North Street	7/22/1994
West Hatfield Historic District	3-12 Church Ave, 2 Linseed Road and 23-42 West Street	2/24/2005

### ***Areas of Critical Environmental Concern***

Hatfield has not yet nominated any areas within the Town for the state's Department of Environmental Management program for Areas of Critical Environmental Concern (ACEC). This program was established to provide recognition and add protection to areas of land possessing multiple environmental attributes, such as wildlife habitat, water

supply, rare species, historic resources, all of which combined to identify an area worthy of a higher level of protection. Some of the recent information gathered on the Mill River corridor and portions of West Hatfield suggest some portion of Hatfield may be worthy of consideration as part of this program.

## **G. Environmental Challenges**

Hatfield is blessed with an abundance of open space, with broad, flat agricultural fields and expanses of forested hill country. The observation of the 2003 OSRP that the Town was beginning to see a development threat on the horizon that was much greater than it had experienced before, remains as true in 2008 as it was then. Residential development has eaten into the Town's forested western sections, its southern and central agricultural areas and along its eastern flood plain. Hatfield is a latecomer to development on this scale. The Town can learn from the experience of comparable towns that have been built out, and not always with desirable results. In short there may be advantages to being a comparative latecomer, as Hatfield is, to fairly large scale development.

### ***Fragmentation***

The Town still has numerous large parcels of property still under the control of families or corporate entities that are now ripe for sub-division. For years those large parcels were under the stewardship of the owners as agricultural resources. However, as the importance of farming and forestry in the region diminishes, those lands are becoming economically attractive for their one-time developmental potential. Thus, both the open space for which Hatfield is noted, and the quality of wildlife and human life within its borders are put at risk.

While commercial enterprises such as crop cultivation and forestry kept large areas of the Town open, they also provided habitat and movement corridors for an abundance of wildlife. By way of contrast, subdivision and development of those formerly large parcels restrict both habitat and corridors, and at the same time make resource management far more difficult. Instead of one owner/manager, outreach to multiple owners is needed to get them to consider such factors in the disposition of their land. Utilization of existing tax reduction options such as 61A make it easier for large landholders to keep their holdings intact. Further, purchase of conservation restrictions through state programs would allow those owners the economic benefits that subdivision and development would have brought them and, at the same time, allow them to maintain ownership and stewardship of the property.

### ***Floodplain Development***

Hatfield enjoys a lengthy, seven mile shoreline along the Connecticut River. That shoreline also means a seven-mile-long flood plain as well. Increasingly the flood plain has been used for residential and commercial development. Such uses are allowed under current zoning bylaws on a case-by-case basis, allowing compensatory storage to be determined for limited areas each time. However, the cumulative effects of incremental

development of the flood plain should be assessed to determine if it is being adequately protected, avoiding a gradual compromise and loss of its protective benefit to the citizens of Hatfield. Development of the flood plain, even with restrictions, diminishes the resource's capability to sustain its function within the overall ecosystem. Construction of on-site wells and septic systems places demands on the resource that impair its primary role and makes the eventuality of contamination a virtual certainty.

Allowing development in federally delineated flood plain areas also puts lives and property at needless risk and endangers the Town government as well. In the event of a 100-year storm, developed residential property and the people who live there will be in the path of potential destruction. The Town could be held liable for damage to property and danger to people by allowing continued development and habitation, and the assumed safety that the official sanction implies, in what is a clearly precarious area. As part of its zoning overhaul in 2003, the Town adopted a Floodplain Overlay Zoning District to better regulate floodplain development for the protection of public health and safety and this critical habitat.

### ***Land Use and Residential Development Trends***

Hatfield's rich agricultural heritage kept much of the easily arable land under cultivation during the development boom of the 50s and 60s. At a time when flat, open areas were being developed into expanses of acre-or-more building lots for hundreds of small ranch style homes, the commercial value of the land in Hatfield as an agricultural resource minimized the pressure for development of the land for other uses. However, current economic trends that have diminished the importance of farming in the Pioneer Valley are increasing the development pressure on the open space Hatfield is so widely known for. At the same time a new residential aesthetic also has come into play, with homes built within the environment, rather than clustered together in subdivisions, becoming among the most desirable in the high priced housing market. The market is demanding large homes with great expanses of lawn on previously forested land. The continued fragmentation of forests and the disruption of wildlife has a compounding negative effect on the ecosystem overall.

Land that was once thought of as unusable except for certain non-residential uses, such as forestry, is now seen as an ideal location for certain housing. But, construction on such property brings with it the loss of areas that were formerly considered *de facto* areas of undevelopable open space. Clear cutting of forests for lawns and open construction areas, long access roads cut through primeval forests, destruction of wetland resources and incidental mining in order to make land meet current building codes all have disastrous consequences on the environment. The zoning overhaul package of 2003 provided the town with better site plan review ability to properly manage growth in these areas.

Market pressures that do not factor in the environmental consequences of development can result in unbalanced development that does not serve the best long-term interests of the Town. Education and the voluntary compliance with best use practices will need to

work hand in hand with the improved land use controls and policies. It is incumbent on the Town to empower the land use boards to become the purveyors of best use practices in a well-coordinated process, rather than reactors to inappropriate use. It would be highly desirable, therefore, if all of Hatfield's land use boards were to create a common vision of, and a regulatory process for the promotion of the long-term goals of the Town.



