



# Town of Hanover, Massachusetts

## Open Space and Recreation Plan 2008-2012



*Presented to:*  
Open Space Committee  
Town of Hanover  
550 Hanover Street  
Hanover, Massachusetts

*Presented by:*  
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*Photos from top: Town Center Ballfield,  
Hanover Cemetery, Colby Phillips, King Street*

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## **CREDITS AND ACKNOWLEDGEMENTS**

Thank you to everyone who participated in the update of Hanover's 2007 Open Space and Recreation Plan. Without the effort of many, this planning effort would not have been possible.

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## Section 1.0 Plan Summary

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*Photo by Mary McCrann, Playground in Hanover*



## **1.0 PLAN SUMMARY**

It is noted in the 1997 Open Space and Recreation Plan that Hanover's vision to guide the future growth and development of the Town in the next twenty years is for:

*A Town that retains and improves the pleasing character of its civic, historic, economic, and residential areas in a manner that is sensitive to its natural and built environments.*

The 2008 Open Space and Recreation Plan (OSRP) update final report is the culmination of nearly ten months of data gathering, public input and research. The document has been prepared to serve the Town of Hanover in the future in terms of what the various committees, boards, commissions and volunteer groups can do to support open space and recreation in town. As in 1997, the OSRP is designed to inform the reader about natural resources, open space, recreational amenities and other related topics that exist in Hanover and neighboring communities. Mentioned throughout the OSRP update process by participants was the fact that Hanover has changed significantly through the years from a rural, charming bedroom community to a more suburban, developed town that still has pockets of its original character spread throughout. Maintaining that character and ensuring that open space, natural resources and recreation continues to stay on the forefront of everyone's mind as the town continues to manage its growth is essential to those that live in Hanover.

The OSRP illustrates how important it is to continue to protect and preserve existing sensitive environmental areas and it also provides an inventory of existing recreational facilities. In terms of the future, suggestions are provided regarding what Hanover should be protecting and adding how the Town can continue to make recreational opportunities available for both residents and visitors. Other sections of the Open Space and Recreation Plan update include a discussion of the most recent demographic information available (population and housing data), an environmental inventory and analysis, a discussion of goals and objectives and also a needs analysis. Perhaps one of the most significant sections is the Action Plan which details suggested steps that different boards, commissions and committees in Hanover can take to achieve the stated goals and objectives. The Action Items are ambitious, but can be accomplished through cooperation and collaboration.

The final Open Space and Recreation Plan, in addition to serving as a guide for the town, once approved by the Massachusetts Division of Conservation Services (DCS) will allow Hanover to apply for specific types of grant funding for projects related to open space and recreation.

Hanover is a charming community that is deep in history and valued as a wonderful place to live. The overall goal of this entire planning effort has been to provide another tool for the town and residents to use to help understand the community and how to improve its open space and recreation in the future while protecting what currently exists.

## Section 2.0 Introduction

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*Photo by Mary McCrann, Luddams Ford*

## **2.0 INTRODUCTION**

### **2.1 Statement of Purpose**

The Town of Hanover is a community that resonates with character from its history, open spaces, scenic views and people who live there. As a semi-rural suburban community to the City of Boston, it is an attractive place to many. Land is a finite resource, so competing needs of the development community and the efforts of planning projects such as the Open Space and Recreation Plan (OSRP) update become evident. Continuing to manage and guide growth while protecting open space and natural resources and providing meaningful recreational opportunities will continue to be a challenge in the future. The OSRP update serves to provide guidance towards that effort. More specifically, the purpose of this project is to:

- ✓ Review and update the 1997 Hanover Open Space and Recreation Plan with the goal of identifying what action items have been completed and what work is still left to do as well as detail local open spaces, natural resources and recreational amenities to help guide the Town during the next five years on how best to enhance and protect those resources.
- ✓ Inventory existing open space and recreational resources and recommend additional opportunities for acquisition, additional protection or amenities to consider adding for the future.
- ✓ Inform and educate local residents about their community and existing open space, natural resources and recreational amenities and why they are important and obtain their input.
- ✓ Create the momentum for the implementing committee that is needed to begin implementation of the **key element** to the plan, the Action Items detailed in Section 9.0.

The OSRP update has been prepared as a document that will be educational and informative to those who read it.

### **2.2 Former Open Space and Recreation Planning Efforts**

OSRPs were prepared for the Town of Hanover in 1979, 1987 and 1997, which is approximately every ten years. The 1979 plan was prepared by the Conservation Commission and it detailed a history of the Town as well as conservation efforts that were taking place at the time. Goals at the time included:

- Protect the integrity of wetlands, watersheds, existing and potential aquifers, groundwater recharge areas, ponds, streams and floodplains,
- Fulfill current and future needs for recreation programs and facilities,
- Preserve known historic sites,



- Plan for the integration of open space uses with urban development,
- Prepare for the continued growth of the community in a planned fashion that can accommodate the citizens' needs and maintain the resources that are attractive to residents, and
- Establish cooperation among all town boards and departments in preparing for future growth demands.

The 1987 Hanover Open Space Plan was updated by the Metropolitan Area Planning Council and it detailed that since the 1979 plan was written, the Conservation Commission acquired more land, enacted a local wetlands protection bylaw and established several protective zoning districts. The goals established for the 1987 plan included the goals identified in the 1979 plan, but further emphasized the need for recreational programs and facilities as well as improving public access to open space.

### **2.3 1997 Open Space and Recreation Plan Action Items**

Since 1997, the Town of Hanover has made progress in accomplishing a number of tasks listed in the Section 9 (Action Plan) of the 1997 Open Space and Recreation Plan prepared by Beals and Thomas, Inc. The recommended action items were organized by responsible party and year in which the item should be completed or initiated. Since 1997, the following has been accomplished:

#### **Goal 1: Identify, preserve and protect those historic, cultural and natural resources that contribute to the character of the town.**

The Open Space Committee has taken several steps towards identifying key parcels for acquisition such as sending letters to landowners who have property that is ten acres or larger and they have conducted site walks. In addition, the Committee was very active and vocal about helping to have the Community Preservation Act (CPA) passed in Hanover (in 2005). The CPA serves as an additional funding source for open space and recreation projects.

In May of 2003, the Town adopted a Bylaw for the Preservation of Historically Significant Buildings. In summary, the Bylaw requires that if an applicant wishes to demolish any building seventy five (75) years or older the project be reviewed. The Town of Hanover has also prepared a Historic Preservation Plan.

#### **Goal 2: Protect and enhance the quality of Hanover's surface and groundwater.**

In the past ten years, the Town of Hanover has worked on identifying vacant lands to target for acquisition or other means of protection, particularly properties near or adjacent to town wells and public drinking water supplies. The local Aquifer Protection District serves to help monitor businesses and homes conducting certain activities in the area by requiring that Water Quality Compliance Certificates be obtained from the Public Works Department.

**Goal 3: Enhance appropriate public access to and use of existing conservation lands and establish continuous greenways.**

Several bridges and boardwalks have been built on conservation lands and the greenway by Boy scouts, AmeriCorps participants, Open Space Committee Members and volunteers. Properties where these bridges and boardwalks have been built include Colby Philips, Fireworks, French's Stream, Myrtle Street and Drinkwater. The 1999 trails map that was produced is being updated as a part of the 2007 OSRP project.

Activities that have taken place in Hanover to educate residents about existing conservation lands include vernal pool walks with high school students, and Open Space Committee sponsored walks on local conservation areas. In addition, the Open Space Committee also works with the local newspaper regarding articles of interest.

**Goal 4: Improve and increase recreational opportunities in Hanover.**

The Open Space Committee frequently works with Local Scout Troops who help out tremendously with trail work and signage for conservation areas and trail heads. In addition, the OS Committee helped to create a new trail along Forge Pond and a boardwalk that allows access into the Colby Phillips property while preserving wildlife habitat.

**Goal 5: Increase environmental awareness among all sectors of the community.**

The Open Space Committee has been working to increase environmental awareness in the community. The Committee was instrumental in advocating for Community Preservation Act funds which allowed the Town to purchase the Cervelli Property (now known as King Street Property) in May 2007.

The Committee also supports guided walks through open space properties. More specifically, naturalists have led several guided walks.

## **2.4 Planning Process and Public Participation**

In the spring of 2007, the Town of Hanover issued a request for proposals to hire a consultant to assist the Open Space Committee and update the Town's Open Space and Recreation Plan. Beals and Thomas, Inc. was selected and began working on the project in April 2007.

Beals and Thomas, Inc. put together a team of qualified professionals that included a Project Manager, Environmental Planner, Environmental Specialist and ADA Accessibility surveyor. The team met monthly with the Hanover Open Space Committee which consisted of local residents who volunteer their time to serve their community on a local committee. The Town Planner, Andrew R. Port, AICP was also a part of the team working on the update. In 1999, the Open Space Committee (OSC) initiated the Hanover Greenway project to establish a continuous walking trail from Hanover High School to

Luddam's Ford Conservation area. The OSC has built trails, bridges and boardwalks, using volunteer labor and grants that have given Hanover resident's greater access to the outdoors.

Beals and Thomas, Inc. conducted a site visit in May 2007. The visit consisted of partnering with the Town Planner, Andrew R. Port and two Open Space Committee members, Hal Thomas, Co-Chair and Wallace Kemp to travel around Hanover, get a feel for the community and take photographs of open space, natural resources, playgrounds, water resources, ballfields, walking trails, scenic viewsapes and other recreational amenities. Beals and Thomas, Inc. also conducted a well attended public forum on June 19, 2007 at the Hanover Town Hall to inform local residents about the project and ask for their input regarding goals and objectives and to better understand what they felt significant issues are in terms of open space, recreation and natural resources. The Public Forum included a component where participants broke into small groups and using a map that was provided, mapped out a "Tour of Hanover" that they would take someone on who is new to the community, or a first time visitor. The exercise proved to be very successful and is summarized in Appendix C.

### **Hanover Day**

The Open Space Committee took the initiative to further the public process for this project by setting up a booth at Hanover Day. Hanover Day is an annual celebration of the community that includes booths of civic organizations, an arts and crafts tent, restaurant establishments providing "a taste of Hanover," and access to local historical resources like the Stetson House. The booth set up by the OS Committee included a large map where event participants could identify their "favorite place" in town and could also receive more information about the Public Forum, volunteer opportunities and land conservation in general. The booth was visited by approximately 50 people and was very well received. Hanover Day attendees that stopped by the booth identified the following areas as their "favorite place," they include:

- The North River, Factory Pond, Luddams Ford, Briggs Stable, Melzer Hatch Reservation, Town Center, Bonney Conservation Parcel, Colby Phillips, Bird Sanctuary off of Broadway, Willow Road Site, Sylvester Field, Cervelli Property, the Cranberry Bogs, Myrtle Field, Hiking on the trail behind the old Fire Station and Ellis Field.

A full summary of Hanover Day is provided in Appendix C.

### **Citizen Survey**

Public outreach for the project was continued by preparing an Open Space and Recreation survey. The survey was conducted in August and September 2007 and was made available through a link on the Town website. A copy of the survey was also mailed to every household in the community. In total, 246 responses were received. The purpose of the survey was to provide another opportunity for local

residents to offer their thoughts and ideas regarding open space, natural resources and recreational amenities in Town. Many of the survey results are discussed in Section 7.0 of this report, and the full survey summary is included in Appendix C.

### **Additional Public Forum**

A second Public Forum for this project was held on November 8, 2007 (World Town Planning Day), in conjunction with the other master planning efforts going on simultaneously in Hanover. All five of Hanover's long range plans were discussed, including:

- Master Plan (Comprehensive Plan)
- Open Space & Recreation Plan
- Parks & Recreation Facilities Master Plan
- Affordable Housing Plan
- Historical Preservation Plan

As part of the Public Forum each consultant charged with completing one of the plans noted above presented key findings of each plan to date. Specifically, the consultants were asked to discuss:

1. The major issues, problems, challenges, or concerns identified in the plan which the Town should address over the next ten (10) Years, and
2. The major recommendations or actions identified in the plan which the Town should undertake over the next ten (10) years to address these issues.

In addition, the Town encouraged residents to visit the Town website during the next few months to view the Community Preservation Plans in draft and final format, and to answer final survey questions for the new Master Plan. Executive Summaries of each plan posted will be made available as well as comment forms to provide feedback to the Town. Overall, the Community Preservation Plans are expected to be finalized by January 2008. The new Master Plan will be completed by May of 2008.

The update of Hanover's Open Space and Recreation Plan was a collaborative and collective effort of many. The Open Space Committee's main goal was to prepare a plan that would be easily understood and implemented after the actual planning process is finished. The final OSRP is interesting, unique to the community of Hanover and proactive regarding recommendations, goals, objectives and action items.

## Section 3.0 Community Setting

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*Photo by Mary McCrann, Tindale Bog*



## **3.0 COMMUNITY SETTING**

### **3.1 Regional Context**

#### **3.1.1 Location and Physical Context**

The Town of Hanover is located within the coastal region of southeastern Massachusetts within the North River watershed. Hanover is bounded by Norwell to the north and east, Pembroke and Hanson to the south, and Rockland to the west and northwest. The Town is located approximately seventeen (17) miles north of Plymouth and twenty-three (23) miles southeast of Boston. The Indian Head and North Rivers form the southern town line with the Towns of Hanson and Pembroke, while the Third Herring Brook serves as the eastern boundary between Hanover and Norwell.

Hanover occupies approximately 15.7 square miles in area, and when regionally compared, is one of the smaller towns in Plymouth County. Located within 25 miles of Boston, many Hanover residents commute to the city for employment. Expansion of metropolitan Boston southeastward along the “South Shore” has been rapid since 1940, when towns consisted of small centers with a business zone along the principal road network. The regional map on the next page illustrates the region in which Hanover is located. This trend towards “suburban sprawl” and the resultant increase in population has also increased the demand for water, while the amount of land available for water supply has decreased to the point where many local water agencies are having difficulty in locating and developing additional water supplies<sup>1</sup>.

State highway Routes 3, 53, 123 and 139 traverse through the Town of Hanover. Route 3, a limited access highway located north to south, traverses the northeastern corner of the Town and provides convenient access to both Cape Cod and the Boston metropolitan area. Route 53 (also known as Washington Street and Columbia Street) intersects with Route 3 at Interchange 13 in the northeastern section of Town and it extends in a southeasterly direction in the eastern quadrant of the Town. The entire length of Route 53 is commercially zoned, with the exception of the southeastern portion that is business zoned.

Route 123 (also known as Webster Street) traverses in an east-west direction through the northern portion of Hanover. The majority of the land abutting Route 123 is zoned as residential with the exception of the areas adjacent to Route 3 which is zoned commercial. Route 139 (also known as Rockland Street and Hanover Street), traverses in an east-west direction through the mid section of the Town. Smaller pockets along Route 139 are presently business zoned and one area is industrial zoned. The remainder of the roadway is currently zoned residential.

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<sup>1</sup> Williams, John R. and Gary D. Tasker, 1974. Water Resources of the Coastal Drainage Basins of Southeastern Massachusetts, Weir River, Hingham to Joes River, Kingston. United States Geological Survey.

## Town of Hanover Regional Context



Source Data: MAGIS, 2007

### 3.1.2 Water Supply

Hanover has four (4) existing water supply areas, with nine (9) wells (see Table 3-1). The Pond Street Wells are situated at the southerly end of Old Pond Meadow Swamp, and border the Third Herring and Silver Brooks. The land is predominantly wetland and during periods of excessive rainfall or rapid thaw, the area is subject to flooding. The Hanover Street Wells are located approximately 4,000 feet south of and 30 feet higher in elevation than the Pond Street Well area. Again, the land is characterized as wetland. Although testing has shown that bedrock or ledge rises to the west and north, no connection has been found between the groundwater at Hanover Street and Pond Street. (See 1997 OSRP note). This discrepancy suggests that there is an intrusion into the small aquifer from a substantial yet unidentified groundwater source. The Broadway Well area lies approximately 3,600 feet south of the Hanover Street Well area. The land, formerly an active cranberry bog, is characterized by its high water yield. The area of surface runoff to these wells is insufficient to provide the amount of water being pumped, indicating an intrusion from another groundwater source beyond the surficial watershed area<sup>2</sup>. The Riverside Drive Well area is located at the southeastern corner of the Town in a wetland area to the north of the intersection of Indian Head and North Rivers and is believed to be the first bedrock well in Massachusetts. In 1993, the Beal Wells were

<sup>2</sup> Town of Hanover, 1997. Hanover Open Space Plan. Hanover, Massachusetts.

constructed and installed. The Beal Wells are located off Riverside Drive. The two wells have a total capacity of 1,238,400 gallons per day. Treatment in these wells consists of iron, manganese, and turbidity.

**Table 3-1  
Existing Wells in Hanover**

Location	Well	Year Installed	Capacity (gpd)	Treatment
<b>Pond St</b>	Pond St #1	1940's	432000	Iron/Manganese/Color/Turbidity
<b>Pond St</b>	Pond St #2	1973	864000	Iron/Manganese/Color/Turbidity
<b>Pond St</b>	Pond St #3	1973	864000	Iron/Manganese/Color/Turbidity
<b>Hanover St</b>	Hanover St #1	1960's	360000	Iron/Manganese//Turbidity
<b>Hanover St</b>	Hanover St #2	1960's	201600	Iron/Manganese/Color/Turbidity
<b>Broadway</b>	Broadway #1	1960's	468000	Iron/Manganese
<b>Broadway</b>	Broadway #2	1960's	403200	Iron/Manganese
<b>Riverside Dr</b>	Beal #1	1993	216000	Iron/Manganese/Turbidity
<b>Riverside Dr</b>	Beal #2	1993	1022400	Iron/Manganese/Turbidity

Source: Email from Mr. Victor Diniak, August 2, 2007

### Potential Water Supply Issues

The Pond Street wells face contamination threats from a leaking gasoline tank at the corner of Old Washington Street and Route 53. The gas station has been decommissioned but there is a plume of pollution in the ground. The Broadway wells also face contamination threats from a leaking gasoline tank at Columbia Road. The gas station (Sunoco) is currently still in operation and there is a pump and treat system cleaning up the pollution that is in the ground. All of the wells in Hanover face threats from encroachment of development that continues to get closer and closer.

The gallons per day capacity of all of the wells in Hanover is deceptively small. The Town does not have a sustainable capacity that summing up the total capacity of all of the wells would imply. If the wells were pumped at their rated capacity for a length of time the usage would run the ground dry.

Four (4) well protection zones are incorporated into the Town's Zoning Bylaw and are located within the designated Aquifer Protection Zone. These four (4) zones correspond to the Pond Street, Hanover Street, Broadway and Beal Well Fields. The Broadway well protection zone is the largest of the four (4) zones with an approximate area of 129 acres.

Also, wells that are not presently treated, if treated in the future, could potentially yield additional water flows.

### 3.1.3 Scenic Resources

The Town of Hanover has a wealth of scenic resources and view sheds. A map titled Scenic Resources and Unique Environments, Map 5, is located in Appendix A, which depicts scenic corridors, scenic landscapes, scenic views, parks and fields and historic villages. Hanover has several historic villages, including Four Corners, South Hanover, West Hanover, North Hanover, Assinippi and Hanover Center. The Old Colony Rail Line is located in the southern portion of the town traversing from west to east.

#### Scenic Resources

Scenic resources need not be a specific view or location, but may be a combination of features that come together to create an aesthetically pleasing situation, such as a tree lined street, a rolling meadow, a hilltop, or an old farmhouse. The following places were identified as treasured scenic resources by the participants in the Open Space Public Forum on June 19, 2007 (see Map 5, Appendix A):

- Town Center
- Briggs Stable/Field
- Four Corners
- Luddams Ford
- Sylvester Field
- Cardinal Cushing Property
- Trail along the Indian Head River
- Slave Grave in the Town Cemetery on King Street
- Hanover's designated Scenic Roads
- Old Stone Bridge on the Hanover/Pembroke line over the North River
- Forge Pond

#### Scenic Roads

The Scenic Roads Act (M.G.L. Chapter 40, Section 15C) allows a municipality to designate any non-numbered route or state highway as a "scenic road." Once designated, any proposed repair, maintenance, reconstruction or paving work that involves the cutting of trees or destruction of stone walls requires prior approval by the Planning Board. Designating a road as "scenic" allows for the preservation of existing rural and natural aesthetic qualities, and thereby contributing to the overall rural character of the community. The Town of Hanover has designated the following roads as "Scenic Roads" (See Map 5, Appendix A):

According to the Town of Hanover's Scenic Roads Map, prepared by the Planning Department there are seven designated Scenic Roads in Hanover include:

- Broadway
- Center Street
- Main Street

- Silver Street
- Union Street
- Washington Street (*from the bridge into Pembroke to Route 53*)
- Whiting Street

### 3.2 History of the Community<sup>3</sup>

#### Early Settlement

The land area which comprises the present Town of Hanover is bounded by the North River, extending to the Indian Head and Drinkwater Rivers on the south, and the Third Herring Brook which forms the natural border to the east. Numerous small brooks feed these streams. These natural water ways are among the town's greatest natural resources. Prior to 1649, the area served as hunting and fishing grounds for the local Native Americans whose permanent villages were located around the ponds in Hanson and Halifax.

In the early 1600's, woodlands comprised 90% of Hanover's land area. Oak, upland and swamp cedar, elm, hornbeam, hickory, birch, sassafras, maple, poplar, beech, hemlock, spruce, and pine were commonly found in the woodlands. Wildlife such as deer, wildcat, bear and wolves, as well as smaller woodland animals and birds, were found throughout the woodlands in the days of early settlement. Deer were protected by law in Hanover as early as 1739. Swampland and salt marshes occupied a sizable portion of the natural acreage. Marshes occupied a sizable portion of the natural acreage. A granite boulder in North Hanover, known as Absolum's Rock, is said to be the largest free-standing boulder in Plymouth County.

Hanover's abundance of large oak trees and its proximity to the North River made the Town desirable to the shipbuilding industry. In 1649, William Barstow, the first settler, came to Hanover to build his house in the area now called "Four Corners". He was a carpenter or shipwright by trade, and used the river and natural oak to begin a shipyard on the banks of the North River. He later constructed the first bridge across the river and laid out the way from the river to Hugh's Cross and beyond "towards the bay so as to avoid Rocky Hill and the Swamp" (Colony Records 3, p. 78). Later he operated an ordinary (tavern) where refreshments were sold to travelers.

Other settlers soon followed Mr. Barstow. They cleared the woodlands for their farms and pastures, and built sturdy structures to house their families. Approximately one hundred of these 18<sup>th</sup> century houses still exist today. These settlers continued the trade of shipbuilding, while others constructed small mills on the streams for grinding corn, sawing wood, and smelting iron nuggets from the town's various bogs.

According to a town historian, the Town had a population of approximately 300 people at

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<sup>3</sup> Town of Hanover. 1997. Hanover Open Space Plan. Hanover, Massachusetts.



the time of its incorporation in June 1727. However, nearly 1/6 of these people lived in a part later annexed to Pembroke. The town continued to grow slowly from a population of 958 in 1800 to 1,303 in 1830. Most citizens built homes and operated small farms to accommodate the needs of their families. Tracts of swamp cedar provided wood for post rails and tubs. Several hundred cord of pine was carted annually to Hingham for the use of the coopers to be made into the now famous Hingham buckets. Later, pine was used in the manufacture of boxes in town while both cedar and pine shingles were sawed at the Shingle Mill in North Hanover. By 1850 the population had increased to 1,592 and much of the land was cleared and the large timber gone.

From 1896 to 1904 the Town was served by Fire wardens. In the event of a fire, the Firewards would ring church bells to alert volunteers, who would then line up in bucket brigades. Hanover's first Fire Department was established in 1904. The Town's library was built in 1906 with \$15,000 donated by John Curtis.

*Around the turn of the century (1900's) George J. J. Clark took over the fireworks factory around the Factory Pond area. In World War One the National Fireworks Company made illuminating rounds for the war effort. These are commonly called tracer rounds and they were revolutionary for the time. George's son William Melvin Clark was interested in flight and across Winter street he "started" Clark Airport. Apparently he got into his plane and just took off from the area. He then expanded and paved the runway (s). By the late 1930's it was a bustling municipal airport. The Hanover Postmaster even used the airport to deliver and pick up mail. After the bombing of Pearl Harbor Dec. 7, 1941 George J.J. Clark, who owned the National Fireworks Company, bought the airport land from his son William Melvin Clark. He needed the space to store supplies for making munitions and the airport was a great space for it. At the Plymouth County Registry of Deeds a document states that George J.J. Clark as owner of the National Fireworks Company bought a good amount of land on December 30, 1941. It is not clear if the some of these lands were taken by Eminent Domain or if the Federal Government gave a large contract to The National Fireworks Company to acquire them. In any case the airport was not in use for a time. After the war was over George sold the land back to his son and the airport was once again back in a action. In 1958 William Melvin Clark sold the land to the Indian Head Land Trust, who began to develop it as a residential area. In it's day, Clark airport seemed to be very important to the area. East Coast Airways was a flight training facility for the government and civilians alike. I'm sure that some very important military individuals flew to this airport in order to oversee munitions development ate the National Fireworks Company. You could also charter flights to and from the area as did my grandfather after World War Two. There were three runways and four hangers including a repair shop.<sup>4</sup>*

### **Industry**

Iron works were an early industry in Hanover. One forge was located near the Luddam's

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<sup>4</sup> Clark Airport, [http://www.andrewstella.com/clark\\_airport.htm](http://www.andrewstella.com/clark_airport.htm), viewed August 9, 2007.

Ford site (now conservation land) and another on the Drinkwater site (also near conservation land). Anchors, oven doors, cannon, cannon balls, bells, and machinery were cast in the forges of Hanover. Amongst the items forged in Hanover was the original anchor to the “Old Ironsides,” the U.S.S. Constitution. The manufacturing of nails and tacks also flourished in Hanover.

Many of the people in North Hanover were engaged in the cottage industry of shoe manufacturing. Typically, families operated small shops on their property where shoes in various stages were passed to various neighborhood families to be completed. Later, larger factories were established. Studley’s on Main Street and Blanchard’s at Assinippi were the Town’s largest manufacturers of shoes and boots in 1860. From 1860 to 1880, the shoe business flourished, and ultimately there were approximately 10 shoe factories located in Hanover. In 1875 the value of the products manufactured within Hanover was approximately \$200,000.

In 1875 the Clapp Rubber Mill, located near the Luddam’s Ford site, began its business of grinding and cleaning ground rubber. While such an industry provided employment for many in town, it most likely also contributed towards the pollution of the river. Other industries included: The E. Phillips & Sons, The Waterman Tack Factories, The Goodrich Shoe Factory, Clark’s National Fireworks Factory and The Lot Philips Box Mill.

In 1900 the population of Hanover was 2,152 and most households in Hanover still consisted of small subsistence farms. Most households were still heated with wood cut from their property or purchased locally, but coal was also being used.

### **Transportation**

From 1864 to 1938, the Hanover Branch Railroad, which followed the river bank, provided convenient transportation from the Four Corners area, thorough South Hanover to West Hanover and on to Rockland, Abington, and Boston. Freight service went to West Hanover until the late 1970’s to early 1980’s. Presently, the land previously used by freight trains is used as walking trails.

From 1893 to 1921, a trolley ran through North Hanover with a spur to Assinippi. The trolley provided transportation for many workers, as well as for vacationers heading to Nantasket in the summer. From 1927 to 1958, land was cleared for an airport in West Hanover (on the present site of the Indian Head Housing Development). The first paved road in Hanover went from the North River to the end of Rockland Street. In 1930, construction of Route 53 began.

### **Cultural**

There are many historical and cultural opportunities in Hanover. The Civil War Monument, a granite obelisk, designed by J. Williams Beal in 1878 at the age of 23, is located in the Town’s Center. The Hanover Cemetery, with earliest burials from 1727,

contains a large number of early slate markers concentrated behind the church, and provides a back drop to the historic center along the north side of the district. Nearby Quincy features the homes, birthplaces and tombs of Presidents John Adams and John Quincy Adams. Plymouth Rock, a replica of the ship Mayflower and Plymouth Plantation are a half hour away via car from Hanover.

Religious organizations and events often contribute to a community's cultural fabric. The first church in Hanover was the First Congregational Church. The church was located on the present site in Hanover Center. The present church is the fourth building on the site. The Episcopal Church was located at Church Hill and later built in the Four Corners. Other denominations followed. The first Catholic Church was built in 1897, and the church's priest also served the towns of Hanson, Pembroke, Holbrook, Halifax and Plympton.

### **Historic Buildings**

Samuel "Drummer" Stetson built the Stetson House, near Hanover Town Hall, in the early 1700's. Town Meetings and religious services were held in the house during its early years, and since 1979 the house has been listed on the National Register of Historic Places. The house is now owned by the town and is open for public tours under the direction of the Town appointed overseers. A citizens group, Friends of Stetson House Inc., and others aid in the preservation and upkeep of the property.



*Photos: Briggs Stable & Hanover Cemetery, both in Historic District*

The historic "Line House" in the Assinippi section of Hanover straddles the Hanover and Norwell town line. The house originally served as the Post Office and Selectmen's Office for Hanover, but since these offices were in the Norwell section of the building it was deemed to be illegal to conduct Hanover town business in another town. Renaming the area where the house was located as "neutral territory" with the name Assinippi solved the dilemma. This Indian name translates to "rushing clear water" or "rocks over water" and commemorates a nearby Indian Meeting Ground on Third Herring Brook. This same area was also the crossroads of two Indian Trails: Plymouth Path and Bay Path. A complete list of historic structures in Hanover is located in Appendix B and for additional information, in the town Historic Preservation Plan, completed in 2007.

### **Historic District**

In late 1995, Massachusetts Historical Commission voted to nominate Hanover Center to the National Register of Historic Places (NRHP). On May 9, 1996, the district was approved by the NRHP and became a National Register District. The district is comprised of twenty properties in Hanover's Town Center. The district contains a well preserved grouping of buildings and sites, reflecting the historical and developmental core of the community. These buildings range in date from the Stetson House, circa 1716 to the Sylvester School, circa 1927. Other buildings within the district include the First Congregational Church, the founding body of the town, the parsonage of the church, circa 1855, from the Greek Revival period; the Town Hall designed by architect Luther Briggs III in 1863, and expanded in 1893 by well-known local architect J. Williams Beal; and the John Curtis Library designed by another Hanover architect, Edmund Q. Sylvester.

The Civil War Monument, a granite obelisk, designed by J. Williams Beal in 1878 is located in the center of the cluster of buildings. The Hanover Cemetery, with earliest burials from 1727, contains a large number of early slate markers concentrated behind the church, and provides a backdrop to the historic center along the north side of the district.



Listing of the Hanover Center Historic District provides recognition of the community's historic importance and assures protective review of projects that might adversely affect the character of the district. Listing in the National Register does not mean that limitations will be placed on the properties by the Federal government. In Massachusetts, properties nominated to the National Register are automatically listed in the State Register of Historical Places. State Register properties owned by municipalities and nonprofit organizations may compete for state restoration funds.

### **3.3 Population Characteristics**

Due to Hanover's desirable location on the "South Shore" and its proximity to Boston, large numbers of up-scale professionals who work in Boston or along the Route 128 corridor have moved to Hanover. As a result, there has been a significant increase in property values. Historically, a majority of Hanover's growth actually occurred between 1950 and 1970, when Hanover's population increased almost 200%. This dramatic increase was due in part to the construction of Route 3 in 1950-1960, which resulted in convenient vehicular access to Boston, Cape Cod and other popular destinations.



Another factor was the trend towards suburbanization. Although development has slowed since the 1970's, new construction continues to result in the loss of valuable open space and recreation land.

The Town of Hanover has a population of approximately 13,164 residents as of 2000 and it is expected that by the year 2020, the number of people living in the community will remain steady at 13,194 residents more or less. Populations estimates made by the US Census Bureau projected Hanover's population to increase to 13,371 in 2001, 13,568 in 2002, 13,679 in 2003, 13,834 in 2004 and 14,101 in 2005 (a 5.5% increase between 2001 and 2005).

According to the 2006 Town Census, Hanover's population had risen to 14,148. The 2006 population count is greater than the MISER prediction that the population will increase in 2010 to 13,390 residents and fall slightly to in 2020 to 13,194 residents.

**Table 3-2: Town of Hanover Population**

<b>Town of Hanover</b>	
<b>Year</b>	<b>Population</b>
1930	2,808
1940	2,875
1950	3,389
1960	5,923
1970	10,107
1980	11,358
1990	11,912
2000	13,164
2006	14,148

Source: (<http://www.massbenchmarks.org/statedata/data/pop19302000.xls>)  
Town of Hanover through Town of Hanover Housing Needs Assessment

According to US Census 2000 data, Hanover's population makes up approximately 2.7% of Plymouth County's population overall. The nearby communities of Pembroke and Rockland have larger populations than Hanover ranging from approximately 16,930-17,670 residents (*see Table: Population Change*). Hanover experienced an overall population increase of nearly 10.5% between 1990 – 2000 which is greater than other nearby towns of Hanson, Norwell, and Rockland.



**Table 3-3: Population Predictions**

<b>Town Of Hanover</b>	
<b>Year</b>	<b>Population Projection</b>
1980	11,358
1990	11,912
2000	13,164
2010	13,390
2020	13,194

Source: MISER Projections: <http://www.massbenchmarks.org/statedata/data.htm>

Based upon the 2006 Town Census the Town of Hanover has grown substantially compared to projections calculated by MISER after the 2000 census. MISER projected that Hanover's population would increase by only 30 people in 20 years. However, from the actual data, one can see that Hanover has grown 984 residents in only six years. That is an increase by 7% over 6 years compared to the projected less than 1% increase over 20 years. Therefore, Hanover is growing at a rate much faster than originally projected in 2000.

**Table 3-4 Population Change**

	1930	1940	1950	1960	1970	1980	1990	2000	% Change 1990-2000
Massachusetts	4,248,326	4,316,721	4,690,514	5,148,578	5,689,377	5,737,037	6,016,425	6,349,097	5.5%
Plymouth County	162,311	168,824	189,468	248,449	333,314	405,437	435,276	472,822	8.6%
<b>Hanover</b>	<b>2,808</b>	<b>2,875</b>	<b>3,389</b>	<b>5,923</b>	<b>10,107</b>	<b>11,358</b>	<b>11,912</b>	<b>13,164</b>	<b>10.5%</b>
Hanson	2,184	2,570	3,264	4,370	7,148	8,617	9,028	9,495	5.2%
Norwell	1519	1871	2515	5207	7796	9182	9279	9765	5.2%
Pembroke	1,492	1,718	2,579	4,919	11,193	13,487	14,544	16,927	16.4%
Rockland	7,524	8,087	8,960	13,119	15,674	15,695	16,123	17,670	9.6%

Source: MISER Population change 1930-2000

Understanding Hanover's population as a whole is important because it allows an overall look at how the town has grown and changed over time. For use in this particular plan another helpful way to look at the local population is via different age groups. The open space and recreation needs of children and young adults are not the same as those of teenagers which are not the same as adults and the elderly. Between 1990 – 2000, Hanover saw a decline in the number of people in the age range of 20 to 34 and age 60 to 74 (*see Table 3-5: Hanover Population by Age*). Significant increases in age groups occurred in Hanover residents who are age 45 to 59 and those 85 and older. While open space amenities and recreational facilities should be available to residents of all ages, there may be opportunities to investigate that would provide enhanced opportunities for specific age groups.

**Table 3-5 Hanover Population by Age**

Age Group	Hanover Population		% Change	Massachusetts	United States
	1990	2000		% Change	% Change
Under 5	856	1,013	18.3	3.7	4.5
Age 5 to 9	909	1,095	20.5	14.0	13.5
Age 10 to 14	899	1,174	30.6	23.9	19.9
Age 15 to 19	1007	894	-11.2	1.4	13.9
Age 20 to 24	854	481	-43.7	-21.3	-0.3
Age 25 to 34	1,598	1,337	-16.3	-15.9	-7.6
Age 35 to 44	2,163	2,457	13.6	15.7	20.1
Age 45 to 54	1,572	2,067	31.5	45.5	49.4
Age 55 to 59	530	792	49.4	22.3	27.9
Age 60 to 64	425	475	11.8	-9.6	1.8
Age 65 to 74	691	752	8.8	-7.0	1.6
Age 75 to 84	319	484	51.7	18.1	34.3
Age 85+	89	143	60.7	26.6	37.6

Source: US Census 2000, Summary File 1, US Census 1990, Summary File 1

Passive and active recreational facilities should be added, maintained and improved where appropriate with different population groups in mind. An example might be discussing adding a pocket park or improving a park that is in a neighborhood where there is known to be a number of younger children.

### Density

In 2000, the Town of Hanover had a density of approximately 843.4 persons per square mile of land area. Based on 2006 Town of Hanover population data, the population per square mile is approximately 906.9 persons.

**Table 3-6: Land Area and Density**

*Hanover Land Area: 15.6 square miles*

Year	Population	Population per square mile
2000	13,164	843.4
2006	14,148	906.9

Source: (<http://www.massbenchmarks.org/statedata/data/pop19302000.xls>)

Town of Hanover through Town of Hanover Housing Needs Assessment

### Family Income

According to the 2000 US Census the Town of Hanover had approximately 3,558 families. The median family income was approximately \$86,835. Family income is based on blood related or adopted children in a household. The median household income was approximately \$73,838. Household income is based on the income of non-related persons living in the same household.

### **Major Industries, Employers and Employment Trends**

Historically, the major industries within Hanover were shipbuilding and cottage industries such as shoe manufacturing and iron works. Presently, Hanover has a small industrial district but also provides for a number of service oriented businesses. Businesses are primarily located along Route 53.

The Town of Hanover has many small businesses. Some of the larger employers within the Town include P.A. Landers (Construction since 1978), Cri-Tech (a full service custom compounder of high performance FKM compounds, specialty compounds, and additives founded in 1977), the Hanover Public School System, and the Town of Hanover.

Residents within the Town of Hanover are employed in several major sectors according to the 2000 US Census. Approximately 22% of residents are employed in educational, health and social services. Approximately 14% of residents are employed in retail trade and approximately 13% of residents are employed in finance, insurance, real estate and rental and leasing. Over 78% of the residents are private wage and salary workers while approximately 14% are government workers. Approximately 8% of residents are self employed. According to MetroBoston DataCommon, in 2000, approximately 1,240 workers traveled within the community. Approximately 6,319 workers traveled to Hanover from an outside community to work. Approximately 5,472 Hanover residents traveled to another community for work.