## **SECTION 5 – INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST**

### **A. Conservation Land**

#### ***1. Watershed lands***

##### **a. Hatfield**

In northwest Hatfield off of Mountain, Rocks, and Reservoir Roads the Town of Hatfield and the Water Department own approximately 529 acres on which is located the Town reservoir, two wells and surrounding watershed, including some of Northampton's Mountain Road Reservoir watershed. The Water Department oversees management of the land. It has recently been protected in perpetuity by the sale of a conservation restriction on the entire parcel to the state.

The Running Gutter watershed and the Zone II to both of the town wells are part of a Water Supply Protection Zoning District which provides greater protection and restriction on land uses within these critical recharge areas. Adjacent land is zoned agricultural/ residential with a minimum lot size of 60,000 sq. ft.. Currently the area serves as an important wildlife habitat. The dirt roads are ideal for passive recreation (hiking, skiing, horseback riding) in all seasons.

##### **b. Northampton**

In the most northwest corner of Town, the Northampton Water Commission owns approximately 90 acres as a watershed area for its Mountain Road. Reservoir. The same watershed zoning and adjacent zoning applies here as with the Hatfield Reservoir. This area serves only wildlife as recreational use is strictly prohibited.

#### ***2. Chapter 61 Lands***

There is a considerable amount of land in Hatfield (total 2,809.34 acres) on which private owners have chosen to avail themselves of the tax savings inherent in the Chapter 61 Programs in exchange for agreeing to keep their land for agricultural, managed forest, or recreational purposes for varying periods of time. The greatest volume of this land is primarily east of I 91 in the flat, agricultural lands which are the most vulnerable to development. A lot of this land is also in the floodplain, which affords an additional constraint on building. However there are also a significant number of acres west of I 91 in the hilly part of Town that is under Chapter 61 protection as forest, agricultural and recreation land. In West Hatfield, when you add to the Chapter land the amount of municipally owned land and the constraints to development inherent in the terrain, it is arguable that this part of Town is more protected than the eastern half.

<b>Table 9. Chapter 61 Program Lands</b>		
<b>Program</b>	<b>Acres</b>	<b>Number of Owners</b>
Chapter 61	275.35	7
Chapter 61A	2,062.53	54
Chapter 61B	471.46	18

### **3. Other Protected Lands**

Other protected lands in Hatfield include private properties under State programs, such as the Agricultural Preservation Restriction (APR) Program, or private conservation restrictions.

#### **a. APR Properties**

In the eastern, agricultural zone, there are only two APR properties, which are owned by two farm families totaling 258.91 acres.

#### **b. Other private conservation restrictions**

In the western part of Town one privately owned 71.06-acre parcel is permanently protected under the Forest Legacy Program.

#### **c. The Cahillane Conservation Area**

This is a small, 2.8-acre parcel on the banks of the Connecticut River in the southern tip of Hatfield. It is protected in perpetuity and owned by Valley Land Fund.

### **B. Recreation Land**

**State Boat Ramp:** The Commonwealth of Massachusetts owns 5.7± acres near Kellogg Hill Rd. for use as a public boat ramp. This ramp serves as one of the few access points to the river from the west bank in this area. Parking is provided and regional as well as local users use this area in the three seasons. The parcel is large enough to accommodate further picnic or recreational facilities.

**Trustee of Smith Academy Land:** In the center of Town on the corner of School and Main Streets, the Trustees of Smith Academy own a 1± acres parcel, which is used as a low intensity Town park. While adequately maintained it has no amenities and suggestions have been increasing around Town that it be improved and made more inviting for residents to use for passive recreation.

**Lions Club Pavilion:** An outdoor covered pavilion on the grounds of the Hatfield Elementary School services various private and community groups for barbecues, dance

festivals and celebrations. It is rustic but adequate for its use in good weather and has restroom facilities.

**Hatfield Elementary School Grounds:** There are two soccer fields and two baseball/softball fields behind the new school. There are also two playgrounds on school grounds: one for preschool and kindergarten age children and second for older elementary school children.

**Smith Academy Fields:** The 38 ± acres around Smith Academy, the Town's public High School, offer the opportunity for field recreational sports. There are 2 baseball diamonds, 2 softball fields, 1 soccer field, and 1 outdoor basketball court. While most heavily used by the school system, which manages the areas, other groups may use the field with permission from the school committee. In the summer the Recreation Department uses the fields for summer programming. There is undeveloped land available in this tract for field expansion if the need arises.

**Former Center School Grounds:** The fields around the former Center School in the center of town offer additional opportunity for field sports. This 6± acres parcel, owned and managed by the Town, has a baseball and softball diamond, and a field hockey field. Formerly not fully utilized, it is already being used more heavily this summer in response to the loss of the playing fields that the construction of the new elementary school entailed. This use may increase, necessitating some improvements to the area. The area also connects with the dike and thus is contiguous with the river. The portion that is contiguous to the river is underutilized and, as such, constitutes one of the most promising areas for the expansion of outdoor recreational facilities.

**Bashin Beach:** Owned by the Commonwealth of Massachusetts as part of the Connecticut River Greenway, this beach and swimming area has few amenities but is an important recreational facility in Hatfield. This area is not maintained and shows evidence of litter and the lack of sanitary facilities. Given its lack of development, it is not particularly safe or attractive as a swimming area and does not meet the outdoor recreational needs of many Hatfield families.