The Massachusetts Department of Workforce Development tracks the number of jobs within the Town of Hanover. From 1992 to 2002 the number of jobs in Hanover increased from just below 6,000 to approximately 8,000. From 2002 to 2005 the number of jobs decreased to just over 7,000.

## **3.4 Local and Regional Planning**

When planning for a community, it is important to not only assess at the individual town, but also understand what is occurring regionally. It is important for towns to outline goals and objectives on both a local and regional level. The State of Massachusetts has several agencies that are regionally based and provide resources to local towns and cities.

### **3.4.1 Metropolitan Area Planning Council (MAPC)**

The Town of Hanover is part of the Metropolitan Area Planning Council (MAPC). MAPC is a regional planning agency representing 101 cities and towns in the metropolitan Boston Area. In addition, Hanover is a member of the South Shore Coalition, one of eight MAPC subregions. The purpose of the Coalition is to meet monthly and discuss issues of common concern, and it could be a forum for facilitating some of the items noted throughout this plan. More information can be found at:

[http://www.mapc.org/metro\\_area/ssc.html](http://www.mapc.org/metro_area/ssc.html).

### **MetroPlan**

In 1987, MAPC initiated the MetroPlan planning process in recognition of the mixed impacts of widespread low density development in the region. The MetroPlan document is divided into four sections: Overview of the Plan, Planning Elements, Action Recommendations and Capital Investment Program and further classified into The Urban Area, The Multi-Service Area, The Suburban/Rural Area and the Land Resources Protection Area.

Within the Land Resource Protection Area Section, there are four goals that include:

- Preserve and protect critical land resources.
- Shape the growth of the region.
- Preserve and enhance a “sense of place” for the region.
- Fulfill the recreational needs of the region’s population and to provide access, when appropriate, to protected open areas.

Hanover has been pursuing these general goals in their Open Space and Recreation Committee, Parks and Recreation Committee and Conservation Commission. As stated in the MetroPlan, some of the goals will be accomplished by “identifying and mapping protected open space and identifying and mapping areas recommended for protection in the future based on criteria that define areas of regional importance.” Hanover began mapping their open space with the Greenway project and continues to map areas of regional importance today.

### **MetroFuture**

MAPC is in the process of completing the MetroFuture program. Products of this planning initiative will include Regional Vision, a Plan to Achieve the Vision, Public Policy Recommendations, Municipal Template and a New Set of Leadership.

This program has also allowed for the creation of MetroBoston DataCommon, an online mapping tool for MAPC communities.

#### **3.4.2 Massachusetts Bay Transit Authority (MBTA)**

Hanover is part of the 175 member collection of towns and cities within the Massachusetts Bay Transportation Authority (MBTA) Service Areas. The MBTA has no direct service in the town of Hanover, and bus service for the area is put out for contract to local bus companies. At the present time, bus service is provided by Plymouth & Brockton Street Railway Co.<sup>5</sup>. The bus stop is at the Hanover Mall and terminates in Braintree. However, as part of the 175 member service district, Hanover still pays an assessment to support MBTA services. The closest MBTA commuter rail locations were originally in the Towns of Hanson (6 miles from Hanover Center) and Abington (5 miles from Hanover Center). Additionally, the MBTA recently opened the Greenbush commuter rail line that runs from Greenbush in Scituate to South Station. The Greenbush

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<sup>5</sup> MBTA website, [www.mbta.com](http://www.mbta.com), viewed July 18, 2007.



station is approximately 7 miles from the Assinippi neighborhood of Hanover.

### **Regional Open Space**

Generally, natural features do not follow political boundary lines. Ponds may be located in three different towns; a cranberry bog may be located in two towns; a valuable aquifer may encompass five towns. These examples have been mentioned to stress the importance of Regional Open Space. Generally, towns are unable to manage open space for their own municipality as well as three or four others. Regional organizations tend to take on regional open space projects. Regional open space organizations in the Hanover area are outlined below.

### **The Wildlands Trust**

The Wildlands Trust is a land trust in Southeastern Massachusetts which owns or holds conservation restrictions on more than 140 properties protecting over 4,500 acres of land in 26 communities. The Wildlands Trust and the North and South Rivers Watershed Association have partnered to protect land along the North River that flows through Hanover, Pembroke, Norwell, Marshfield and Scituate. The Wildlands Trust is also involved in protecting land within the Herring Brook Valley. This area is located at the junction of the Indian Head River, North River and the fourth Herring Brook at the Hanover/Pembroke Line.

### **North and South Rivers Watershed Association**

The North and South Rivers Watershed Association (NSRWA) is a grassroots environmental organization located in the South Shore of Massachusetts. The mission of NSRWA is to “preserve, restore, maintain and conserve in their natural state, the waters and related natural resources within the watershed.” The NSRWA also offers activities and opportunities for paddling, boating, walking and nature walking within the Town of Hanover and surrounding communities.

### **Plymouth County Conservation District**

The Plymouth County Conservation District (PCCD) is a non-profit organization funded through its own fundraising initiatives. Located in West Wareham, MA, PCCD provides technical assistance to private land owners and communities within Plymouth County. This assistance primarily relates to agricultural issues, especially cranberries due to their predominance in southeastern Massachusetts. PCCD serves as a liaison between private landowners and government agencies such as the US Department of Agriculture and Coastal Zone Management (CZM).

### **South Shore Natural Science Center**

The South Shore Natural Science Center (SSNSC) is an independent, non-profit organization whose primary mission is to “provide natural science experiences that educate, excite, and commit every generation to preserve the environment and to encourage responsible use, stewardship and enjoyment of our natural resources”. The SSNSC, which was founded in 1962, is located on 30 acres of conservation, historic and

recreation land in the Town of Norwell. It utilizes its land, which it has gained through donations, to offer a variety of educational programs for both children and adults. Programs offered by the Center include Summer Day Camps; Earth Day festivities, and informative trail walks.

The SSNSC owns the following parcels in Hanover:

- Melody Woods- A 45 acre parcel divided by Pleasant Street, abutting the Colby-Phillips site. There are two trails, a climax beech forest, white cedar swamps, holly stands and vernal pools.
- Tedeschi Sancturary- A 17 acre parcel of wetlands and upland located within the Well Protection Zone off Twin Fawn Drive.
- Hackets Pond- Several wooded acres between Country Way and Hackets Pond.

### 3.5 Growth and Development Patterns & Local Planning Efforts

#### 3.5.1 Land Use

The land use within the Town of Hanover from 1971 to 1999 is detailed in the table below.

**Table: Land Use Change in Acres, Hanover 1971-1999**

	1971	1985	1999	Change 1971-1999	% Change 1971-1999
Agriculture	302.91	252.62	143.77	-159.14	-52.5%
Forest	5,864.83	5,452.21	4,944.47	-920.36	-15.7%
Recreation & Urban Open Space	290.71	306.91	290.58	-0.13	0.0%
Multifamily Residential	0.00	10.17	24.38	24.38	100.0%
High Density Residential	1,234.01	1,350.32	1,615.16	381.15	30.9%
Moderate Density Residential	1,244.10	1,502.80	1,897.23	653.13	52.5%
Commercial	292.99	331.68	417.55	124.56	42.5%
Industrial	96.94	98.98	112.79	15.85	16.4%
Transportation	69.83	69.83	69.83	0.00	0.0%
Open Land, Mining & Other Uses	353.25	341.42	213.51	-139.74	-39.6%
Wetlands	199.72	230.81	218.47	18.75	9.4%
Water	58.28	59.82	59.82	1.54	2.6%
<b>Total</b>	<b>10,007.56</b>	<b>10,007.56</b>	<b>10,007.56</b>		

**Source: MassGIS, accessed May 2007**

According to the table above, the amount of agricultural, forest and open land within the Town of Hanover has decreased from 1971 to 1999. Surprisingly, the amount of land comprised of water and wetlands has increased over the same time period.

As noted in the Land Use Change table, the area of Hanover consisting of Wetlands and Water increased between 1971 and 1990. Wetlands and Waters can increase due to increases in development and associated stormwater runoff or from mitigation/replication, if required at a greater than 1:1 ratio for impacts to wetlands. However, wetlands may also be lost to development impacts as well, without mitigation, especially historically, when wetlands regulations may not have been effective as they are today. It seems more likely that the increase in Wetlands area between 1971 and 1990 is due to a difference in definition and characterization of wetlands during these two time periods. Historically (pre-1972, when the Massachusetts Wetlands Protection Act was adopted), the edges of wetlands were often delineated as "where your boots got wet." After 1972, the definition of a wetland was refined to include an analysis of vegetation, soils, and hydrology, often resulting in more conservative (larger) wetlands. It seems less likely that a difference in the definition of Water led to the noted increase in this land use. As noted previously, an increase in Water area could be due to increased stormwater runoff; however, given the somewhat small change (2.6%), the difference could also (and perhaps more likely) be due to differences in how Water areas were measured, or measuring error.

### **Residential**

Residential land use within the Town of Hanover consists primarily of moderate density and high density residential property. The amount land used for multifamily residential development has increased from 1971 to 1999 from 0 acres to approximately 24 acres.

### **Commercial**

The amount of land used for commercial use within the Town of Hanover has increased by approximately 43% from 1971 to 1999. Based upon zoning, much of the commercial land use occurs along Route 53 where the zoning permits commercial uses.

### **Industrial**

The amount of land within the Town used for industrial purposes has increased from 1971 to 1999, however, not at as sharp a rate as residential or commercial use.

## **3.5.2 Build-Out Analysis**

Over the winter of 2000, the Commonwealth of Massachusetts issued a Build Out Map for the town of Hanover. The Map prepared for the project, titled Map 3: Composite Development Town of Hanover, depicts the areas within the Town that are absolutely constrained for development, partially constrained and future developable land.

In 2000, the developable land area within the Town of Hanover was approximately 110,649,900 square feet. The land area could accommodate approximately 2,295

additional residential lots. The build-out analysis estimated that the population could increase by approximately 6,800 residents. The water use for residential purposes would increase by approximately 509,590 gallons per day (gpd).

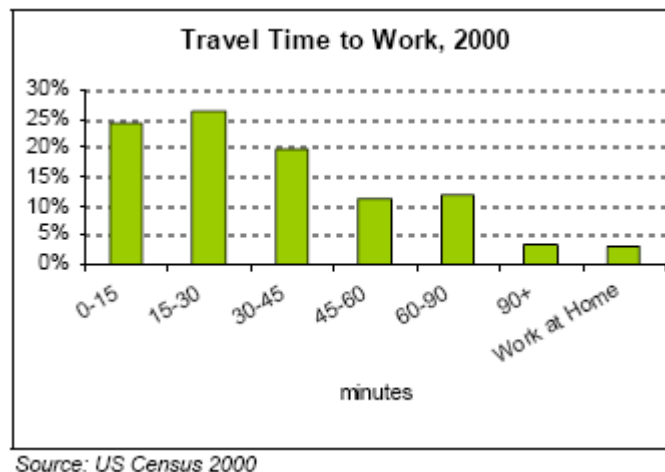
In addition to residential use development, the build-out plan provided for approximately 2,572,500 additional square feet of commercial/industrial buildable floor area. The estimated additional water use for commercial and industrial space was estimated to be approximately 192,900 gpd. The build-out analysis assumes that approximately 60% of the new residential lots will have required frontage on new roads, therefore, the analysis estimates that approximately 39 miles of new roads will be built.

If Hanover were to become fully “built-out,” ecological impacts may include contamination of wells used for drinking water, a decrease in the quality and quantity of sensitive habitat areas for plants and animals and an increase in habitat fragmentation, an increase in issues with stormwater flow and management and a decrease in air and water quality.

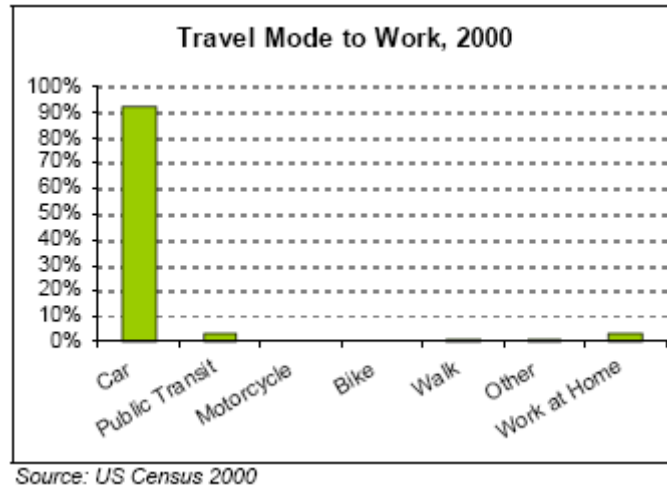
### 3.5.3 Infrastructure

#### Transportation

Hanover’s traffic circulation system is dominated State Routes 3, 23, 123 and 139. The Bay Colony Railroad provides freight service to West Hanover, and the Marshfield Airport is located approximately two miles to the east. Presently, a private bussing company is contracted by the MBTA to provide bussing services to the Town. According to the 2000 US Census, the commuting time to work is as follows:



The following is a breakdown of the modes of transportation used for these residents to travel to work:



### Water and Sewer

The Town of Hanover does not have a public sewer system, therefore, residential, commercial and industrial properties have private septic systems. Several commercial properties have private wastewater treatment plants.

According to a conversation on June 21, 2007 with Mr. Diniak, the DPW Director in the Town of Hanover, the entire town is serviced by public Water. The Town currently has four public well fields, two (2) located off Hanover Street and two (2) located off Broadway containing a total of nine wells. According to the 2006 Town of Hanover Annual Report, the Water Distribution Division is preparing to replace a stretch of water main on Broadway between the Broadway Wells and Spring Street. It is estimated that this project will take over two years<sup>6</sup>.

The Hanover Board of Health agent confirmed that there are six areas in the community that have a high septic system failure rate and are in need of wastewater treatment:<sup>7</sup>

- Brookwood/Cedarwood – due to high groundwater and highly constrained soils.
- Presidential Estates – due to high groundwater.
- Candlewood Drive/Reed Drive – due to high groundwater and clay-like soils.
- Route 53 – due to the intensity of development and volume of flows. Also, this area of commercial development is located within the Town's Aquifer Protection District.
- Fireworks Industrial District – due to minimal lot sizes and the types of uses.
- Walnut Hill Area – due to poor soils and the shallow depth to bedrock.

Since the last OSRP was completed, Hanover has seen an increase in shared septic tanks for multi-unit housing developments, the number of Groundwater Discharge Permits has

<sup>6</sup> Town of Hanover Annual Report for Fiscal Year Ending June 30, 2006, p. 153.

<sup>7</sup> Jeanmarie Joyce, Board of Health to Mary C. McCrann, Beals and Thomas, Inc. via telephone, 2 November 2007.

quadrupled (due to large treatment systems for commercial properties) and the use of alternative treatment methods.

### **3.5.4 Other Hanover Planning Efforts**

#### **Affordable Housing Plan**

According to the Massachusetts Department of Housing and Community Development (DHCD) the Town of Hanover does not have an approved Affordable Housing Plan. However, the Town is in the process of creating an Affordable Housing Plan. The Town currently has approximately 8.5% of its housing stock categorized as affordable. As part of the Affordable Housing Plan planning process, public forum was held on July 18, 2007 to discuss housing needs assessment. Specific efforts on the plan will be directed towards “smart” development, for the most part away from greenfields. Additionally, the plan may encourage some clustered housing in tandem with open space preservation when feasible<sup>8</sup>.

#### **Parks and Recreation Master Plan Update**

The Town of Hanover Parks and Recreation Committee is in the process of updating their Parks and Recreation Master Plan. As of May 2007, the Committee has held numerous public meetings, distributed and collected data from survey, completed assessments of each recreational property within the town and presented the current findings at Town Meeting.

The Parks and Recreation Master Plan Update identifies Hanover’s key recreation needs and preferences. Some include: walking, jogging, hiking trails, improved parking and access at all facilities, softball fields, additional little league fields and multiple tennis courts in one location to name a few.

Some of the goals of the Parks and Recreation Master Plan Update include refurbishing existing facilities, increasing the number of participants of activities, address critical needs as well as others outlined in the Plan Update. The Recreation Master Plan Update is scheduled to be completed by Winter 2008.

#### **Historic Preservation Plan**

The Town of Hanover Historical Commission has recently completed an Historical Preservation Plan (Preservation Plan)<sup>9</sup>. The Preservation Plan is intended as a ten-year guide of strategies endorsed by the Hanover Historical Commission to preserve and enhance the Town of Hanover’s historic and cultural resources.

The Preservation Plan outlines that not only historic buildings should be preserved, but also documents, scenic views, public areas and cemeteries. Additionally, the

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<sup>8</sup> Email from Karen Sunnarborg, Private Consultant for Hanover Affordable Housing Plan, dated July 18, 2007.



Preservation Plan outlines a number of ways to implement historic preservation through regulations, education and outreach.

### **Master Plan**

The Town of Hanover and the Planning Board are in the process of updating their Master Plan. Their Master Plan was last updated in 1997 (the same year of the last OSRP update). The Planning Board has held a public forum and has been holding regular meetings to update their Master Plan.

Some of the goals of the Master Plan include preserving rural character and open space, providing alternatives to sprawl, encouraging affordable and moderately priced housing, creating street and pedestrian connections in neighborhoods, improving existing recreational facilities, preservation of historic and scenic resources and long range capital improvements programs. The Master Plan is scheduled to be completed May of 2008.

### **Community Preservation Act**

*The Community Preservation Act is statewide enabling legislation to allow cities and towns to exercise control over local planning decisions. The Community Preservation Act provides new funding sources which can be used to address three core community concerns:*

- 1. Acquisition and preservation of open space*
- 2. Creation and support of affordable housing*
- 3. Acquisition and preservation of historic buildings and landscapes*

*A minimum of 10% of the annual revenues of the fund must be used for each of the three core community concerns. The remaining 70% can be allocated for any combination of the allowed uses, or for land for recreational use. This gives each community the opportunity to determine its priorities, plan for its future, and have the funds to make those plans happen<sup>10</sup>.*

In 2005, the Town of Hanover passed the Community Preservation Act (3% surcharge) at Town Meeting. The Hanover General Bylaws, Section 4-19 provides further information about the Community Preservation Committee. Funds raised through the Community Preservation Act can be used to purchase land within the Town of Hanover for open space and conservation purposes. Currently, there are nine members of the committee who review potential projects based on criteria from the Community Preservation Act statute which include:

The Massachusetts Community Preservation Act website has an inventory of CPA projects throughout Massachusetts. The Town of Hanover does not have any projects

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<sup>9</sup> Hanover Historical Preservation Plan, Hanover, Massachusetts, September 2007.

<sup>10</sup> Massachusetts Community Preservation Act website, [www.communitypreservation.org](http://www.communitypreservation.org), viewed July 19, 2007.

listed on the inventory. The abutting Town of Norwell has used CPA funds for the renovation of the historic Sparrell School, to build a skateboard park, to partially fund the construction of a home built by Habitat for Humanity as well as other projects.