## **SECTION 6: COMMUNITY VISIONS**

### **A. Description of Process**

A community visioning session was held on November 15, 2007 at Hatfield Town Hall. Notice of the meeting was posted in a press release to the local newspapers, posted at town hall, and emailed to the board chairs and department heads for all boards, departments and committees within Hatfield. Although not well attended, the session was extremely useful in identifying the qualities and characteristics that people love about Hatfield and conflicts and issues that exist with some of them. Many who were not able to attend the session submitted their thoughts by email to the committee. Additionally, the posting invited any interested to attend any of the upcoming Open Space Committee meetings to participate in the process.

On May 27, 2008, a second visioning session was held at Town Hall after public issuance of the Draft Open Space and Recreation Plan. Following the meeting Scott Jackson from University of Massachusetts at Amherst gave a presentation entitled “Future Options for the Hatfield Dam: Environmental Costs and Benefits”. The presentation focused on the recently completed dam removal feasibility study performed for the Hatfield Dam (or Advocate Dam) located on the Mill River.

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

Since publishing the 2003 Open Space and Recreation Plan, all evidence suggests the strong continuity of both the goals and the concerns of the inhabitants of the Town of Hatfield. The message repeated most often was while Hatfield enjoys a wide range of available open spaces but the pressures of change are great. The inexorable spread of residential and industrial development linked with rising land values, threatens to consume many areas of open space and to transform the nature of the Town. Thus, the goals for open space and recreation are the same today as they were in the 2003 plan and 1989 *Conservation and Recreation Plan for the Town of Hatfield*.

The three most valued features of the Town continue to be its rural character, open space, and working farms. All recognize that growth is inevitable but want it to be carried out in a manner respectful of the community’s character. The Town’s adoption of the zoning overhaul in 2003 supports this conclusion. With the tools now available to land use permitting boards and departments through zoning requirements, it is important that they are properly and consistently applied. Training for town boards is needed on a regular basis to ensure a thorough understanding of the laws the community has enacted to guide its development.

Existing formal recreational facilities in Hatfield are showing signs of overcrowding and, in some cases, are in need of upgrading. The construction of the new Elementary School caused the elimination of playing fields. The town currently owns a lot of land in the Running Gutter watershed that is well suited for hiking and mountain biking. Critical to the long-term success of such uses is proper management and control of unauthorized

uses that may be detrimental to watershed protection. Similarly formalized access to the Mill River and Great Pond would greatly increase the Town's recreational value.

## **SECTION 7 – ANALYSIS OF NEEDS**

### **A. Summary of Resource Protection Needs**

Protection of the watershed is of critical importance for maintaining the integrity of Hatfield's water supply. The Town has made significant strides in assuring that water quality in Running Gutter Brook is not jeopardized. Protection of the remaining undeveloped land within the watershed to Running Gutter Brook is important. Likewise, undeveloped land within the primary recharge area for the town's two wells needs to be protected also.

More broadly, the preservation of the character of both the natural and built landscape of the cultural and historical areas of Hatfield, will serve to meet resource and open space and recreational needs of the Town's inhabitants. Thus, for example, the conservation of watercourses as habitat for fish, birds and other wildlife, is of concern not just for the straightforward purpose of achieving such things as species protection and flood control, but also because it meets the recreational and open space needs of hunters, fisherman and hikers, on one side, and the aesthetic pleasures that such landscapes afford, on the other.

Although there are no State designated scenic roads in Hatfield, there are many roads cherished for their bucolic views and rural charm. Although it has been suspected at several meetings of the Open Space Committee that some town roads had been officially designated as scenic local roads, documentation of this was unavailable. Therefore, confirmation of local designation of scenic roads needs to be performed for Rocks Road, Old Stage Road, Straits Road and Pantry Road. Town designation of scenic road status should be taken into consideration during the review of proposals for development in these areas.

To assist the Open Space Committee in determining a prioritization matrix for resource protection, they developed primary and secondary conservation values. These conservation priority values are described in Table 10 and were considered when developing the Five Year Action Plan in Section 9. When prioritizing land for protection, the more developable a parcel is, the more threatened it is considered to be. This needs to be taken into consideration in addition to a parcel's conservation values when prioritizing land for protection. Road frontage and availability of sewer are the two primary factors affecting a parcel's readiness for development in addition to its conformance with the underlying zoning code(s).

**Table 10 Action Plan Matrix of Conservation Priorities**

<b>CONSERVATION PRIORITIES – PRIMARY VALUES</b>	
<i>Primary Values: These values can be determined based on existing data and identified priority areas.</i>	
<b>Public Water Supply</b>	Land within the Zone II primary recharge area for either of the town wells and / or in the watershed to Running Gutter Reservoir.
<b>Rare and Endangered Species</b>	Land identified by NHESP as supporting rare and/or endangered species including Priority and Estimated Habitats and Certified and Potential Vernal Pools.
<b>Floodplain</b>	Includes the FEMA 100- and 500-year flood plain and wetlands as mapped by Paul Davis for the Town of Hatfield.
<b>Working Farms</b>	Farmland enrolled in Chapter 61A or other land that is actively farmed. Includes land mapped as Prime Agricultural Soil by the USDA.
<b>Forests</b>	Includes NHESP mapped “Forested 1830s and 1999” lands and other NHESP recognized Natural Communities of significance including transitional floodplain forest, major river floodplain forest, small-river and high terrace floodplain forest, and black gum-pin oak-swamp white oak perched swamp.
<b>CONSERVATION PRIORITIES – SUPPORTING VALUES</b>	
<i>Supporting Values: These values tend to be more subjective and are best discussed and defined at the town level. These values, which will rarely be the sole or primary purpose for protecting a piece of land, are important considerations when combined with the primary values.</i>	
<b>Scenic Landscapes</b>	Contains extraordinary scenic features of regional or statewide renown.
<b>Recreation</b>	Land has recreational value of regional significance because of its location, proximity, size or physical features.
<b>Historic / Cultural</b>	Identified as a priority by the national historic registry, Mass Historic or eligible for one of these designations as determined by local historic commission.
<b>Community Character</b>	Land is critical to character and way of life in community.

## **B. Summary of Community Needs**

As the Town recognizes that development will continue, it wishes also to ensure that such change takes place without eroding the quality of life associated with its recreational and open spaces. Citizens of Hatfield wish to pass on to future generations an inheritance that preserves the best of its natural and constructed environments.

## **C. Management Needs and Potential Changes of Use**

From the perspective of recreational use, many lands valuable for habitat and watershed protection can also serve the public as resources for passive recreation. The Town needs to consider how best meet both of these needs through a process that addresses not only conservation but management of these resources. There has been some concern over the management and timber cutting practices employed in the Running Gutter watershed. These practices need to be re-evaluated for consideration not only regarding a short-term, single cut timber harvest but for the long-term sustainable harvest of timber that is consistent with maintaining a healthy forest ecosystem and recreational value.

The zoning overhaul in 2003 provided the town with regulatory tools to guide development so that it occurs within a manner that is protective of resource considerations while still providing ample opportunity for growth. Many of the newly adopted bylaws include performance standards or other design criteria that project proponents are required to meet. It is critical that land use boards understand these tools fully and apply them to all projects during the permitting process. Training about the role of zoning and how to use performance standards as part of the permitting process for all land use boards and other permitting departments is recommended.

In 2006, The Town of Hatfield adopted the Community Preservation Act (CPA) at its maximum surcharge of 3%. Adoption of the CPA enabled the creation of the CPA Fund and the Community Preservation Committee to oversee disbursement of those funds



## **SECTION 8 – GOALS AND OBJECTIVES**

### **Goal A: Protect Community Character**

#### **Objectives:**

- Secure long-term protection of scenic landscapes and vistas.
- Support the protection and restoration of historic buildings and places.

### **Goal B: Protect Farmland**

#### **Objectives:**

- Promote the town's agricultural economy.
- Promote farmland protection opportunities for all landowners
- Offer technical assistance to landowners to implement protection strategies

### **Goal C: Protect Wetlands and Floodplains**

#### **Objectives:**

- Prevent residential and non-agricultural development from occurring in the floodplains to ensure adequate flood storage capacity and prevent public hazards.
- Promote land protection tools and strategies
- Offer technical assistance to landowners to implement protection strategies

### **Goal D: Protect Water Supply**

#### **Objectives:**

- Prevent the contamination of groundwater and surface water drinking supplies through education and outreach about high-risk landuses and practices.
- Permanently protect open space within the primary recharge areas to the Omasta and West Hatfield Wells and Running Gutter Reservoir watershed.

### **Goal E: Protect Woodlands**

#### **Objectives:**

- Identify and protect important forested wildlife corridors and other woodland habitat.
- Support sustainable forestry practices on private and town-owned lands to ensure healthy forest ecosystems and prevent down gradient erosion and flooding.
- Promote appropriate recreational use of town-owned forest land.

### **Goal F: Provision of Adequate Recreation Spaces**

#### **Objectives:**

- Establish new recreational opportunities and facilities for picnicking and social events, ice skating, bicycling, passive water craft use, and hiking.
- Expand and improve existing recreational facilities such as playing fields, tennis courts and playgrounds.
- Better delineate and enforce areas for motorized recreational use versus non-motorized uses.

### **Goal A. Protect Community Character**

Each of the other five goals identified in this section in some way contributes to the character of the community that is greatly loved by Hatfield residents and admired by its neighbors. Community character is not only the scenic landscapes and vistas of a place but its history as told through the buildings and places from which the town was established. This history pre-dates 1670 when the town was formerly incorporated to include Native American inhabitants and the archeologic evidence of their presence in the Connecticut River valley. For many of the same reasons that Native Americans and the early settlers choose to call Hatfield their home, so is true today of the fertile floodplain fields, a clean and abundant water supply and forested hillsides for wildlife and recreation. It is the union of all of these values and their continuation over time that has given Hatfield its character or sense of place. It is the goal of this plan that this character shall be preserved for future generations.