- *Consistency with Hanover's 1997 Open Space and Recreation Plan, as well as other planning documents;*
- *Feasibility;*
- *Urgency;*
- *Affordability;*
- *Serving a currently under-served population;*
- *Serving multiple needs and populations;*
- *Consistency with recent town meeting actions;*
- *Preservation of currently owned town assets;*
- *Acquisition of threatened resources;*
- *Multiple sources of funding; and*
- *Use of local contractors where possible.<sup>11</sup>*

Projects that have been completed by the Community Preservation Committee (CPC) to date include providing funds to purchase the Cervelli Property (King Street). Ongoing CPC projects include funding the compilation of town planning documents such as the Open Space and Recreation Plan, Affordable Housing Plan, Historic Preservation Plan and the Parks and Recreation Plan. Additionally, the CPC has authorized funds for the Town to purchase the Murtha Property off Center Street and is funding renovations to the John Curtis Library.

### 3.5.5 Regulatory Tools

The Town of Hanover faces development pressures prevalent in the region. Unguided, this added development of single family residences and strip malls will negatively affect the character and natural resources of the community, as well as the economic stability of the town. Without provisions for the protection of open spaces, conventional, grid-like residential development patterns will slowly result in the loss of significant parcels that are presently undeveloped. Therefore, it is necessary for the Town to plan now to protect its significant open space and natural resources, as well as begin planning for the economic stability of the future. Existing and proposed regulatory tools are outlined below.

The Town of Hanover has established two zoning districts that pertain to environmental protection, the Flood Plain Protection District and the Water Resource Protection District. The Water Resource Protection District includes the Well Protection Zones and the Aquifer Protection Zone.

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<sup>11</sup> Ibid

The Board of Health is active in their role of protecting the quality of the Town's groundwater and surface waters, establishing the Local Rules and Regulations for the Disposal of Wastewater.

The Zoning Bylaw for the Town of Hanover establishes the following zoning districts within the Town (See Map 1, Appendix A):

- A. Residence A District
- B. Business District
- C. Commercial District
- D. Planned Shopping Center District
- E. Limited Industrial District
- F. Industrial District
- G. Fireworks District
- H. Flood Plain Protection District (Overlay District)
- I. Water Resource Protection District, which consists of the Aquifer Protection Zone and the Well Protection Zones. (Overlay Districts)
- J. Wireless Telecommunications District (Overlay District)
- K. Adult Use District (Overlay District)

The Flood Plain Protection District and the Water Resource Protection District were created to provide protection for wetlands, surface and groundwater through the control of land use in sensitive areas.

**Flood Plain Protection District (§ 6-7 of the Zoning Bylaw)**

The purpose of Hanover's Flood Plain Protection District (which is an overlay to underlying zoning districts) is to ensure that land subject to seasonal or periodic flooding isn't used for residential or other purposes when the use will endanger the health and safety of the occupants or the general public. In addition, the district's purpose is to assure the continuation of the natural flow pattern of water courses necessary to provide adequate and safe flood water storage capacity to protect against the hazards of flood inundation, to preserve and maintain the water table and water recharge areas, and to preserve the natural character of land within the District.

**Water Resource Protection District (§ 6-8 of the Zoning Bylaw)**

The purpose of the Water Resource Protection District is to protect the water supply of the Town of Hanover from harmful and hazardous pollutants and contaminants by preventing the degradation of surface and ground water supplies within the district. The district is considered an overlay to other zoning districts and it includes several well protection zones and an aquifer protection zone.

The Town of Hanover has a number of regulatory tools in place pertaining to environmental protection and water quality. The Flood Plain Protection District, Water Resource Protection District and Wetlands Bylaw (supplementary to the Massachusetts

Wetlands Protection Act) each serve a specific purpose in terms of Hanover's water and wetland resources. The Water Resource Protection District includes Well Protection Zones and the Aquifer Protection Zone. The Town General Bylaws also have Water Use Restriction Bylaw to protect, preserve and maintain the public health, safety and welfare whenever there is in force a State of Water Supply Conservation or State of Water Supply Emergency.

**Wetlands Protection Bylaw (§ VI, 6-14 of the General Bylaws)**

The purpose of the Town of Hanover's Wetlands Protection Bylaw (approved by the Attorney General in 1986) is to protect the wetlands, related water resources and adjoining land areas in Hanover by controlling activities deemed by the Hanover Conservation Commission that are likely to have a significant or cumulative effect on public/private water supply, groundwater, flood control, erosion and sedimentation control, storm damage prevention, water pollution control, fisheries, wildlife habitat, recreation, aesthetics and agriculture values.

The Bylaw enforces no activity (except with a permit) within a 100 foot buffer around wetland resource areas.

**Water Resource Protection Bylaw (§ VI, 6-15 of the General Bylaws)**

The purpose of the Water Resource Protection Bylaw (approved by the Attorney General in 1981 and amended in 2000) is to protect the public health by establishing performance standards that govern activities which may potentially affect groundwater in the Water Resource Protection District as delineated on the Town of Hanover's Zoning Map.

Changes in land use, expansion of existing facilities, changes in drainage, wastewater disposal, logging, earthmoving, application of herbicides, pesticides and fertilizers, storage and handling of hazardous materials are regulated by the Water Resource Protection Bylaw.

New construction projects in the Water Resource Protection District must obtain a certificate of compliance from the Board of Public Works prior to a building permit being issued. The certificate of compliance enforces and ensures performance standards required by the Board of Health are being met. The overall purpose of the specific performance standards is to:

- Limit nitrogen loading from sewage flow and fertilizer application to amounts which will be adequately diluted by natural recharge,
- Prevent groundwater contamination from toxic and hazardous substances, and
- Insure continued groundwater recharge, clearing, earthmoving and paving.

**Water Use Restriction Bylaw (§ VI, 6-24 of the General Bylaws)**

In May 2000, the Town of Hanover voted to approve a Water Use Restriction Bylaw to protect, preserve and maintain the public health, safety and welfare whenever there is in force a State of Water Supply Conservation or State of Water Supply Emergency. The

Bylaw allows the Town to enforce any imposed restrictions, requirements, provisions or conditions imposed by the Town or by the Massachusetts Department of Environmental Protection.

### **Regulation Updates**

The Hanover Zoning Bylaw currently does not contain any provisions that allow or promote development that preserves open space. The Town of Hanover Planning Board and the Town Planner are working to establish regulatory tools within the Zoning Bylaw and Subdivision Regulations to help protect open space. Such planning efforts include creating a provision for Open Space Residential Development (cluster development). This type of development allows for dwelling units to be located on smaller lots in order to maximize resource protection on the remaining portions of the property.

## Section 4.0 Environmental Inventory & Analysis

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*Photo by Mary McCrann, Forge Pond*



## **4.0 ENVIRONMENTAL INVENTORY & ANALYSIS**

### **4.1 Geology, Soils & Topography**

#### **4.1.1 Geology**

##### **Bedrock Geology**

The bedrock geology of Hanover includes rocks of both igneous and sedimentary origin that have undergone low-grade metamorphic episodes. The two major rock types include a light grayish-pink to greenish-gray granite that was intruded into the existing bedrock and a sedimentary rock comprised of shale, sandstone, conglomerate and greywacke with minor beds of fossil plants. The sediments making up the second rock type were deposited after the intrusion of the granite, when the area formed part of the Narragansett Basin.

The two major rock types in Hanover have each undergone low grade metamorphism. The area associated with the granite, found in the eastern side of the town, exhibits mineral assemblages associated with a low grade metamorphic zone, formed during the Proterozoic Z metamorphism. These rocks often show greenschist, greenstone, felsite and quartzite assemblages enveloped in granite. The rocks found mostly on the western side of town, in part of the metamorphic zone associated with sedimentary rocks, exhibit mineral assemblages typical of the Chlorite Zone. The typical chlorite-muscovite assemblages visible within these rocks were formed during a Pennsylvanian-Permian metamorphic episode 270 million years ago.

Hanover is located on the edge of the Narragansett Basin between two tectonic provinces, with several minor faults trending in a general north-south direction. The Milford-Dedham Zone, which includes the town of Hanover, has had a complex tectonic history involving granite intruded into older volcanic and plutonic rocks millions of years ago, followed by a period of erosion, and the deposition of continental sediments on top of the older granite.

##### **Surficial Geology**

The surficial deposits in Hanover which make up most of the soils and all of the deposits above the bedrock include predominantly glacial sediments. As the glaciers retreated northward at the end of the Wisconsin Ice Age, they left thick stratified drift deposits made up of well sorted sands and gravels and unstratified deposits made up of poorly sorted tills. Even more recently organic matter has accumulated in the form of swamp deposits and alluvium has been deposited by present day streams.

According to the MassGIS general Surficial Geology data layer, dated October 1999, the majority of Hanover's surficial geology consists of sand and gravel. In the north central section of town is an area of till or bedrock that extends along a large portion of eastern Hanover where it borders Norwell. Floodplain alluvium is dispersed throughout the community in smaller pockets.

#### 4.1.2 Soils

The 1997 Open Space and Recreation Plan discussed in great detail the soil features of the Town of Hanover using the July 1968 Plymouth County General Soil Map. Since that time, the USDA Natural Resource Conservation Service has begun to update the soil survey for Plymouth County, Massachusetts. Due to the fact that the update is still in progress, the 1969 Plymouth County soil survey information has been included in this document as the official soils information. To be thorough, we have also included information from the most recent draft update that NRCS has been working on.

##### **1969 Plymouth County Soil Survey – General Soil Map**

The general soil types that can be found in Hanover include three different associations. A small area of Tidal Marsh-Dune land-Coastal beach association is located in the southeast corner of town and is part of the influence of the North River. A large finger of Hinckley-Merrimack-Muck association covers the central portion of Hanover. The third general soil type can be found in both the northwestern and eastern areas of town and is known as the Scituate-Essex-Merrimac association.

The geographic location of soil types within Town as mapped by the Soil Conservation Service in 1969 are illustrated on Map 2, Appendix A.

<b>Table General Soil Associations and Distribution</b>		
General Soil Associations	Approximate Acreage	Percent
Scituate-Essex-Merrimac	5,370	53
Hinckley-Merrimack-Muck	4,500	45
Tidal marsh-Dune Land-Coastal Beach	190	2
<i>TOTAL:</i>	10,060	100

*Source:* Acreage derived from General Soil Map of Plymouth County (1969).

The most predominant soil association in Hanover is the Scituate-Essex-Merrimac association, occupying approximately 53% of the town's land area. Hills and ridges are interspersed among broad, low-lying plains and terraces. The slopes for the most part are gentle to moderately steep. The maximum elevation is less than 200 feet. Essex and Scituate soils occupy the uplands. They are deep, gently sloping to moderately steep coarse sandy loams underlain at a depth of 18 to 30 inches by firm but coarse glacial till. The Merrimac soils occupy the nearly level plains and terraces.

The Hinckley-Merrimack-Muck association, occupying approximately 45% of the town's area, consists of broad, low ridges, nearly level plains and terraces, and knobby, irregular ridges. Intermingled with these are low, flat wet areas. The elevation of this association is generally between 50 and 150 feet. Hinckley soils are deep, excessively drained gravelly loamy sands on gentle to steep slopes. Merrimac soils are well-drained and

somewhat excessively drained sandy loams underlain by sand and gravel. Muck is an organic soil that occurs in low-lying areas.

In Hanover the Tidal marsh-Dune land-Coastal beach Association, which occupies approximately 2% of the town's land area, consists of tidal marshes along the North River. Tidal marshes vary greatly in composition. Some areas consist mainly of organic material and others of mineral material, chiefly silt and clay. Tidal marsh is valuable as habitat for various waterfowl, for some mammals, and for many marine organisms.<sup>12</sup>

### **Draft 2002 Plymouth County Soil Survey Update – General Soil Map<sup>13</sup>**

According to the Draft 2002 General Soil Map Update, there have been significant updates made to the soil areas in the Town of Hanover. In 1968, there were three main soil categories. The updated map shows five categories that include: Birchwood-Poquonock-Mattapoisett, Freetown-Swansea-Scarboro, Hinckley-Windsor-Deerfield, Plymouth-Carver and Woodbridge-Paxton-Ridgebury. The categories include the soils that were identified in 1968, however they may have been identified with other soil types and in different locations according to the update.

*Hinckley-Windsor-Deerfield* are now considered the most dominant soil unit in the Town of Hanover. In general, the soil is very deep and can range from being nearly level to steep and it is excessively to moderately well drained. Several minor soil types are also located in this map unit such as Merrimac, Sudbury, Wareham, Pipestone, Scarboro and Berryland. Many of the areas associated with this soil type are woodland, residential or industrial in nature. In general, the soils are well suited to building or development projects.

*Freetown-Swansea-Scarboro* is located at seven different locations in Hanover. Three smaller areas are located along the western border of the community, one larger and one smaller area lie toward the center <http://www.harrysbluesbar.com/main.htm> of town and two small areas lie along Hanover's eastern border. Very deep and very poorly drained soils formed in deep to shallow freshwater organic deposits underlain by glacial fluvial deposits in swamps and depressions characterize this soil unit. The majority of the areas with this unit designation are wooded or scrub-shrub wetlands, many of which are used for cranberry production.

*Woodbridge-Paxton-Ridgebury* soils are located in three separate areas of Hanover: the northeast corner of town; a smaller area along the eastern town boundary; and one other area in the very southwest corner. These soil types are formed in loamy glacial till on upland hills and ground moraines. Paxton and Woodbridge soils are well suited for

<sup>12</sup> Soil Survey of Plymouth County, Massachusetts. 1969. General Soils Map and description.

<sup>13</sup> Soil Survey Update, Plymouth County Massachusetts, General Soil Map Town of Hanover [INTERNET] accessed June 2007, <http://www.nesoil.com/plymouth/gsm/hanover.htm>

woodland productivity and cropland, however, Ridgebury soils are not due to wetness and are considered to be a wetland hydric soil.

*Plymouth-Carver* soils are primarily only found along the eastern boundary of Hanover, they are excessively drained and formed in loose sandy ice contact and glacial outwash deposits. This soil type is usually forested with pitch pine, white pine and scrub oak and is often used for home building or cropland. It is poorly suited for cultivated crops and pasture because it has low water holding capacity. This soil type is also often associated with groundwater aquifer recharge areas.

*Birchwood-Poquonock-Mattapoissett* soils are located in two areas in the southeastern portion of Hanover. These soils types are deep and well to poorly drained. Birchwood is usually found on the footslopes of hills, Poquonock on steep side slopes and Mattapoissett on low-lying flat areas along drainage ways. These soil types are poorly suited for dwelling units with on-site septic tank absorption fields due to slow permeability.

#### 4.1.3 Topography

Hanover forms part of the coastal lowland section of the New England physiographic province and has gently rolling to flat topography characteristic of this region. Hanover is shown on four USGS Topographic Maps: Whitman, Weymouth, Cohasset and Hanover. The elevation throughout the town ranges from 10+ feet above sea level at the headwaters of the North River to 177+ feet at the top of Walnut hill in the Northeast corner of Hanover. Other significant topographical features include several low hills found in the northeast and northwest sections of town, and low areas containing swamps, three of which are named. A former cranberry bog (Clark Bog) in the southeast and southwest sections of Hanover is also present, as well as a sand pit in the south and a gravel pit by Silver Brook.

Table Major Hills in Hanover	
Hills	Elevation
Walnut Hill	177± feet
(Water tower hill)	155± feet
Tumbledown Hill	140± feet
King Hill	140± feet

Source: USGS Topographic Maps; Whitman, Hanover, Weymouth, Cohasset Quadrangles

Drainage patterns throughout Hanover are determined by an extensive swamp and brook system which feed three major waterways: the Drinkwater River, the Indian Head River, and the Third Herring Brook. Most of the drainage from the western side of town flows into the Drinkwater River, eventually reaching the Indian Head River. Other brooks flow directly into the Indian Head River and The Third Herring Brook, both of which define

over half of the town's boundaries. These two waterways come together to form the North River at Hanover's borders with Pembroke and Norwell, and are a significant area resource.

#### **4.2 Landscape Character**

Participants at the June 19, 2007 public forum were asked why they live in Hanover and what gives the Town its own unique character. One respondent stated that he loves living in Hanover because "the whole Town Center area is just pristine and Briggs Stable is like looking at a Norman Rockwell painting." The responses varied from naming specific places and areas to general comments about the good, strong, quality of life that can be found in Hanover. Briggs Stable which is a horse farm in the Town Center area was mentioned several times for its uniqueness and visual appeal and Hanover Day which was held in June was also well received by residents who attended as evidence of the thriving civic pride in the community.

Many locations throughout the Town of Hanover provide the community with its own unique character and memorable points of interest. Numerous water resources like rivers, streams, brooks, ponds and wetland are abundant in Hanover and they provide both recreational opportunities and a home for wildlife and plant species. Hanover's roadways, seven of which are officially designated to be scenic are often tree-lined and scattered throughout town are old stone walls that either line the roadways. There are even smaller notable details in Hanover that are unique including at the intersection of Old Washington Street and Silver Street, the barely noticeable old granite marker that shows motorists how many miles away Plymouth and Boston are.

Another unique area in Hanover is the Four Corners section which is located along Route 139 which is an unofficial historic area. The buildings were constructed before zoning was instated and do not have the setbacks that are now required which gives the area a very pedestrian friendly, walkable feel to it. Four Corners was the original business center of Hanover. According to information from Barbara Barker of the Hanover Historical Commission, shipyards were located on the banks of the North River in the 1800s and became well known for the many ships launched in the Four Corners area.

The Town of Hanover, though it continues to experience growth, is a beloved community by its residents, not only for its good quality water supply, beautiful open spaces and recreational amenities and programs, but for its quality of life and civic pride.

#### **4.3 Unique Features/Environments**

A letter from the Natural Heritage and Endangered Species Program (NHESP) dated May 18, 2007 identified an uncommon Freshwater Tidal Marsh located in Hanover which is home to many species of rare plants and wildlife. The Freshwater Tidal Marsh is discussed in more detail in Section 4.6.4.

In addition to scenic resources identified in Section 3 of this plan, the 1997 OSRP identified several features/resources unique to the Town of Hanover, they include:

*Rainbow Bridge:* A footbridge across Third Herring Brook was used as a shortcut from the Hanover yards to Fox Hill. Named for its bowed shape, it has long since disappeared.

*Hanover Yards (1668-1844):* Looking downstream from the stone bridge, eleven shipyards could be seen with vessels in various stages of construction during the peak years of shipbuilding activity. From 1800 to 1808 at least 10 ships per yard were built here by a work force of 400 ship carpenters. Two plaques mark the sites.

*The Crotch:* At the head of the North River, formed by the confluence of the Indian Head River and Heritage Brook, this is one of only three major freshwater tidal marshes in Massachusetts.

*Luddam's Ford:* The North River's easternmost foot crossing on the Old Bay Path going from Plymouth to Boston was named for the guide who carried Governor Winthrop across the river in 1632 on the way to visit Governor Bradford of Plymouth.

*Chapman's Landing:* This was the westernmost shipping point on the North River. Iron ingots were landed at Humarock for shipment to the Hanover forges. The North River built steamship "Mattakeesett" was used in this service.

*Luddam's Ford Fish Ladder:* Site of the early mills and Curtis Anchor Works, famous for the casting of the "Constitution" anchor. Later, the site of the Clapp Rubber Mills (1873), largest of its kind in the country. The remaining dam forces migrating fish to scale the fish ladder in their efforts to reach spawning locations upstream. Conservation land on both sides of the Indian Head River provides canoe access to the Wampanoag Indian Passage.<sup>14</sup>

#### 4.3.1 Herring Brook Valley

The Herring Brook Valley is located where the Indian Head River and North River meet at the Hanover/Pembroke line<sup>15</sup>. The uniqueness of this area is characterized by freshwater wetlands that are influenced by the rise and fall of daily tides. In fact, the Herring Brook Valley is one of the largest examples of the globally rare tidal freshwater marsh habitat in New England. In addition to providing a home for numerous plant and wildlife species, the area also provides spectacular scenic vistas and recreational experiences through canoeing and kayaking.