### **Goal B. Protect Farmland**

The Town of Hatfield is at a turning point in which it must act aggressively to maintain its identity as a small, beautiful, agricultural community in the face of increasing regional growth and development pressures. The community strongly identifies with its agricultural heritage and wants to see farming continue as a central part of the Town's economic life. While the quantifiable loss of farms and farmland in Hatfield is modest, the trend is not positive. Excluding forestland, the total loss of farmland in the Town between 1971 and 1997 was about 220 acres, or 5.7 percent. Continuing pressure in the real estate market for larger lot home sites close to I-91, along with the educational, cultural, and economic amenities of communities like Amherst and Northampton, could easily tip the balance against Hatfield's working farm landscapes.

Hatfield needs to assist farmers who wish to protect their land from future development as well as find ways to promote the Town's agricultural economy. Hatfield also needs to encourage farmers to enroll in the state's Agricultural Preservation Restriction Program or seek other long-term conservation restrictions with potential state, federal or non-profit conservation agencies.

### **Goal C. Protect Wetlands and Floodplains**

Wetlands serve many purposes: they absorb floodwater and runoff, filter pollutants from water, provide natural habitat for more wildlife species than any other land type, and serve as ground water recharge areas. There are a number of wetland types found in Hatfield including portions of the Mill River up gradient of the Hatfield Dam at Prospect Street, and Great Pond that is an old oxbow meander scar of the Connecticut River. Other wetland habitats in Hatfield include some abandoned farm fields with hydric soils and drained beaver meadows.

There is a greater abundance of wooded wetlands than any other wetland type in Hatfield. These are primarily associated with the Connecticut River and Mill River floodplains, as

well as significant expanses west of the “Rocks” area, associated with Running Gutter Brook and its tributaries.

Extensive areas of floodplain, both wooded areas and open fields, border on the Connecticut and Mill Rivers. These areas may be part of other wetlands, or may be part of upland areas. Regardless, their ability to temporarily store floodwaters needs to be protected as a common benefit to all residents of Hatfield, as well as down gradient neighbors.

Isolated wetlands are any of the above wetland types that are separated from other wetlands, and do not have any surface water connection. These wetlands, however, can provide much the same functions and values of the other wetlands systems, and can even have important wildlife habitat characteristics. As of 2007, there were 13 Certified Vernal Pools in Hatfield. However, there are potentially dozens more that need to be certified to better protect these resources.

#### **Goal D. Protect Water Supply**

Public drinking water in Hatfield is provided by two wells (West Hatfield and Omasta Wells) and Running Gutter Reservoir in West Hatfield. The primary recharge area to these wells is called the Zone II and has been delineated. In addition, some private water supply wells draw ground water for domestic use or landscape irrigation. Contamination threats to both surface and groundwater supplies exist in many forms— road salt, septic systems, pesticides, herbicides, fertilizers, gasoline, and industrial by-products. Hatfield has had at least one instance of private well contamination from pesticides in the Mountain Road area. Likewise, recharge to these areas, particularly the two wells is also as important. Large expanses of impervious surfaces such as roads and buildings prevent rainwater from soaking into the ground and recharging the aquifer. Abundant clean recharge is critical to the health of both surface and groundwater supplies.

#### **Goal E. Protect Woodlands**

The wooded areas of Hatfield are extensive and provide many benefits to the Town. Forest resources in Hatfield lie primarily west of the I-91 corridor. They encompass approximately 4,800 acres, which consists of 45 percent of the total land area in the Town. There has been a slight decline of 75 acres, or 2 percent, in forested cover since 1985. The residential development that has occurred recently along Linseed Road and Mountain Road accounts for some of this land conversion.

Hatfield is in the enviable position of having significant forest resources in West Hatfield. Protection of these lands is critical for the diversity of wildlife that rely on them such as bears, coyotes, deer, bobcat, grouse, turkey, woodpeckers, squirrels, porcupines, and deep wood songbirds such as wood thrush, scarlet tanager, and veery.

The value of the forest resources to the community extends beyond lumbering and sale of Class I Prime forest species. Trees not harvested for their commercial application provide

flood mitigation and protect the water quality of Running Gutter Reservoir by acting as a filter. Protecting this supply will be crucial to the future commercial and residential growth of the Town. Continued deforestation within the water supply recharge area could result in pollution of the supply as oil, fertilizers, and other chemicals are rapidly washed off developed areas to surface waters. Without forested areas, floodwaters from heavy storms would run off more rapidly, raising flood waters and assuring more property and crop damage. Other environmental impacts such as air quality degradation, reduction of visual buffers from adjacent uses, and elimination of habitat could ensue as well.

Deforested hillsides can also impact down-gradient properties as the rapid runoff causes erosion of stream banks and hillsides, sending sediment downstream and potentially causing greater damage to homes and businesses during major storm events. Erosion causes streams and rivers to fill with silt, resulting in oxygen deprivation to water plants and animal species. Finally, the loss of significant forested areas will visually alter the character of the community

#### **Goal F. Provide Adequate Recreational Spaces**

The playing fields at Smith Academy and behind the old Center Street School serve Hatfield's youth well. There are growing needs, however, for additional fields either on school grounds or other town properties. Two playgrounds exist at the new Elementary School but there are no other places for small children to play. With the great expanses of forested land and dirt roads in the Running Gutter watershed, there are many opportunities for hiking and mountain biking. These opportunities exist on many dirt roads particularly around Great Pond and the agricultural areas along the Connecticut River. However, much of this land is either privately owned or owned by the Town for the sole purpose of watershed protection.

The Town needs to assess all of the areas that are currently available for passive recreation and work with property owners to develop a management scheme that would be acceptable to all. Likewise, the conflict between motorized recreational use and non-motorized use needs to be addressed, particularly on watershed land.

The following table is a summary of the status of the Five-Year Action Plan from the 2003 Hatfield Open Space and Recreation Plan. This table is being provided to summarize the long list of accomplishments achieved by the Town toward its goals of protection open space and providing recreational opportunities.

Action	2003 Plan Timeline	Current Status
<b>A. Farmlands</b>		
Change Zoning by laws so they will support farmland protection.	2003	Adopted 2003 – Riverfront Overlay Zoning District
Establish an agricultural zone in which residential development will be less favored.	2003	Adopted 2003 – see above
Establish a "conservation-development" option that, through clustering, will protect open space and, in some cases, farmland.	2003	Adopted 2003 – Open Space Development Zoning Bylaw
Encourage and promote the boards and actions that the town implemented to support farming and protect farmland.	2003-2008	Completed – established Industrial Development Committee and Open Space Committee
Commence initiatives such as a TDR program that will either result in the direct protection of farmland and open space or the allocation of funding to the Conservation Fund for land protection efforts.	2004	Adopted 2003 – Transfer of Development Rights Zoning Bylaw
Propose the adoption of the Community Preservation Act fund in Hatfield to provide additional funding for farmland and open space protection.	2005	Adopted Fall 2006 at 3% surcharge
Continue liaison with state agencies that are studying the proposed bridge across the Connecticut River, as well as with surrounding communities that may be affected, and take any action within the Town or vis-à-vis our state representatives that would prevent the destruction of farmland that such a bridge would entail.	2003-2008	State rejected new bridge as a preferred alternative and re-constructed the Coolidge Bridge and Route 9 in Northampton.
<b>B. Wetlands and Floodplain</b>		
Transfer Town wetland map onto assessor's maps as a tool to advise	2003	Completed

existing or prospective property owners of the potential presence of protected wetland resources on their parcel.		
Certify vernal pools within the Rocks and Horse Mountain areas. Add such areas to the assessor's maps to advise existing or prospective property owners of the presence of protected wetland resources on their parcel.	2003-2005	Certified over 10 vernal pools
Adopt additional floodplain protection measures relative to human health and safety to avoid isolated development surrounded by floodplain.	2004	Adopted 2003 – Adopted Floodplain Protection Overlay District
Continue to aggressively protect wetland resources throughout the Town of Hatfield.	2003-2008	2003 – Adopted wetland overlay developed by Paul Davis
Identify critical sections of wetland resources along the Mill River, Running Gutter Brook, and Cow Bridge Brook Corridors and seek long-term protections of these areas through acquisition, deed restriction, or other mechanisms.	2003-2008	Applied for Self-Help Grant – not funded
Recognizing the potential cumulative loss of important flood storage areas due to the incremental development of floodplain, the Town, through the Conservation Commission and Planning Board, should seek additional protections of this critical area to avoid the gradual loss of its protective benefit to the citizens of Hatfield.	2003-2008	Adopted 2003 – Adopted Floodplain Protection Overlay District and Riverfront Overlay District
<b>C. Water Supply</b>		
Finalize the purchase and/or acquisition of Conservation Restrictions for critical agricultural and wooded parcels in the watershed to reservoir.	2003	Acquired numerous parcels
Identify additional key parcels in watershed to reservoir or immediate infiltration zones near public water supply wells for purchase and	2004	Completed

pursue acquisition.		
Attempt to find grant money to pay for the costs of transferring ownership of “owner unknown” parcels (207-27, 210-15, 210-16) to the Town of Hatfield.	2005-2008	Completed
<b>D. Woodlands</b>		
Work with the Valley Land Fund and other private land trusts to further land acquisition projects in Hatfield.	2003-2008	On-going
Establish liaison between forest landowners and various funding agencies that have targeted portions of Hatfield as priority for conservation such as the Division of Fisheries and Wildlife, the Natural Heritage Endangered Species Program (NHESP) and The Nature Conservancy.	2003-2008	On-going
Work with the Greater Mill River Coalition to apply to Hatfield their newly created database with the goal of correlating parcel data with the distribution of natural resources such as wetlands, vernal pools, water supply and endangered species. This will help to prioritize parcels for land preservation as well as to create links to funding agencies interested in certain issues such as NHESP,	2003-2008	Completed
Seek adoption and implementation of the open space related sections of the proposed zoning by-laws recommended by the Master Plan Committee, including the Open Space Development By-Law and the Transfer of Development Rights By-Law.	2003-2005	Completed
Evaluate and pursue, as appropriate, the discontinuance (by Board of selectmen) or abandonment (Town Meeting) of undeveloped legal roads in West Hatfield, the development of which will encroach on the forested area of the Town as well as threaten wetlands and the watershed (e.g., all or parts of Rocks Road, Mountain Road, Chestnut Mountain Road, Reservoir Road) The Surface Water Protection Plan prepared by PVPC and the Hatfield Water Department for the Massachusetts Dept. of Environmental Protection made similar recommendations recently.	2003-2005	Signs posted for discontinuance of maintenance on some roads
<b>E. Zoning Bylaws</b>		