<sup>14</sup> The North and South Rivers Guide: North and South Rivers Watershed, Assoc. Inc. 1993

<sup>15</sup> Wildlands Trust Special Focus Areas, <http://www.wildlandstrust.org/documents/focus.html#herring>, viewed August 9, 2007.



#### 4.3.2 Areas of Critical Environmental Concern

The Town of Hanover does not contain any State recognized Areas of Critical Environmental Concern (ACECs) as regulated by the Executive Office of Environmental Affairs (EOEA). ACECs are areas in Massachusetts that are recognized for their unique natural and cultural resources and are most often nominated at the community level and then reviewed by the state. To be eligible for ACEC nomination, an area must include at least four of the eleven following features:

- *Fishery Habitat* – anadromous/catadromous fish run, fish spawning area, fish nursery area, or shellfish bed;
- *Coastal Features* – barrier beach system, beach, rocky intertidal shore, or dune;
- *Estuarine Wetlands* – embayment, estuary, salt pond, salt marsh, or beach;
- *Inland Wetlands* – freshwater wetland, marsh, tidal flat, wet meadow, swamp, or vernal pool;
- *Inland Surface Waters* – lake, pond, river, stream, creek, or oxbow;
- *Water Supply Areas* – surface water reservoir, reservoir watershed, groundwater aquifer, or aquifer recharge area;
- *Natural Hazard Areas* – floodplain, erosion area, or unstable geologic area;
- *Agricultural Areas* – land of agricultural productivity, forestry land, or aquaculture site;
- *Historical/Archaeological Resources* – buildings, site, or district of historical, archaeological, or paleontological significance;
- *Habitat Resources* – habitat for threatened or endangered plant or animal species, habitat for species of special concern, or other significant wildlife habitat; and
- *Special Use Areas* – undeveloped or natural area, public recreational area, or significant scenic site.

The Town of Hanover has two significant and unique natural communities associated with the North River and the Indian Head River which are worthy of reviewing in terms of an ACEC nomination. Due to the location of these rivers, Hanover should consult with Pembroke and Norwell about submitting a nomination form. For more information about nominating an area for ACEC designation, go to the following website:

<http://www.mass.gov/dcr/stewardship/acec/nominate.htm>.

#### 4.3.3 Local Trails and Conservation Properties

The Hanover Open Space Committee has put together descriptions of a number of significant local trails and conservation properties in the community which include the Merry Property, Luddam's Ford Park, the Colby Phillips Property and the Plain Street Property.

### **Merry Property<sup>16</sup>**

The Merry property is a compact eleven-acre town-owned property located off Broadway directly behind the old fire station, which was renovated by the Hanover Historical Society. Hanover benefits from having both historical and living exhibits all in one place within this property. Parking for approximately six cars is provided directly in front of the fire station and a path leads into the conservation area from the side lawn.

There is a well-trodden cart road that brings visitors to a small wetland area and from there, the trail heads upland. Stay on the path and a magnificent stone wall will catch your eye, and you wonder how anything so beautiful could have been built to last so long. Where it punctuates the cart path with what was probably a gateway for cows at one time; there is a large flat boulder; (seating for two; if you will). Inscribed on its' now smooth surface is aged, black graffiti. "I love H"? and hearts of old bear witness to the relevance of this respite for all time. Here is the perfect spring exile, nestled under the tall oaks. A good book; a picnic basket' or just a quiet moment are easy companions to this setting. Farther along you will eventually enter the Phillips Wildlife Sanctuary. Retrace your steps almost to the beginning and you have an option of turning left at a fork into a narrow trail leading to higher ground and a stand of tall pines. Your meandering will again lead to the stone wall and main pathway into the acreage. The Merry property is just the perfect open space area for a weekend mini hike.

### **Luddam's Ford Park<sup>17</sup>**

Luddam's Ford Park has been referred to as the "gem" of Hanover. This "diamond in the rough" is located along the Pembroke border on Elm Street at the fish ladder where the Indian Head River widens into Luddam's Ford Pond. This beautiful 19.5-acre resource contains several habitats including woodlands, open fields, a stream and a pond. Luddam's Ford Park supports diverse wildlife and is currently enjoyed by fishermen, picnickers, walkers/hikers, bikers, boaters, and bird-watchers. There are several well-defined trails that skirt around the pond and follow the former railbed from Elm Street to Water Street. The pond created along the Indian Head River by the Luddam's Ford dam is stocked with coho salmon and shad and provides excellent fishing. The recently upgraded canoe launch is easily accessible for anyone wishing to experience the park from the water.

The area is important for it's historic as well as its environmental significance. Luddam's Ford was named after James Luddam, who carried Massachusetts Bay Colony's Governor Winthrop on his back as they forded the river in 1632. The pond is surrounded by open fields where a succession of mills were once located, including the Anchor

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<sup>16</sup> Town of Hanover, Open Space Committee, by Bruce Ryerson, "Merry Property," [INTERNET] accessed June 2007 <http://www.hanover-ma.gov/open-space.shtml>

<sup>17</sup> Town of Hanover, Open Space Committee, by Doug Thomson, "Merry Property," [INTERNET] accessed June 2007 <http://www.hanover-ma.gov/open-space.shtml>

Works, which forged the anchors for the U.S.S. Constitution. The park contains approximately 2 miles of an old railbed that is bordered by historical foundations.

This property is very near and dear to the hearts of many Hanover residents and there has been a consolidated effort to improve this conservation land. Projects have included fish ladder improvements; brush removal; annual clean-ups; canoe launch improvements; parking lot improvements; and the installation of historical guide and sign posts.

### **Colby Phillips Property<sup>18</sup>**

The Colby Phillips property is a 135 acre parcel that provides what is probably the most alluring walk on public land in Hanover. The best access lies off the dead end section of Circuit Street that extends past the fire station at the intersection of Pleasant Street, Circuit Street and Rte Route 139. Parking is available at the dead end cul-de-sac where visitors can walk a short distance up the street to the town owned access. A wide dirt road on the left passes between 959 (a shingled house with red trim) and 969 (a white house) and this road turns into a path which passes the private Darling Cemetery, with headstones dating from the early 1800s.

The Colby Phillips walk follows a beautiful, clear trail over a small brook and continues nearly three-quarters of a mile through an open forest of mixed pines, hemlocks, and beech trees. The land is mostly high and easily traversed at all but the wettest times of the year. Several small offshoot paths lead to still quieter destinations including a grove of large holly trees. For anyone wondering why we need to protect the limited open space remaining in our town, you need only experience the serenity of this walk.

### **Plain Street Property<sup>19</sup>**

On the north side of Plain Street, behind many of the houses which lie west of Old Farm Road, there is a 60 acre conservation property ideally suited for the fitness enthusiast. The town of Hanover has owned this former fireworks property for many years. However, the multiple access points along Plain Street have no convenient parking and require walking along narrow rights-of-way across what would appear to be private yards. Consequently, this property is very much underutilized. New, town owned access to this property is now available via a number of recently acquired unbuildable house lots off Tucker Road, Aspen Drive and Bailey Road.

During World War II, most of Plain Street was closed and the National Fireworks Company built a magnesium manufacturing plant under the name of Pilgrim Ordnance. The roads visible today were built on both sides of Plain Street to connect the many small buildings. The swamp land near the property was an ideal location to contain the extreme fire hazards associated with magnesium production. Interestingly, the military also briefly

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<sup>18</sup> Town of Hanover, Open Space Committee, by Doug Thomson "Colby Phillips Property," [INTERNET] accessed June 2007 <http://www.hanover-ma.gov/open-space.shtml>

<sup>19</sup> *Ibid.*

used the facility to house prisoners of war. Soon after the end of the war, the military closed the plant and sold all of the property.

Today, the old roads provide a clear, dry path in any season and the surrounding land has returned to a near natural state with little evidence of its past. The best route for travel is to turn right on the main loop and head down the very long straight, westward path. Trees now arch over the road, bringing welcome shade during your summer jogs. The wetlands also provide some natural air conditioning although you will want to keep moving to avoid the mosquitoes in peak season. An array of small woodland creatures will scurry through the underbrush as you arrive. At the end of your straightaway, the road is briefly disrupted by development. The path rises and goes to the right, quickly rejoining the main loop heading south.

#### **4.4 Water Resources**

Hanover has a number of water resources and a varied natural landscape that includes streams, ponds, wetlands and wildlife habitats. Hanover's eastern and southern borders are comprised of three main waterways, the North and Indian Head Rivers along the south and southeast, and the Third Herring Brook along the east. (The latter two are both tributaries, and the town border is marked by their confluence.)

##### **4.4.1 Surface Waters**

Named Ponds and swamps in Hanover include: Forge Pond, Hackett Pond, Shinglemill Pond, Peterson Pond, Mill Pond, Factory Pond (a tributary of the Indian Head River in the south of town), Pine Island Swamp, Wampum Swamp, Peg Swamp, Hell Swamp and a small portion of Beech Hill Swamp in the southwestern section of town (the majority lies in Rockland).

In addition to the previously discussed rivers that form the town's borders, another prominent river in the Town of Hanover is the Drinkwater River, which meanders through the western side of town. Numerous streams also meander across the town, including: Ben Mann Brook Shinglemill Brook, Silver Brook, Molly's Brook, Torrey Brook, Iron Mine Brook, Cushing Brook and Longwater Brook.

The major river within Hanover consists of the North River. The North River is approximately 8 miles long and it is primarily a tidal river formed by the confluence of the Indian Head River and Herring Brook. It flows through Hanover, Pembroke, Norwell, Marshfield and Scituate and much of its bordering lands and marshes have been designated by the Natural Heritage & Endangered Species Program (NHESP) as priority or estimated habitat for rare and endangered species.

The North River was the first designated Scenic River in Massachusetts by the Massachusetts Department of Environmental Management pursuant to the Scenic and Recreational Rivers Act, G.L.c.21, s. 17B and the North River Commission Act, c.367, s.62 of the Acts of 1978. Designation under the Scenic River Act means that a 300 foot

corridor is regulated by the North River Commission, which oversees development in the corridor. The North River has also been designated by the Federal Government as a natural National Landmark for its characteristics, which include a coastal estuary with freshwater tidal habitat.

#### 4.4.2 Watersheds

Hanover is located entirely in the North and South Rivers Watershed which is a portion of the South Coastal Watershed,<sup>20</sup> which has a drainage area of approximately 241 square miles and encompasses either all or part of 19 communities. Several unique features of this particular watershed are that it is one of eleven watersheds in Massachusetts that discharge directly into the ocean and that it contains the Plymouth-Carver aquifer (located in the southern part of the watershed), which provides the majority of the drinking water for the region and has been designated as a sole source aquifer by the Environmental Protection Agency (EPA). Within the watershed there are over 350 lakes and ponds scattered throughout, numerous wetlands and Silver Lake which is 620 acres. The watershed is also significant because a diverse and large number of rare and endangered species live in the region.

Planning for the South Coastal watershed has included developing priorities such as<sup>21</sup>:

- *“Involve all stakeholders and develop a Silver Lake Regional Natural Resources Management Plan through the Silver Lake Stewardship Project.*
- *Increase awareness about water quality and water quantity impacts from stormwater runoff and establish strategies that engage homeowners, developers, and public officials to protect and restore water quality and quantity from those impacts.*
- *Develop a Regional Open Space and Recreation Plan involving local stakeholders.*
- *Promote Smart Growth strategies that minimize the loss of open space and biodiversity of upland, freshwater, and coastal ecosystems, and protect and/or restore ground and surface water quality and quantity from current and future land use impacts.*
- *Continue to identify opportunities to develop and/or nurture alliances for stream teams, lakes and ponds associations, and watershed associations in areas without environmental stewardship.”*

A comprehensive South Coastal Watershed plan was completed in December 2003 by a private consultant and funded by the Executive Office of Environmental Affairs (EOEA). The purpose of the project was to provide an opportunity for the watershed communities to work together to prioritize regional open space and recreational land acquisition and

<sup>20</sup> A watershed is an area of land from which precipitation drains into a wetland system or body of water.

<sup>21</sup>Executive Office of Environmental Affairs, “South Coastal Watershed” [INTERNET] <http://www.mass.gov/envir/water/southCoastal/southCoastal.htm>, 21 May 2007.

protection goals. Another goal set by EOEa was to work towards consistency in open space planning and municipality goals to reduce conflicts between planning efforts. Some of the higher priority discussion items that directly or indirectly affect the Town of Hanover include:

**Inland Water Resources (Surface Water and Groundwater)**

- Protect both existing and potential water supplies through:
  - Zoning
  - Aquifer overlay districts
  - Acquisition
- Prioritize wetland preservation and restoration (wildlife habitat)

**Wildlife**

- Identify and protect habitat corridors and linkages
  - Identify habitat corridor barriers and key inter-town connections
  - Identify regularly used hunting areas
- Acquire Land for habitat protection
  - Use BIOMAP for parcel prioritization/rankings

**Scenic, Historic & Cultural Resources**

- Identify and protect historically and culturally significant sites and trails
  - Promote cross-town self-guided historical/cultural trails and tours
- Protect/save working and historic farms

**Passive Recreation**

- Promote inter- and intra-town connections for existing trail systems:
- Promote public access (i.e. new access points, improved identification/public awareness) to sites for:
  - Swimming
  - Fishing
  - Boating
  - Cross country skiing, snow-shoeing
  - Birding
- Promote development of nature/self-guided trails (i.e. Quest Trails)

**Active Recreation**

- Promote “directed use” of motorized recreational vehicles (all terrain vehicles, dirt bikes, snowmobiles, jet-skis, etc.)
- Encourage the use of hardy species for sports fields, to reduce the need for intensive watering

In addition, several towns in the North/South River Watershed have adopted strategies that could be implemented in Hanover for protecting Open Space and for reducing



impacts to the resource areas in the town. Low Impact Development/Smart Growth and the local Greenscapes model should be encouraged by the Planning Board, and developers and homeowners should be educated on the benefits of this type of watershed-friendly development.

#### **4.4.3 Wetlands**

The streams, brooks and rivers in Hanover support extensive wetlands systems which generally follow the dominant drainage patterns and waterways in the town.

The Drinkwater River system and contributing streams flank wetlands on the western side of Hanover. The Benn Mann Brook, Shingle Mill Brook, Longwater Brook, Cushing Brook, French Stream and Drinkwater River all have major wetland areas associated with the channeled waterways. The generally flat topography with low, rolling hills, abundance of water, and favorable soils control the local hydrology, creating several large open swamps. Hell Swamp, Pine Island Swamp, Peg Swamp, and a section of Beech Hill Swamp are aligned across the center of the Town, and each of these swamps, eventually flows into the Drinkwater River System (even the Beech Hill Swamp which first drains into Rockland and back into Hanover along Frenches Stream). Wetlands in the vicinity of Shingle Mill Brook and the northern section of Drinkwater River support certified vernal pools.

Wetlands in the southeast corner of Hanover, including some historic cranberry bogs, are present along Iron Mine Brook, and another large, unnamed wetland system is present east of the Town Center. The remainder of the Indian Head River Drainage Area, the southern portion of town, has smaller wetland areas scattered along tributaries or bordering the river.

The northeast part of town has few wetlands other than those associated with Hell Swamp; however, farther south along the Third Herring Brook where the brook meets Molly/Silver Brook, the waterway opens up to form the Old Pond Meadows. Although the majority of the meadows are located in Norwell, a significant section of land in Hanover is also encompassed by this wetland system. Also, wetlands associated with tributaries to the Third Herring Brook are scattered along the eastern edge of town, which is defined by this major waterway.

Hanover does have a local wetlands bylaw (approved by the Attorney General in 1986), the purpose of which is to protect the wetlands, related water resources and adjoining land areas in Hanover by controlling activities deemed by the Hanover Conservation Commission likely to have a significant or cumulative effect on public/private water supply, groundwater, flood control, erosion and sedimentation control, storm damage prevention, water pollution control, fisheries, wildlife habitat, recreation, aesthetics and agriculture values. The Bylaw requires that any activity within wetland resource areas or the 100 foot buffer around wetland resource areas obtain a permit from the Conservation Commission.

#### **4.4.4 Flood Hazard Areas**

The most recent available Flood Insurance Rate Maps (FIRM) are from 1982 for the Town of Hanover. FIRM maps show the areas subject to flooding in town and they designate zones of flooding including information on the probable depth of maximum high water in the floodways.

Because of Hanover's extensive river and tributary system, many flood hazard areas are spread throughout the town. All of the streams and brooks which are part of the Drinkwater River system have areas of potential flood hazard. On the west side of Hanover the Shingle Mill Brook, Cushing Brook, Ben Mann Brook, and the Torrey Brook present limited flood hazard as well as larger open wetland or swamp areas. Flooding from the Longwater Brook and French Stream is more confined to areas directly adjacent to the banks of the waterways. The Drinkwater river is also fed by Pine Island Swamp, Peg Swamp, Hell Swamp and Wampum Swamp, as well as an unnamed wetlands north of Route 139 between Plain Street and Grove Street and an area behind Cedar School all of which are marked as areas of 100-year flood hazard. The last areas of flood hazard area associated with the Drinkwater River system is a section of Beach Hill swamp on the western boundary of Town.

Flood hazards associated with Third Herring Brook and the Indian Head River drainage areas are more limited than the Drinkwater river system. Molly Brook and Silver Brook drain into the Third Herring Brook with few areas of expansive flood hazard. The most notable exception is Old Pond Meadows along Third Herring Brook; however, the majority of this wetland is in the bordering town of Norwell. Iron Mine Brook, part of the Indian Head River Drainage area, has several wetland and swamp areas which present 100-year flood hazard. These wetland areas are located to the west of Route 53 between Hanover Street and Silver Street and surrounding the former cranberry bogs downstream. Other flood areas along the Indian head river are limited, aside from a few small unnamed streams which could potentially flood areas where water drains into the Indian Head River. The last area marked on the FIRM and Floodway maps, below the Curtis Crossing Dam forming the headwaters of the North River, shows a wetland area subject to flooding in the southeast corner of the Hanover.

It should also be noted that there are a few wetland areas in Hanover which do not appear on the FIRM maps. The USGS topographic quadrangles which include Hanover show a wetland area between Colonial Drive and Main Street in the center of Hanover, a small wetland area northeast of the intersection of Whiting, Cedar and Pleasant streets, and an area equidistant between Forge Pond and the town line between Rockland and Hanover. Four other small wetland areas which are not included on the Firm or Floodway maps are an area west of Bardin Street, an area northeast of the intersection of Center Street and Old Cross Street, an area south of Route 139 and west of Tindale Way, and as area north of the intersection of Grove Street and Main Street.

#### 4.4.5 Water Supply & Aquifer Recharge Areas

A large aquifer protection zone is located within the eastern portion of the Town of Hanover and it encompasses most of the Route 53 commercial corridor. This zone is defined as the area within which the surface water and ground water directly supply the Town wells. Three wellhead protection zones surrounding three well fields with a total of seven wells are located within the aquifer protection zone.

The Town of Hanover also enforces a Water Resource Protection Bylaw (§ VI, 6-15 of the General Bylaws). The purpose of the Water Resource Protection Bylaw (approved by the Attorney General in 1981 and amended in 2000) is to protect the water supply of the Town of Hanover from harmful and hazardous pollutants and contaminants by preventing the degradation of surface and ground water supplies within the district. The district is considered an overlay to other zoning districts and it includes several well protection zones and an aquifer protection zone.

Changes in land use, expansion of existing facilities, changes in drainage, wastewater disposal, logging, earthmoving, application of herbicides, pesticides and fertilizers, storage and handling of hazardous materials are regulated by the Water Resource Protection Bylaw.

New construction projects in the Water Resource Protection District must obtain a certificate of compliance from the Board of Public Works prior to a building permit being issued. The certificate of compliance enforces and ensures that performance standards required by the Board of Health are being met. The overall purpose of the specific performance standards is to:

- Limit nitrogen loading from sewage flow and fertilizer application to amounts which will be adequately diluted by natural recharge,
  - Prevent groundwater contamination from toxic and hazardous substances, and
  - Ensure continued groundwater recharge, clearing, earthmoving and paving.
- <http://www.mass.gov/dep/water/drinking/4122000.pdf>  
<http://mass.gov/dep/water/resources/tmdls.htm>

#### 4.5 Vegetation

*The value of vegetation as a natural resource is unfortunately often overlooked or taken for granted in many communities. The usefulness of vegetation extends beyond its traditional role of providing aesthetically pleasing views and variety in the landscape. Woodlands, wetlands, abandoned fields and orchards are all forms of vegetation. In addition to creating a landscape, vegetation plays a variety of roles:*

- *Protects surface and groundwater bodies by stabilizing soils and preventing erosion,*
- *Acts as a visual and sound buffer between incompatible uses,*
- *Provides wildlife habitat,*
- *Provides recreational opportunities, and*
- *Improves air quality.*<sup>22</sup>

#### 4.5.1 General Inventory

Hanover is vegetated with a variety of plant species commonly found on well drained upland soils throughout southeastern Massachusetts. Pine and oak forests dominate the upland forests. Other species include hemlock, swamp maple, hickory, cedar, wild cherry and birch.

According to the May 18, 2007 letter from NHESP, *“of the rare species currently known from Hanover, many are associated with the very uncommon Freshwater Tidal Marsh and the Indian Head and North Rivers. The plants are pretty much habitat specialists to Freshwater Tidal Marshes.”*

#### 4.5.2 Forest Land

The most common forest types in eastern Massachusetts is the *Central Hardwoods – Hemlock – White Pine* forest which includes oaks and hickories (these are dominant) and red maple, chestnut oak, black birch and scarlet oak are also common. Hemlock is the most common softwood and on sandy sites, white pine is dominant.<sup>23</sup>

Hanover is fortunate to have forest land dispersed throughout the community. By looking at an aerial photograph, it can be seen that there aren't large tracts of untouched forestland, but smaller pieces that have been transected by either commercial or residential development. Data available from MA GIS shows that in 1971, Hanover had 5,864 acres of forest land which decreased to 5,452 acres in 1985 and 4,944 acres in 1999. Today, approximately 49% of the Town is forested.

According to the Natural Heritage & Endangered Species Program (NHESP), Hanover has areas of possible Primary Forest, untilled woodlots and wooded pastures which generally have greater biodiversity than areas that have been tilled. Information from NHESP states that *“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 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 the region.”*

<sup>22</sup> Town of Hanover, 1979, Hanover Open Space Plan.

<sup>23</sup> Massachusetts Forestry Association, “Common Forest Types in Massachusetts,” [INTERNET] [www.massforests.org](http://www.massforests.org), 13 July 2007.

#### 4.5.3 Agricultural Land

Early industries in Hanover revolved around farming, small mills and shipbuilding at points along the North River. Data available from MA GIS indicates that in 1971, Hanover had approximately 303 acres of agricultural land which consists of cropland and pasture. In 1985, it decreased to 252 acres and in 1999, it decreased even further to only 143 acres (only 2% of the Town's land area), a loss of 160 acres between 1999 and 1971. Most recently, the Town voted to use Community Preservation Act funds to purchase the Cervelli Farm Property for open space and/or recreational purposes.

The Cervelli Farm property on King Street is, without exception, the largest agricultural open space remaining in the Town of Hanover. Located on the west side of King Street, it encompasses most of the southern shore of Forge Pond. Approximately half of this nearly 70 acre property is high quality open farmland. As of August 2007, the property is currently being farmed.

Agricultural land in Massachusetts is a finite natural resource that is threatened by competing land use pressure and the loss of this land has a detrimental effect upon environmental quality. Agricultural land reduces flooding, replenishes ground water supplies, enhances wildlife habitat, and maintains the landscape's aesthetic and historic quality. Every effort should be made to ensure that Hanover's agricultural land remains available for present and future generations.

#### 4.5.4 Rare Plant Species

According to a letter written to Beals and Thomas, Inc. on May 18, 2007, the Natural Heritage & Endangered Species Program (NHESP) has identified five rare plant species in the Town of Hanover:

**Water Marigold** (*Bidens beckii*): One of only a few members of the aquatic sunflower family, it is a perennial plant that has opposite finely divided leaves underwater and toothed leaves above water. Its yellow daisy-like head flowers between July and September. Water marigolds are sensitive to water pollution and they are a food source for ducks. As of February 1, 2007, this vascular plant is a watch listed species in Massachusetts because it is uncommon.



**Estuary Beggar-Ticks** (*Bidens hyperborean* var. *colpophila*): This is an herbaceous plant with yellow daisy-like or button-like flowers and opposite leaves. The plant is characteristic of muddy margins and exposed banks of large tidal rivers. As of 2003, the plant is considered an endangered species in Massachusetts. It is rare because it is near the southern limit of its range and fewer than five communities it inhabits are found in Massachusetts.

**Hemlock Parsley** (*Conioselinum chinense*): Characteristics of this plant include white flowers, hollow stems and heavily divided leaves, typically two to five feet in height. Habitat for this plant is most commonly sphagnum knolls within coniferous forested fens and hardwood forest fens and it flowers between July and September. As of 1997, this is a species of special concern in Massachusetts.

**Estuary Pipewort** (*Eriocaulon parkeri*): Estuary Pipewort is found within the Indian Head River freshwater tidal marsh and it is a small, delicate, erect perennial. It is grass like in appearance and grows 2-6cm in length with small whitish to yellowish flowers that appear from late July to late September. In Massachusetts, as of 1997, it is listed as an Endangered Species.

**River Arrowhead** (*Sagittaria subulata*): In Massachusetts, River Arrowhead has been listed as an Endangered Species since 1928.

#### 4.5.5 Invasive Species<sup>24</sup>

In Massachusetts, Invasive Species are defined as those that are exotic in origin and have the ability to out-compete native vegetation.<sup>25</sup> The major and most problematic invasive species presently within Hanover consist of glossy buckthorn (*Rhamnus frangula*), Japanese barberry (*Berberis thunbergii*), oriental bittersweet (*Celastrus orbiculata*), black swallowwort (*Cynanchum louiseae*), Japanese knotweed (*Polygonum cuspidatum*), purple loosestrife (*Lythrum salicaria*), common reed (*Phragmites australis*), garlic mustard (*Alliaria petiolata*), and Asian milfoil.

##### **Glossy Buckthorn**

Glossy buckthorn grows in both upland and wetland areas, and forms a monoculture such that other plants cannot grow. It is a shrub or small tree that can grow up to 22 feet and have a 10 inch wide trunk. Eliminating the species through fire is a common eradication technique and it should only be done under supervision. Young plants can be easily removed by hand pulling as the root systems are shallow.

##### **Japanese Barberry**

Although technically an upland species, this thorny shrub can also grow on hummocks within wetlands. It is a dense spiny shrub with brown branches and small leaves and typically it alters soil pH, nitrogen levels and biological activity in the soil. Not planting Japanese Barberry in the first place is typically a good management technique.

<sup>24</sup> Email from Steve Ivas, Principal, Ivas Environmental to Patrick Gallivan Conservation Agent, Town of Hanover, dated June 23, 2007, and Plant Conservation Alliance, "Fact Sheets," [INTERNET] accessed 16 July 2007 <http://www.nps.gov/plants/alien/fact.htm>

<sup>25</sup> Invasive Plants in Massachusetts brochure produced by the Town of Orleans Invasive Species Committee.



### **Oriental Bittersweet<sup>26</sup>**

Oriental bittersweet tends to grow in upland areas, and is the worst vine in Hanover. It is a deciduous woody perennial plant that grows as a climbing vine and trailing shrub. It typically smothers existing vegetation that dies from shading or breakage. Usually a combination of methods to eradicate this species works the best, both chemical and manual.



### **Black Swallowwort**

Black swallowwort is limited to upland areas and is a type of vine. It can form patches that crowd out native vegetation and it is tolerant of a range of moisture and lighting conditions. To prevent it from establishing itself, early detection and management is important. Removal of all of the plants at a site is the best practice.

### **Japanese Knotweed**

Japanese knotweed is prevalent through Hanover. Although typically an upland species, it can grow within the outskirts of wetlands as well. This species is extremely difficult to eradicate, can grow to over 10 feet in height and forms dense thickets that often alter natural ecosystems. It spreads very quickly and is a threat to riparian areas. Grubbing and hand removal are common eradication techniques, however, the entire plant, including roots must be removed.



### **Purple Loosestrife<sup>27</sup>**

Along with common reed, purple loosestrife is the worst invasive species within wetlands. This species has purple flowers, adapts well to natural and established wetland areas and it forms dense homogenous stands that restrict and suffocate native plant species. Small infestations can usually be pulled by hand, but for larger problems, herbicides commonly are used.

### **Common Reed (Phragmites)**

Along with purple loosestrife, common reed is the worst invasive species within wetlands. Common reed is a tall grass that flowers in July or August and spreads by sending out rhizome runners. The plant can invade native communities rapidly and change marsh hydrology and effect wildlife habitat. In areas where there is a significant population, the species is best eradicated by using herbicides.

<sup>26</sup> Photo from Plant Conservation Alliance website <http://www.nps.gov/plants/alien/fact/ceor1.htm>, accessed 17 July 2007

<sup>27</sup> Photo from Plant Conservation Alliance website <http://www.nps.gov/plants/alien/fact/lysa1.htm>, accessed 17 July 2007



### Garlic Mustard<sup>28</sup>

Garlic Mustard is present in uplands adjacent to wetlands and is common in the Town of Hanover. It poses a threat to native plants species because it monopolizes light, moisture, nutrients, soil and space. The seeds of garlic mustard can stay in the soil and become active for up to five years, so managing the species must be done long-term to prevent the seeds from production. Hand pulling, stem cutting and using pesticides as a last resort are all eradication techniques.



### Asian Milfoil

Asian Milfoil is a submergent species that forms a nearly solid mat within Jacobs Pond. It is an aquatic plant that prevents light from penetrating the water to serve native plant species. It enjoys areas that have been affected by man-made disturbances. This plant can either be hand raked or large harvesting equipment can be used.

## 4.6 Fisheries & Wildlife

### 4.6.1 General Inventory

The Town of Hanover is home to a number of wildlife species commonly found in Eastern Massachusetts. They include:

Table 4-6: Common Wildlife and Fish Species in Southeastern Massachusetts		
Rabbit	Trout	Turkey Vultures
Possum	Shad	Crows
Raccoon	Herring	Blue Jay
Fox, Red and Gray	Chain Pickerel	Cardinals
Coyotes	Large Mouth Bass	Chickadee
Deer	Small Mouth Bass	Red Wing Black Birds
Squirrel, Red, Gray, Flying	Yellow Perch	Grackles
Bats	White Perch	Starlings
Chipmunk	Sunfish, Pumpkin Seed, Blue Gill	English Sparrows
Moles	Suckers	Morning Doves
Mice	Minnows and other small fish	Bob White Quail
River Otter	Gray Horned Owl	Ruffed Grouse

<sup>28</sup> Photo from Plant Conservation Alliance website <http://www.nps.gov/plants/alien/fact/alpel1.htm>, accessed 17 July 2007

Beaver	Bard Owl	Ring Neck Pheasant
Mink	Screech Owl	Canadian Geese
Muskrat	Saw Wet Owl	Mallard
Skunk	Hawk	Swans
Fisher	Egrets	Great Blue Herron
	Osprey	

*Source: 1997 Hanover Open Space and Recreation Plan and 2007 Open Space Committee*

Areas of the North River, downstream from Hanover, provide an important habitat for spawning and migration of Alewife, American shad White perch, Rainbow smelt, and Atlantic tomcod fish species. Atlantic salmon are listed as using this same area as a migratory area. In addition, the outer estuary area of the North River is listed as shellfish growing waters for mussels and oysters.

#### 4.6.2 Vernal Pools

Vernal pools serve as a breeding ground and home to a number of species. According to NHESP, “*vernal pools fill with water in the autumn or winter due to rising ground water and rainfall and remain ponded through the spring and into summer. Vernal pools dry completely by the middle or end of summer each year, or at least every few years. Occasional drying prevents fish from establishing permanent populations which allows amphibian and invertebrate species who rely on breeding habitat that is free of fish predators to use them for habitat.*” As of April 13, 2007, the Town of Hanover has 21 certified vernal pools, several of which are in clusters and many more potential vernal pools. Hanover’s vernal pools are identified on Map 4 which is located in Appendix A.

The clusters of PVPs/CVPs provide extra habitat value for species that use them for breeding because each pool is different and provides alternate habitats in different years and seasons. Vernal pool clusters that are also in primary forests are important for biodiversity, an example of which occurs in the northwest portion of town. Land that is primary forest and contains vernal pool clusters would be excellent to consider for acquisition to help protect the biodiversity of Hanover.

According to the Conservation Commission, there are numerous potential vernal pools (PVP’s) in Hanover and the Commission is currently developing a plan to identify and certify all PVP’s that meet the requirements. At the present time Massachusetts State Regulations establish vernal pool habitat 100’ around vernal pools where the area lies within a wetland resource area – a much larger undisturbed buffer area (that includes adjacent uplands) is recommended. Strengthening the buffer requirements, educating the public about the importance of vernal pools and continuing to identify and certify them are all initiatives that will continue to be important.

#### 4.6.3 Rare Animal Species

The population status of rare animals in Massachusetts is described using three categories: special concern, threatened and endangered:

- Special concern species have either experienced a decline that could threaten the species without intervention, or whose populations are so small, localized, or dependant upon specialized habitats that they could become threatened.
- Threatened species are likely to become endangered in the foreseeable future.
- Endangered species are in danger of extirpation from Massachusetts.

According to a letter written to Beals and Thomas, Inc. on May 18, 2007, the Natural Heritage & Endangered Species Program (NHESP) has identified six rare animal species in the Town of Hanover (see Appendix E):



**Spotted Turtle (*Clemmys guttata*):** In general, spotted turtles prefer shallow water like boggy ponds, muddy streams and tamarack swamps. They are usually no more than 4.5 inches long and have shells that are a brown/black color with yellow spots. Spotted turtles are very active in the spring and they tend to be more dormant during the summer months. As of 2003, the spotted turtle is considered to be a delisted species in Massachusetts.

**Four-Toed Salamander (*Hemidactylium scutatum*):**

The Four-Toed Salamander is the smallest salamander typically found in Massachusetts and can be identified by its four toes on the hind feet, a distinct constriction at the base of the tail and its belly is bright white speckled with black. They are usually between 2 and 3 inches in size and they breed in wetland areas. Threats to this species include road construction, development and timber harvesting around wetlands. As of 2007 it is listed as a species of Special Concern in Massachusetts.



**Eastern Box Turtle (*Terrapene carolina*):** The Eastern Box turtle is small with a dark brown or black shell and yellow, orange or reddish markings. They are most typically found in woodlands, fields or bogs. Threats include habitat destruction, road mortality and collection by individuals for pets. Protection of habitat, including ensuring that it does not become fragmented is important. As of 2006, the Eastern Box Turtle is considered to be a species of Special Concern.

**Spine-Crowned Clubtail (*Gomphus abbreviatus*):** The Spine-Crowned Clubtail is a type of dragonfly that are dark brown/black with bright yellow markings and green eyes and between 1 and 1.5 inches long. Typically this species lives near large streams or rivers with silty or sandy bottoms. Adults also may live near riparian areas, forested uplands and fields. Poor water quality, the disruption of natural flooding and

development of upland areas near river systems has an effect on their habitat. In Massachusetts, this has been listed as an Endangered Species since 2004.

**Eastern Pondmussel (*Ligumia nasuta*):** The Eastern Pondmussel is a freshwater mussel approximately 4 inches in length with a distinctive brown/black shell. Typically this mussel lives in protected areas of lakes and rivers and is threatened by habitat alteration. Pollution that abuts aquatic habitat, runoff from hazardous materials and gill damage to host fish by acid rain are significant threats to this species. It has been listed as a Species of Special Concern since 1953 in Massachusetts.

**Umber Shadowdragon (*Neurocordulia obsoleta*):** The Umber Shadowdragon is a dragonfly characterized by bright green eyes and metallic green highlights on the face, thorax and abdomen. Usually less than 2 inches in size, they are found on relatively unvegetated lakes and rivers and they do well in artificially created habitats like reservoirs and dammed sections of rivers. This species may be vulnerable to overuse of its habitat and shoreline development. They have been listed as a Species of Special Concern in Massachusetts since 2003.

#### 4.6.4 Natural Communities

The Town of Hanover is home to two natural communities that the NHESP recognizes as uncommon/exemplary, an estuarine intertidal fresh/brackish tidal swamp and an estuarine intertidal freshwater tidal marsh. Southeastern Massachusetts in general is also home to Atlantic White Cedar Swamps which are priority natural communities for protection.

The MA Natural Heritage & Endangered Species Program has identified the natural areas adjacent to the North River/Indian Head River as being critically important habitat areas. In addition to its importance for wildlife and plant species, the North River is a highly valued recreational area, as well as being a Scenic River under EOEA protection. Hanover needs to protect this important river corridor and should consider the importance of habitat values when making decisions about open space parcels.

##### **Freshwater Tidal Marsh**

Freshwater tidal marshes are very uncommon and are a globally rare habitat. They most often occur along free-flowing coastal rivers and they are characterized by salt intolerant plant species. This type of marsh is home to a number of rare species and it is tracked in Massachusetts by NHESP as a high priority natural community. Plant species that depend upon this community type include Estuary Beggar-Ticks, Hemlock Parsley, Estuary Pipewort and River Arrowhead. One large and high quality example of this community type occurs on the North River, at the confluence of the Indian Head River and (4th) Herring Brook.

Extensive damage to freshwater tidal marshes has already occurred from historic land uses, such as damming and filling. With the more recent trend of breached or intentionally deconstructed dams, the potential exists for natural restoration of additional

habitat. Two current threats to this community type are hydrologic alteration from excessive water withdrawal, and invasive plant species. In order to help mitigate any further damage, monitoring invasive species, determining hydrologic requirements, developing a system for monitoring hydrologic stress and preventing alteration of tidal shores should be considered.

#### **Fresh/Brackish Tidal Swamp**

Fresh/brackish tidal swamps are located along coastal rivers at the upper limit of tidal influence. In Hanover, one large example exists near the North River. They typically occur upstream of freshwater tidal marshes and are home to several rare and endangered plant species such as Long's Bitter-Cress, Hemlock Parsley and Gypsywort. Characteristics of this type of natural community include a dense shrub understory and a rich herbaceous layer. Alteration of river hydrology from large amounts of water withdrawal is a threat to this type of community, so determining hydrologic requirements and developing a system for monitoring hydrologic stress should be considered.