A complete revision of the Town's Zoning Map and the revision of districts. It includes the creation of an Agricultural District that limits development to single family housing and agricultural uses within that district. The flood plain overlay district is expanded and additional development restrictions are in place for projects in the flood plain. A rural residential district is created to replace the previous Agricultural/Residential District B.	2003-2004	Completed
A complete revision of the Dimensional Tables to encourage more intensive development in areas where Town services and development already exist and to discourage development most suitable for agricultural use or for open space preservation. This is accomplished through relaxed coverage requirements for commercial and multi-family residential projects.	2003-2004	Completed
Refinement of the special permit and site plan review process to strengthen the Planning Board's ability to require property owners to adhere to land management practices that preserve the environment.	2003-2004	Adopted 2003 – Special Permits, Site Plan Approval and Site Plan Review
The establishment of performance standards for commercial and industrial projects affecting noise, landscaping, lighting, parking, traffic circulation, and other factors that have a negative impact upon the surrounding property.	2003-2004	Adopted 2003 – Commercial Development Performance Standards, Industrial Development Performance Standards, Planned Business and Industrial Development, and Major Development Review
Creation of an Open Space Development by law that encourages the preservation of large tracts of open land by allowing more intensive development and shared services on a portion of the property.	2003-2004	Adopted 2003 – Open Space Development Zoning Bylaw
Enacting of a Transfer of Development Rights By law that provides an incentive to develop projects in the Business and Industrial District more intensively while placing development restrictions on property in non-commercial districts.	2003-2004	Adopted 2003 – Transfer of Development Rights Zoning Bylaw



The creation of an In-Fill By law that allows development on in-fill parcels in areas already developed to relieve demand pressures on undeveloped outlying areas without Town services.	2003-2004	Adopted 2003 – Mixed Use Development Zoning Bylaw and Transfer of Development Zoning Bylaw
<b>F. Recreation</b>		
Investigate and promote the establishment of a Town swimming area on Town land that could be used by both adults and children.	2003-2006	Joined Tri-Town Beach Association
Create a Town ice skating area in addition to the small one occasionally created by the flooding of the basketball court at the Dare Center.	2003-2006	Preliminary feasibility investigated
Post signs designating sensitive areas where no recreation motorized vehicles are allowed (for example, the Connecticut River dike), and encourage enforcement in those areas. Encourage strict penalizing of those using recreational vehicles in the streets, except when legal, and especially when minors are involved. Study the feasibility of fines for vehicle users who are riding in prohibited areas. Study the feasibility of a ban on snowmobile use after 10 pm, and of stiff penalties for those riding across private land without landowner's permission.	2003-2005	Signs added to watershed land
Establish a new children's playground, perhaps by combining it with the proposal for a Town picnic area behind the regional library [see section I (b) above].	2003-2006	Completed – new elementary school constructed
<b>G. Implementation of Open Space Plan</b>		
Pursue the establishment of the Open Space Committee as a permanent Town committee, working closely with the Conservation Commission and other Town boards with overlapping functions. Its job will be to update the Open Space and Recreation Plan from time to time as needed so that Hatfield never loses eligibility for state funding under Self-help or other sources. Its mission will also be to follow-up the recommendations made in the 2002 update and to insure that they are implemented.	2003+	Completed

## SECTION 9 – FIVE-YEAR ACTION PLAN 2008-2013

The Town of Hatfield's Open Space Committee has identified the following Five-Year Action Plan to meet the town's goals and objectives for open space and recreation. A responsible board or committee has been identified for each of the actions as well as a prioritization scheme based on the recommended year of implementation.

ACTION	RESPONSIBLE PARTY	YEAR	FUNDING SOURCES
<b>Goal A Protect Community Character</b>			
Improve GIS capacity and natural resource data layers for use by town departments for resource protection planning	Board of Selectmen Assessors Office	2008-2010	PVPC Local Technical Assistance
Consult with other town boards about taking advantage of resource planning tools including zoning bylaws	Planning Board Open Space Committee Board of Selectmen	2008-2013	Citizen Planner Training Collaborative - UMASS
Identify Native American sites	Historical Commission Open Space Committee	2008-2013	
Investigate feasibility of creating a Demolition Delay Bylaw for historical structures	Historical Commission Planning Board	2010-2012	
Perform Heritage Landscape Survey	Open Space Committee Historical Commission	2012-2013	
Continue to promote listing of sites on National Register of Historic Places	Historical Commission	2008-2013	
Identify roads previously designated at the local level as Scenic Roads	Board of Selectmen Department of Public Roads	2009	
Prioritize locally designated scenic roads for protection	Planning Board Open Space Committee	2009-2013	
<b>Goal B Protect Farmland</b>			
Perform outreach to farmland owners about opportunities and strategies for long-term land protection	Open Space Committee Agricultural Advisory Committee	2008-2013	
Identify high value parcels at risk for development	Open Space Committee Agricultural Advisory Committee	2008-2013	