#### **Atlantic White Cedar Swamps**

According to NHESP, Hanover has several areas that are at least partly Atlantic White Cedar Swamps as identified by MassGIS's aerial photograph interpreter (no full evaluations have been done). Atlantic White Cedar Swamps are forested wetland communities with a dense canopy, deciduous shrub layer and sparse herb layer dotted with moss. They are most commonly associated with open bogs and red maple swamps. Major threats to this natural community include clearing for direct residential and commercial development and interferences with natural hydrological processes due to surrounding development.

### **4.6.5 NHESP Program**

#### **BioMap Habitat**

NHESP has created the BioMap to identify the most critical areas whose protection will protect the state's biodiversity. Although the BioMap concentrates on state-listed plants and animals and significant natural communities, it also considers more prevalent species and ecosystems. *"The goal of the BioMap is to promote strategic land protection by producing a map showing areas, that if protected, would provide suitable habitat over the long term for the maximum number of Massachusetts' terrestrial and wetland plant and animal species and natural communities."*<sup>29</sup> BioMap focuses on species of uplands and wetlands and in Hanover; there are ten locations that have been mapped by NHESP, all of which are in the south and southeastern portion of town, particularly near the Freshwater Tidal Marsh along the Indian Head River.

A list and description of each BioMap Core Habitat, with associated natural communities and wildlife, is provided in Appendix E.

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<sup>29</sup> <http://www.mass.gov/dfwele/dfw/nhesp/nhbiomap.htm>

### **Living Waters**

The NHESP Living Waters project identifies the “*most critical sites for freshwater biodiversity in the Commonwealth.*” Conservation efforts should be focused on these rivers, streams, lakes, and ponds identified as Core Habitats. Furthermore, for Living Waters Core Habitats, conservation and protection efforts should focus on lands adjacent to water bodies. Vegetated buffers (preferably a minimum of 100 meters wide) maintain cooler water temperatures as well as supplying the nutrients and natural hydrology required by freshwater species.

In Hanover, there is one Living Waters Core Habitat area, LW 331 which is Fish Habitat along the Indian Head River. The sections of the River that are identified as LW 331 contain spawning habitats for American Shad, Alewife and potentially Blueback Herring which are all anadromous fish species that migrate from coastal waters to fresh waters to spawn. All of these fish species are important to Massachusetts’ aquatic biodiversity.

## **4.7 Environmental Challenges**

The Department of Public Works is responsible for the care and maintenance of public roadways, sidewalks, drainage systems, bridges, dams, water supply, water supply infrastructure, fleet repair, shade trees, parks, grounds, recreation fields, athletic fields, the Town's Recycling and Trash Transfer Facility, and snow and ice control on all public roadways. In all there are 39 employees in the department that work together to offer 24 hour services to the Town of Hanover. The DPW Department is located at the water treatment plant on Pond Street. According to Victor Diniak, the Director, some of the major parks and recreational needs in Hanover include more field space for the purpose of accommodating additional programming needs, and so that the Town has the ability to give fields a needed rest period to avoid over use.

### **4.7.1 Chronic Flooding<sup>30</sup>**

The Town of Hanover drains to a river network in the western portion of town which then drains toward the North River. Due to this natural flow of water, there are two different types of flooding that typically occur. The first type is major river flooding along the Drinkwater River and Forge Pond which occurs about every twenty-five years in major storm events. The other type of flooding that occurs is more localized where drainage networks empty into smaller rivers and streams and ditches. The problem is exacerbated by the dumping of yard waste which is a major factor in causing localized neighborhood flooding.

### **4.7.2 Hazardous Waste Sites**

The Massachusetts Department of Environmental Protection (DEP) maintains a database of sites in communities throughout the state where oil or other hazardous material has been released and reported to DEP. According to DEP’s Waste Site/Reportable Release database, as of June 2007, the Town of Hanover has 62 sites listed (see Appendix E).

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<sup>30</sup> Victor Diniak, Hanover DPW Director to Mary C. McCrann, Beals and Thomas, Inc. via telephone, 21 June 2007.

#### **4.7.3 Landfill**

Hanover's seven (7) acre landfill, located on Rockland Street (Route 139) near its intersection with Route 53, was closed in 1972. In the late 1990's, the Southeast Region of DEP required the full assessment and capping of the 7-acre landfill under the Solid Waste Regulations. The closure, constructed in 1999/2000, consisted of installing a standard solid waste cap (consisting of a gas venting layer, a 40 Mil High Density Polyethylene Liner, a sand drainage layer, and a vegetative layer) over 4-acres of the former landfill, a paving cap covering 3-acres, and a passive gas collection system and surface water controls. Currently, the town is in its 25 year required monitoring period to make sure that groundwater does not migrate off-site and that any gases released on the capped landfill are being monitored and managed when necessary.

According to DPW Director Victor Diniak, solid waste disposal and recycling is now handled at the Town Transfer Station located on the easterly side of Route 53. Residents in the Town of Hanover have a 500 lb. per week limit on their trash and they must bring it along with their recycling (there is no curb-side pickup) to the Transfer Station between 8:30am – 4:00pm Friday through Tuesday. At the Transfer Station, recyclables are separated and trash is sent to a waste facility in Rochester, MA.

#### **4.7.4 Development Impact**

Finding a balance between growth and sustainability is a challenge for numerous Massachusetts communities. In Hanover, which is primarily a residential community, there is the challenge of balancing commercial growth with both residential growth and the town's capacity to service it. Encouraging commercial growth benefits the overall tax base, however, one of Hanover's major commercial areas is located in the Water Protection District/Aquifer Protection District. Managing Hanover's water supply area with future growth will continue to be a challenge.

The Town of Hanover does not have a public sewer system, therefore, residential, commercial and industrial properties have private septic systems. Several commercial properties have private wastewater treatment plants.

#### **4.7.5 Ground and Surface Water Pollution**

Every effort should be made to educate residents/homeowners on such topics as: proper disposal of lawn and yard waste; application of fertilizer, herbicides, pesticides, and insecticides; disposal of pool water; inspection and ongoing maintenance of septic systems; use of native, low impact vegetation for landscaping; the importance of limiting the amount of impervious surfaces in a community; how to care for wildlife habitat on, or near, your property; reducing the amount of sand and salt on winter roads and driveways; and the importance of leaving buffers and no-cut areas near resource areas. Additional information on preventing erosion, sedimentation, and the eutrophication of water bodies should also be provided.



It will be important to build in strong safeguards to protect the town's aquifer so that hazardous substances, excess nitrogen, and other pollutants do not impact the town's water supply.

#### **4.7.6 Stormwater Management**

With continued increases in the amount of impervious surfaces (paved roads/driveways/parking lots/roofs) and the removal of additional acreage of vegetation/trees, stormwater management is a critically important component in protecting the resources of Hanover. With less vegetation to slow the flow of stormwater, to promote infiltration to groundwater, and to filter sediments and other pollutants, there will be more impacts to rivers, streams, water supplies, wildlife habitats and wetlands. Low Impact Development techniques must be introduced and encouraged by the Planning Board, Conservation Commission, and the Board of Health - if erosion, sedimentation, and water pollution are to be controlled. Homeowners and developers also have important roles to play in addressing this issue.

The Town is not currently looking very closely at utilizing Low Impact Development techniques and could benefit greatly from a Cluster Bylaw, Stormwater Bylaw and/or Low Impact Development Bylaw to help encourage and manage runoff, stormwater and drainage patterns.

#### **4.7.7 Fish Consumption**

According to the January 2007 Massachusetts Department of Public Health Center for Environmental Health, the Drinkwater River, Indian Head River and North River (from Forge Pond Dam in Hanover to Route 3 in Norwell/Pembroke) and Factory Pond all had a P6 Fish Advisory Code due to mercury hazard. A P6 code means that the general public should not consume any fish from the water body that is so designated because of the presence of mercury.

**Section 5.0**

**Inventory of Lands of Conservation and Recreational Interest**



*Photo by Mary McCrann, King Street*

## 5.0 INVENTORY OF LANDS OF CONSERVATION AND RECREATIONAL INTEREST

The following section details specifically where open space resources and recreational amenities are located within the Town of Hanover. The type of facility and its condition was determined by the Open Space Committee. For the purposes of this project, the Town of Hanover took the initiative to update the outdated MA GIS Open Space data layer. Assumptions made in the new data layer include:

- Typically, Town owned land, managed by the Conservation Commission is considered to be permanently protected open space. Andrew Port, Town Planner spoke with Melissa Cryan at the Division of Conservation Services and they agreed that because there are no conservation restrictions on the properties managed by the Conservation Commission, it would not be appropriate to designate the parcels as permanently protected. Though they are under the care and custody of the Conservation Commission, the Town could change the designation and use of the property because there is no permanent restriction stating otherwise.
- Fields owned by the School Committee were not included as a part of the open space inventory. The property under School Committee care and custody has no protection at all and most of the land is already developed in some fashion. It is not considered to be open space by the Town of Hanover, which was also discussed between Mr. Port and Ms. Cryan.

Open space in a community is valuable for several reasons. Land is a finite resource, there is only so much, so by leaving areas in their natural state, it not only helps define community character, but it also provide habitat areas and corridors for wildlife and plants. In addition, particularly in the Town of Hanover, it helps protect drinking water supplies.

The open space and recreation inventory column headings include:

**Site Name:** Indicates the name of the site.

**Acres:** Total number of acres or a close approximation. Once acre equals 43,560 square feet.

**Manager:** Name of the manager of the property and the agency or department responsible for managing the property, if applicable.

**Level of Protection:** Notes whether the site if by virtue of zoning, or by the receipt of state or federal funding, is protected from sale and building development. Mass GIS notes the following characteristics about level of protection:

*Permanent (In Perpetuity)* – Legally protected in perpetuity and recorded in a property's deed. Public land is typically in perpetuity if it is owned by the Conservation Commission (see first bullet point above), if there is a conservation restriction on the

property, if it is owned by a State conservation agency, if it is owned by a non-profit land trust or if state or federal monies were used to purchase or improve the property. Private land is in perpetuity if it has a deed restriction in perpetuity, if there is an agriculture preservation restriction, or if there is a conservation restriction on the property.

*Temporary* – Legally protected for less than perpetuity (short term conservation restriction) or temporarily protected through a functional use. Example: water district lands are only temporarily protected while water resource protection is their primary use.

*Limited* – Protected by legal mechanisms other than those listed above. Land might be protected by a requirement of a majority municipal vote for change in status or Chapter 61 land.

*Unknown* – Should be researched through the property deed to see if any protection level is listed.

For the purposes of the updated Hanover Open Space layer, the level of protection descriptions defined above have been used.

**Public Access:** Notes whether or not the site is open to public use.

**Type of Facility/Condition:** Details what kind of condition the site or facility is in and what the site might be used for (ballfields, beach etc).

Open Space for the purposes of the 2007 Hanover update is defined as parks, playgrounds, fields, recreational amenities, forests, land of significant size owned and managed for agricultural, conservation, open space or recreation purposes.

## 5.1 Types of Open Space and Recreation Land Protection

In this section of the Open Space and Recreation Plan update, areas in Hanover that are significant for their open space, natural resource or recreational amenities have been highlighted. The inventory is inclusive of private and public sites (both developed and undeveloped) and is meant to be comprehensive.

According to the Division of Conservation Services, land that is protected (or in perpetuity) is typically owned by the Conservation Commission<sup>31</sup>, a State conservation agency, a nonprofit land trust or if the Town was awarded state or federal money for the improvement of purchase of a specific piece of property. Some private property can also have a protected designation if it is indicated in the property deed, if the property has an Agricultural Preservation restriction or if the Department of Environmental Protection has placed a restriction on the property for wetland protection or conservation purposes.

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<sup>31</sup> See assumption on previous page regarding conversation between Mr. Andrew Port, Town Planner and Ms. Melissa Cryan, Division of Conservation Services.

Land owned by other agencies is often times not protected. For example, many of the parks and playgrounds or baseball fields may not be permanently protected and in danger of development in the future.

More specifically, the types of programs below illustrate different types of protection that could be available to property in Hanover. Some of the programs are already in use such as Chapter 61.

**Article 97 Protection:** Article 97 protects publicly owned lands used for conservation or recreation purposes. In order for a property to be sold, transferred or converted to a different use, Article 97 requires a vote of the Town in which the land use would be changed (by Conservation Commission, Parks Department, other, whichever is appropriate), a 2/3 vote at Town Meeting or City Council in support of the disposition, a 2/3 vote of the legislature in support of the disposition, they must demonstrate compliance with applicable funding sources and the municipality must file an ENF with MEPA.

**Conservation Restriction:** A conservation restriction is an agreement that is bound legally between a landowner and a “holder” or grantee. The landowner would agree to limit the amount and/or use of a specific property in order to protect the unique or specific conservation values that are evident on the property or important to the landowner or “holder.” A specified amount of time for the conservation restriction can be noted, or the conservation restriction can be in perpetuity. A conservation restriction is recorded at the Registry of Deeds.

**Easements:** An easement is typically listed on a property deed and it allows permanent access to a property for a specific purpose. It is a right of use, not a right of possession.

**Chapter 61:** Chapter 61 encourages preservation of agricultural, recreation and forest land in Massachusetts. Landowners can ensure the long-term protection of their property by receiving a tax benefit if they agree to the terms of Chapter 61. If an owner wants to take property out of Chapter 61 designation, the Town can recover the tax benefits given and they have the right of first refusal to purchase the property if the land is sold for residential, commercial or industrial purposes.

The following table is a listing of open space and recreational resources located in the Town of Hanover. The Open Space and Recreational resources are illustrated on Map 6, Appendix A prepared for this plan.

Town of Hanover  
Open Space and Recreation Plan

Hanover, Massachusetts  
125601RP001

Inventory of Areas of Conservation and Recreation Interest – Town of Hanover								
Site Name	Acres	Owner	Management	Zoning	Grant Received? Funding?	Level of Protection	Public Access	Type of Facility/Condition
<b>Town of Hanover</b>								
Amos Gallant Field/Curtis School	2.90	Town of Hanover/BOS	BOS, Parks and Rec	Residential		Temporary	Public	Baseball Field/Good
B. Everett Hall Field/Sylvester School	20.1	Town of Hanover/BOS	Parks & Rec, BOS	Residential		Temporary	Public	Bandstand, Football and Baseball Fields, Basketball, Tennis Courts, Playgrounds, Picnic Areas/Good
Baily Parcel	5.94	Town of Hanover/CC	Con Com	Residential		Unknown	Public	Wooded neighborhood conservation land/Good
Barstow Parcel	7.28	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Nature trails/Good
Beal/Riverside Drive Well Property	47.7	Town of Hanover/DPW	DPW	Residential		Temporary	N/A	Water Supply Protection
Birchwood Road Property	2.37	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Neighborhood conservation land/Wet
Bonney Conservation Parcel	6.04	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Conservation Land/Good
Bonney Land	1.28	Town of Hanover/ CC	Con Com	Business		Temporary	Public	Conservation Land/Good
Briggs Field	1.18	Town of Hanover/BOS	Parks & Rec, BOS	Residential		Temporary	Public	Baseball Field/Good
Broadway Well Site	98.43	Town of Hanover/DPW	DPW	Business/ Residential		Temporary	N/A	Water Supply Protection
Broadway/Indian Head Parcel	1.79	Town of Hanover/DPW	Con Com	Residential		Temporary	Public	Conservation, Old railbed/Good
Brookwood Road Parcel	0.54	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Neighborhood Conservation Land/Wet
Buttonwood Lane Property	3.70	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Neighborhood Conservation Land/Wet
Calvin J. Ellis Field	11.60	Town of Hanover/P&R	Parks & Rec	Residential		Temporary	Public	Baseball Fields/Good
Cedar Old Farm Connector	0.36	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Connector to ConCom Land/Good

Town of Hanover  
Open Space and Recreation Plan

Hanover, Massachusetts  
125601RP001

Site Name	Acres	Owner	Management	Zoning	Grant Received? Funding?	Level of Protection	Public Access	Type of Facility/Condition
Cedar Street Property	21.4	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Conservation land, Vernal Pool/Wet
Clark Land	13.06	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Colby Phillips Area/Wet
Clark Land	64.71	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Cranberry Bog/Good
Colby Phillips Property	3.18	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Nature Trails/Good
Colby Phillips Property	129.9	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Nature Trails/Good
Colonial Drive Property	0.64	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Wetlands
Cross Street Site	4.33	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Adjacent to Morrill Phillips
Dillingham Old Town Way Site	5.91	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Neighborhood conservation land/Good
Dwelly Avenue Parcel	3.20	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Neighborhood conservation land/Wet
East Street Property	3.99	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Neighborhood Conservation Land, no access/Wet
Elm Street Property	0.75	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Neighborhood Conservation Land/Wet
Emily Elizabeth White Conservation Area	5.29	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Aquifer Protection District/Good
Fairbairn Parcel	1.18	Town of Hanover/CC	Con Com	Commercial		Temporary	Public	Abutts Third Herring Brook/Good
Fireworks Property	142.18	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Nature Trails/Good
Hammer Hook Conservation Parcel	3.32	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Wooded area behind detention area/wet
Hanover Center Cemetery	33.0	Town of Hanover/DPW	DPW	Residential		Temporary	Public	Cemetery
Hanover Center Corner Property	.25	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Park area near Town Hall/Good



Town of Hanover  
Open Space and Recreation Plan

Hanover, Massachusetts  
125601RP001

Site Name	Acres	Owner	Management	Zoning	Grant Received? Funding?	Level of Protection	Public Access	Type of Facility/Condition
Hanover Spring Meadow Lot	1.58	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Wetlands
Hanover Street Well Protection	32.87	Town of Hanover/BOS	DPW	Residential		Temporary	N/A	Water Supply Protection
Hell Swamp	73.06	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Swamp, Conservation Land
Hillside Drive Lane	1.22	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Neighborhood Conservation Land/Good
Indian Head/Riverside Land	34.0	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Aquifer Protection Zone/Good
Jay's Lane Parcel	3.05	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Neighborhood Conservation Land/Good
King Street/Cervelli Property	75.4	Town of Hanover	Conservation/ P & R	Residential	CPA Funding	Temporary	Public	Former farmland, nature trails
Lot 1A	20.67	P&R						
Lot 1B subparcel a	27.3	CC						
Lot 1B subparcel b	19.5	P&R						
Lot 1B subparcel c	7	CC						
Larchmont Parcel	1.75	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Neighborhood Conservation Land/Wet
Legion Drive Property	6.32	Hanover Housing Authority	Housing Authority	Residential		Temporary	Public	Land Designated for Affordable Housing
Luddams Ford Park	29.18	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Nature trails, fishing, canoe launch/Good
Mann Brook Swamp	9.97	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Conservation Land
Mann Brook/Hobart Swamp	18.92	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Conservation Land/Wet
Mayflower Circle Property	7.71	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Neighborhood Conservation Land/Wet
Merry Property	56.84	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Nature Trails/Good
Morrill Allen Phillips Wildlife Sanctuary	72.44	Town of Hanover/P&R	Conservation/Parks	Residential		Temporary	Public	Nature Trails, Baseball Field/Good