Acquire restrictions (conservation or agricultural preservation) high value parcels at risk for development	Town Meeting Agricultural Advisory Committee Community Preservation Committee	2009-2013	DCS Self Help Funds (LAND Grant Program) Land and Water Conservation Fund DCS Conservation Partnership Grant Community Preservation Act Funds U.S. Fish and Wildlife Service, Conte Refuge MA Dept. Agricultural Resources (APR)
<b>Goal C Protect Wetlands and Floodplains</b>			
Certify Potential Vernal Pools	Open Space Committee Conservation Commission	2008-2013	
Advocate for the protection and restoration of the Hatfield Dam	Board of Selectmen Open Space Committee Conservation Commission Historical Commission	2008-2013	
Provide training to land use boards about zoning bylaws and tools for resource protection	Planning Board Open Space Committee Board of Selectmen	2008-2013	Citizen Planner Training Collaborative – UMASS MA Conservation Commissions
<b>Goal D Protect Water Supply</b>			
Prioritize and acquire land within the Running Gutter watershed or other permanent conservation restriction	Board of Selectmen Open Space Committee Department of Public Works Community Preservation Committee	2009-2013	DCS Self Help Funds (LAND Grant Program) Land and Water Conservation Fund DCS Conservation Partnership Grant DEP Drinking Water Supply Protection Grants Community Preservation Act Funds
Prioritize and acquire land within the Town Well's Zone II or other permanent conservation restriction	Board of Selectmen Open Space Committee Department of Public Works Community Preservation Committee	2009-2013	DCS Self Help Funds (LAND Grant Program) Land and Water Conservation Fund DCS Conservation Partnership Grant DEP Drinking Water Supply Protection Grants Community Preservation Act Funds
Seek Tax Tile Taking on remaining "Owner Unknown" parcels in Running Gutter watershed	Assessors Office Board of Selectmen	2009-2010	

Approach Valley Land Fund about purchase of parcel in Running Gutter watershed	Department of Public Works Open Space Committee Community Preservation Committee	2009-2010	Community Preservation Act Fund
<b>Goal E Protect Woodlands</b>			
Acquire forestlands within the Running Gutter watershed or other permanent conservation restriction	Board of Selectmen Department of Public Works Community Preservation Committee	2008-2013	DCS Self Help Funds (LAND Grant Program) Land and Water Conservation Fund Community Preservation Act Fund
Develop signage for watershed to inform people about appropriate uses of watershed land	Department of Public Works Open Space Committee	2008-2009	
Identify unprotected forested land along Mill and Connecticut River corridors and other priority areas	Open Space Committee	2008-2013	
Perform outreach to forestland property owners about sustainable forestry practices and options for the long-term protection of their land	Open Space Committee	2008-2013	
Seek preservation of a wildlife corridor between Hatfield and Northampton in the Fitzgerald Lake Conservation Area.	Broad Brook Coalition Open Space Committee	2010-2013	DCS Self Help Funds (LAND Grant Program)
Implement better forest management practices to retain recreational value of land and sustainable forest ecosystem	Board of Selectmen Department of Public Works Community Preservation Committee	2009-2013	Community Preservation Act Fund
<b>Goal F Provide Adequate Recreational Spaces</b>			
Work with Smith Academy to redesign layout of school grounds for building new playing fields and a tennis court.	Recreation Committee School Committee Open Space Committee Community Preservation Committee	2008-2013	Land and Water Conservation Fund (National Park Service) DCS Self Help Funds (LAND Grant Program) Community Preservation Act Funds
Utilize the student design services of the Conway School of Landscape Design or UMASS to design a system of trails and a management plan for the town-owned Running Gutter watershed land.	Open Space Committee Conservation Commission Community Preservation Committee	2009-2010	Community Preservation Act Funds
Work with MA Department of Conservation and Recreation to provide better management of Bashin Beach	Recreation Committee Open Space Committee	2008	

including trash collection.			
Develop a management plan for motorized recreational use on town-owned watershed land.	Department of Public Works Open Space Committee Conservation Commission Community Preservation Committee	2008-2013	Community Preservation Act Funds
Work with property owners to establish low impact access and parking to the Mill River and Great Pond.	Recreation Committee Open Space Committee Community Preservation Committee	2008-2009	Community Preservation Act Funds
Perform a feasibility study for unused land on the capped landfill at the Town's transfer station playing fields.	Recreation Committee Community Preservation Committee	2009-2013	DCS Self Help Funds (LAND Grant Program) Community Preservation Act Funds
Perform feasibility study for bike path from Damon Road in Northampton to Hatfield.	Recreation Committee Board of Selectmen	2011-2013	DCS Self Help Funds (LAND Grant Program)
Enhance pedestrian access and use of dike along Connecticut River	Recreation Committee Open Space Committee	2009-2010	
Promote establishment of sidewalks along new and existing roads and establishment of bike lanes where possible	Planning Board Recreation Committee Board of Selectmen Department of Public Works	2009-2013	

## **SECTION 10 – PUBLIC COMMENTS**

## **SECTION 11 - REFERENCES**

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3. Pioneer Valley Planning Commission – <http://www.pvpc.org/>.
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5. Hatfield Conservation and Recreation Plan – 1989. (Referred to throughout this document as the 1989 Hatfield Open Space and Recreation Plan)
6. Hatfield's Master Plan for the Twenty-First Century, January 2001.
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14. “Developing a Regional Wellhead Protection Program” 1994 report.
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17. National Register of Historic Places.
18. The Hatfield Historic Commission.
19. Commonwealth Connections: A Greenway Vision for Massachusetts. Department of Environmental Management.
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