Town of Hanover  
Open Space and Recreation Plan

Hanover, Massachusetts  
125601RP001

Site Name	Acres	Owner	Management	Zoning	Grant Received? Funding?	Level of Protection	Public Access	Type of Facility/Condition
Norwell Line Parcel NE	14.3	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Conservation Land/Wet
Norwell Line Parcel NW	2.35	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Conservation Land/Wet
Old Farm Road Property	12.42	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Pine Island Swamp/Wet
Old Ford Conservation Parcel	3.20	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Neighborhood Conservation Land/Wet
Old Washington Street Corner	0.02	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Route 53 Commercial Area/Good
Oldfield Drive Parcel	1.66	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Neighborhood Conservation Land/Wet
Pine Island Swamp North	4.51	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Swamp, Conservation Land
Pine Island Swamp South	19.5	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Swamp, Conservation Land
Plain Street Site	4.71	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Diked Trails/Good
Plain Street Site	11.2	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Diked Trails/Good
Pleasant Street Property	1.94	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Old Dam Site/Good
Plymouth Road Parcel	3.11	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Neighborhood Conservation Land/Good
Pond Street Well Protection	38.8	Town of Hanover/DPW	DPW	Commercial		Temporary	N/A	Water Supply Protection
Ponderosa Drive Parcel	12.57	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Neighborhood Conservation Land/Good
Rest Haven Lot-Rockland Town Line	1.93	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Neighborhood Conservation Land/Wet
Rinear Property	23.2	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Conservation Land/Mixed Woodlands & Wetlands
Salmond School Fields	3.11	Town of Hanover/School	School Department	Residential		Temporary	Public	Ballfield/Good

Town of Hanover  
Open Space and Recreation Plan

Hanover, Massachusetts  
125601RP001

Site Name	Acres	Owner	Management	Zoning	Grant Received? Funding?	Level of Protection	Public Access	Type of Facility/Condition
Shingle Mill Lane	0.68	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Neighborhood Conservation Land/Good
Shinglemill Brook Swamp	9.75	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Conservation Land/Wet
Sproul Land	5.64	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Conservation Land/Wet
Summer Circuit Ellis Parcel	1.47	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Ballfields, Parking Lot/Good
Summer Street Site	104.9	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Nature trails/Good
Third Herring Brook & Old Pond Swamp	50.8	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Conservation Land, Flood Plain, Wetlands
Third Herring Brook Parcel	4.47	Town of Hanover/CC	Con Com	Commercial		Temporary	Public	Conservation Land, Flood Plain, Wetlands
Tindale Bog & Beach Property	16.58	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Skating Area/Good
Tindale Parcel	9.95	Town of Hanover	Town of Hanover	Residential		Temporary	Public	Well Protection Area/Wet
Union Cemetery	1.91	Town of Hanover/DPW	DPW	Commercial		Temporary	Public	Cemetery
Union Street	14.9	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Hells Swamp/Wet
Walnut Street Parcel	0.65	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Brook/Wet
Washington Broadway Salmond School Parcel	3.28	Town of Hanover/School	School	Residential		Temporary	Public	School Administration Property/Good
Washington Street – Cardinal Cushing Parcel	3.15	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Neighborhood Conservation Land/Partially Wet
Water Street Parcel	1.21	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Conservation Land/Good
Water Street Parcel	3.85	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Old Dam site/Good

Town of Hanover  
Open Space and Recreation Plan

Hanover, Massachusetts  
125601RP001

Site Name	Acres	Owner	Management	Zoning	Grant Received? Funding?	Level of Protection	Public Access	Type of Facility/Condition
Webster Street Parcel	13.25	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Conservation Land/Good
Webster Street Parcel	2.77	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Conservation Land/Wet
West Avenue Property	26.2	Town of Hanover/BOS	BOS	Residential		Temporary	Public	Conservation Land/Wet
Whiting Street Parcel	22.1	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Conservation Land/Wet
Whiting Village Property	21.5	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Conservation Land/Wet
Whiton Court Parcel	6.60	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Conservation Land/Wet
Willow Road Site	32.4	Town of Hanover/CC	Con Com	Residential		Temporary	Public	Nature Trails/Good
Woodland Drive Parcel	1.84	Town of Hanover/BOS	BOS	Commercial		Temporary	Public	Neighborhood Conservation Land/Good
<b>Sub-Total</b>	<b>1,590</b>							
<b>Other</b>								
Birchwood Road Property	.69	Bass Victor Trustee	BOS	Residential		Temporary	Public	Along Molly Brook
Briggs – Hanover Street	20.84	Private Landowner	N/A	Residential		Limited	Private	Chapter 61 Land/Good
Briggs – Main Street	37.70	Private Landowner	N/A	Residential		Limited	Private	Chapter 61 Land/Good
Cervelli – Center Street	7.95	Private Landowner	N/A	Residential		Limited	Private	Chapter 61 Land/Good
Denham – Circuit Street	14.7	Private Landowner	N/A	Residential		Limited	Private	Chapter 61 Land
Great Rock Shingle Mill Parcel	4.74	Bass Victor Trustee	N/A	Residential		Permanent	?	Private Conservation Land
Hacketts Pond	6.40	South Shore NCS	South Shore NCS	Residential		Permanent	?	Conservation Land
Holly Farms Wildlands Parcel	3.75	Wildlands Trust of SE MA	Wildlands Trust	Residential		Permanent	?	Conservation Land

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Indian Head Drive Boat Launch	1.93	Commonwealth of Massachusetts	MA Division of Fisheries and Wildlife	Residential		Temporary	Public	Recreation, Boat Launch
<b>Site Name</b>	<b>Acres</b>	<b>Owner</b>	<b>Management</b>	<b>Zoning</b>	<b>Grant Received? Funding?</b>	<b>Level of Protection</b>	<b>Public Access</b>	<b>Type of Facility/Condition</b>
Indian Head Drive/Plymouth County Land	3.19	Inhabitants of Plymouth County	Plymouth County	Residential		Temporary	Public	
Melody Woods	42.5	South Shore NCS	South Shore NCS	Residential		Permanent	?	?
Melzer Hatch Reservation	47.16	Wildlands Trust of SE MA	Wildlands Trust	Residential		Permanent	Public	Conservation Land/Good
Murtha Property	4.30		Community Preservation Committee	Residential		Temporary	Public	Conservation, Historic Preservation, Housing
Nick Tedeschi Sanctuary	14.11	South Shore NCS	N/A	Residential		Permanent	?	?
Norwell Cemetery Property	9.01	Town of Norwell		Residential		Temporary	Public	Cemetery
Onbashian – Broadway	7.16	Private Landowner	N/A	Residential		Limited	Private	Chapter 61 Land
Stoney Meadow Property	20.9	Wildlands Trust of SE MA	Wildlands Trust	Residential		Permanent	Public	?
Stony Meadow Conservation Restriction	7.05	Private Landowner	Private	Residential		Permanent	Private	Conservation Land
<b>Sub-Total</b>	<b>254.08</b>							
<b>Total Acreage</b>	<b>1,844</b>							

**Note:** The only property that has been purchased with any type of grant funding is the King Street/Cervelli Property, which was purchased with funds from the Community Preservation Act. Also, all properties listed in this table should be re-verified with the Town as characteristics of the parcel may continue to change.

## Section 6.0 Community Vision

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*Photo by Mary McCrann, June 19, 2007 Public Forum*

## **6.0 COMMUNITY VISION**

### **6.1 Description of the Process**

The Hanover Open Space and Recreation Plan update project commenced in April 2007 at which time Beals and Thomas, Inc. began working with town staff and the Open Space Committee. The public participation process for the project included four different components, monthly meetings with the Open Space Committee, participation at Hanover Day, two Public Forums (one held at the beginning of the process and one held towards the end) and a survey regarding open space and recreation that was distributed town wide. Public participation for this project was strongly emphasized and well received in the Town of Hanover.

#### **June 16, 2007 - Hanover Day Event**

On June 16, 2007, the Open Space Committee and Beals and Thomas, Inc. set up an informational booth regarding open space, recreation and conservation at Hanover Day, a town-wide event. The event included booths from a large number of local organizations, games, a food tent, antique cars, tours of historic properties, outdoor activities for children and bands playing in the bandstand. The booth had several maps indicating where open space in



Hanover is located, a handout regarding additional information about open space, a sign up sheet for more information or to volunteer, information about the public forum on June 19, 2007 and maps noting where open space amenities are located.

Visitors to the Open Space Committee's booth were asked the question, "what is your favorite place in Hanover" and they were asked to mark that place on a large map of the town with a sticker. Whenever possible, the name of the favorite place in addition to any other comments or concerns that participants wanted to share was recorded. Some of the favorite places included the North River, Factory Pond, Luddams Ford, Briggs Stables, Colby Phillips and the remaining cranberry bogs. In general, residents who stopped by the booth were very interested in what the Open Space Committee was doing for the town of Hanover.

#### **June 19, 2007 - Public Forum**

The Town of Hanover held a public forum facilitated by Beals and Thomas, Inc. for the Open Space and Recreation Plan update project on June 19, 2007 at the Hanover Town Hall, Hanover MA. The focus of the evening was to engage local residents in a discussion about open space and recreation resources in the community. Hal Thomas, the



Chair of the Open Space Committee started the evening by welcoming attendees and providing a brief introduction. Beals and Thomas, Inc. then made a presentation that included a discussion of why the OSRP update is important, demographic data, open space data and open ended questions to help the audience think about what aspect of open space and recreation in the community is important. During breakout groups, participants were asked to use a map that was provided and take a first time visitor on a “Tour of Hanover.” The purpose of this exercise was to get attendees to really think about what is special and meaningful in the community from their viewpoint. (A full summary of the public forum can be found in Appendix C).

#### **November 8, 2007 – Public Forum**

The second public forum for this project was held in coordination with other community preservation plans being prepared for the Town concurrently, including the Historic Preservation Plan, Affordable Housing Plan and Parks and Recreation Master Plan. The forum was well attended and is summarized in Appendix C.

#### **Open Space and Recreation Plan Survey**

In August and September 2007, the Open Space Committee conducted a survey regarding open space and recreation in the town of Hanover that was prepared and analyzed by Beals and Thomas, Inc. The survey was made available online at the Town website, and a hard copy was mailed to every household in the community. In total, 246 survey responses were received. A full summary of the survey can be found in Appendix C.

Beals and Thomas, Inc. discussed the goals and objectives of the 1997 OSRP with the Open Space Committee and at the public forum to help determine what items are no longer relevant and what items would make sense to update and include in the 2007 OSRP. Several new goals have also been added based on the public participation component of this project and working with Town staff and the Open Space Committee.

### **6.2 Statement of Open Space and Recreation Goals**

In 1979, Hanover prepared its first Open Space and Recreation Plan under the guidance of the Conservation Commission. The plan prioritized list of parcels for acquisition, site specific improvements for existing Town-owned properties, and a recommended set of land use controls to be implemented. The Plan also presented an overall strategy for open space preservation. The 1987 update focused on resource protection and passive recreation rather than active recreation. In 1997, the plan took into consideration all of the growth pressures that Hanover and the surrounding region was facing and developed five general goals.

In 2007, several themes ran throughout all of the public participation events. Rural character, small town community feel, over development, beautiful open spaces and natural areas, wonderful residents and a strong school system were all mentioned a number of times throughout the planning process at Hanover Day, the Public Forum and in the survey results. Hanover’s rich history, beautiful natural areas, convenient location

and civic pride are all characteristics that make it a unique community. The character and small town charm that so many residents love can in part be preserved and protected by really understanding what amenities and resources exist, what is important, and how to move forward in the future.

Goals and objectives for the Hanover Open Space and Recreation Plan update were developed from evaluating a number of resources and from input at Hanover Day, the June Public Forum, the local survey and from the Hanover Open Space Committee. Beals and Thomas, Inc. also took into consideration other goals and objectives of the ongoing overall Master Plan to determine what goals other boards and committees in town were highlighting that may pertain to the more specific Open Space and Recreation Plan project. In May 2007, the goals and objectives from the 1997 Open Space and Recreation Plan were discussed in detail at the monthly Open Space Committee meeting. The goals and objectives were also discussed at the June 2007 public forum where attendees were asked whether or not there was any validity to them a decade later. For the purposes of this project, goals were formed around a general vision or concept and objectives are more concrete ideas for accomplishing the stated goals. The action items that will be included in section 9.0 are specific activities that make achieving the goals and objectives realistic.

Hanover's major challenge is to manage growth, acquire any remaining open space parcels that become available, protect the open space and sensitive natural resources and recreational amenities that exist and help the community retain its rural, small town feel that gives it character while also meeting the needs of residents.

The primary goals of the Open Space and Recreation Plan update are to:

- ❖ Identify, preserve and protect those historic, cultural, and natural resources that contribute to the character of the Town,
- ❖ Protect and enhance the quality of Hanover's surface and groundwater as a source of municipal drinking water and for wildlife and recreation use,
- ❖ Work with other nearby towns and regional planning agencies to further regional open space and recreation goals and projects,
- ❖ Provide accessible facilities to all user groups and residents and improve and increase recreational opportunities in Hanover,
- ❖ Enhance appropriate public access to and uses of existing conservation land and continue to work towards establishing a continuous greenbelt, and
- ❖ Better inform residents about where open space and recreation amenities are located, how they can be utilized and why they are important to the community.

## Section 7.0 Analysis of Needs

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*Photo by Mary McCrann, Factory Pond*

## **7.0 ANALYSIS OF NEEDS**

### **7.1 Resource Protection Needs**

The Town of Hanover is a community that has maintained its rural, small town charm since it was incorporated in 1727. It has always held in high regard its location to Boston and Cape Cod, and the recreational and open space amenities and sensitive natural resources that have become important to its identity. In 2000, Hanover's population was over 13,000 residents, and since that time it has continued to experience a significant amount of growth. Currently, there is an opportunity to continue acquiring additional undeveloped land parcels that would add to the protected open space which already exists in the community, as well as increase and enhance recreational programming and facilities.

The 1997 Open Space and Recreation Plan stated that *"efforts should be made to retain and enhance the Town's semi-rural, small town character by maintaining and increasing open space areas, preserving scenic landscapes and protecting wildlife habitats."* Ten years later, in 2007, the same sentiment is true. In a survey conducted for this project, local residents are proud of Hanover's small town country feel, open space, established neighborhoods, wildlife and quiet nature. Residents like the rural feel of the community, the neighborliness of those who live here, the civic pride that is evident, and the safety of being able to walk around and be comfortable. The quality of the school system was also noted as a reason for why people want to live in Hanover. When survey respondents were asked about how Hanover has changed, the overarching theme was that Hanover has been accommodating a tremendous amount of development and experiencing growth in a number of ways. For the most part, many thought that recent growth was negative. Hanover needs to continue along a path in which it can retain its rural, small town charm while managing growth.

#### **Water Supply and Groundwater**

The 1997 Open Space and Recreation Plan indicated the importance of protecting the quality of Hanover's water resources. This need is still true today. The creation of the Water Resource Protection District within the Zoning Bylaw, that includes the Well Protection Zones and the Aquifer Protection Zone will help this initiative, but it is also important that Hanover take a regional perspective to protecting the drinking water supply since groundwater does not adhere to political boundaries. First and foremost, any land available around this district should be protected as well to act as a buffer to prevent contamination. The Town should also talk to neighboring communities and discuss how they can work together on regional protection of water resources.

According to Hanover's Conservation Agent, some small steps that could be investigated to further help protect drinking water include earlier identification of issues and better enforcement when they are found on the part of the Board of Health and reviewing whether or not the Town could use something other than sand/salt on the roadways during the winter. The Town should also review the regulations pertaining to the

“grandfathering” of certain potentially harmful commercial and industrial enterprises in the Water Resource Protection District. Even though some businesses were permitted to operate in this district in the past, the continuance of some practices pose threats to the drinking water supplies. With regarding to failing septic systems, it is important to address the problem as quickly as possible in order to prevent the effluent from entering the town’s surface waters and groundwater. Currently, a failed system may not be permitted for repair, upgrade, or replacement for months.

### **Invasive Species**

Conservation land should be monitored for invasive species, and where they are found, should be promptly be removed before they become a problem and impact native species. Better information needs to be provided to the Conservation Commission by citizens who see invasive species in Hanover so that they can be better tracked and mitigated. In addition, an educational program informing residents about what invasive species are, and why they need to be monitored would be helpful. Utilizing the Boy Scouts for such an educational campaign and preparing a brochure to all new Hanover homeowners are examples that should be considered. Massachusetts did implement a ban on the sale and importation of over 140 plants in 2006, however, existing invasive plant populations will continue to spread. Control, eradication options and education of residents and visitors is needed to help manage invasive species within the Town of Hanover. The organization of volunteer work days to remove plants has achieved successful results.

### **Other Needs**

According to NHESP, Hanover has a tremendous amount of land in a specific BioMap Core labeled as 1079 (see Appendix E). This area is around the Freshwater Tidal Marsh along the Indian Head River. NHESP suggested that working with surrounding towns and land trusts to protect remaining open land in that area and west and north along the river system would help to protect significant areas of biodiversity and maintain ecosystem functioning in the riparian and estuarine areas. Conserving remaining unprotected land in the area, including buffers would really add to/benefit the size and continuity of open space which is important for supporting wildlife populations. In addition, Hanover should focus on preventing habitat fragmentation to help protect the ecosystem for rare species and for common species, particularly amphibians and reptiles.

Section 4.6.4 noted the various uncommon natural communities that are located within Hanover which support important biodiversity. The most effective way to protect the Freshwater Tidal plant communities and their specific species is to protect the water regime that maintains them. In particular, allowing tidal influence to continue and improving water quality. The upland areas and health of the wetlands that support these areas is also important to maintain. The land that has been identified as primary forest with associated Certified and Potential Vernal Pools are also important to protect.

According to the Hanover Conservation Agent, many residents are unaware of what activities are allowed or prohibited, near wetlands. More should be done to educate

homeowners and business owners on the regulations pertaining to wetlands and on the importance of these resource areas. Overall, there seems to be a knowledge gap regarding the importance of wetland resource areas, and an educational campaign is necessary. Enforcement and encroachment are two major problems the Conservation Commission faces regarding wetland resource areas. In addition, Hanover currently has in its Bylaw a 35 foot no structure buffer between a wetland resource area and a building, and 25 feet should be totally undisturbed. Many towns in the region have voted to change local wetland regulations in order to increase the size of protected buffers adjacent to wetland resource areas. Of critical importance is the need for adequate buffers around such habitat areas as vernal pools.

## **7.2 Land Resources**

Hanover has approximately 1,844 acres of open space in the community. This represents approximately 18.5% of Hanover's total land area. Physically, the open space is fairly dispersed throughout the community, with the exception of the northeast corner of town near the Hanover Mall. Along the Rockland/Hanover border, there are several large clusters of open space which include Colby Phillips, the Summer Street Site and the newly acquired King Street property and almost adjacent towards the east is the Fireworks property. Another cluster is located along the Hanover/Pembroke line which includes Luddams Ford and the Hillside Drive Lane land. Other open space is scattered throughout and opportunities to add parcels of land in the future should be looked at closely whenever possible so as to create and connect large tracts of open space.

The majority of open space in Hanover is only temporarily protected, even though a lot of it is owned by the Town and managed by various boards and commissions. As noted in Section 5.0, Andrew Port, Town Planner spoke with Melissa Cryan at the Division of Conservation Services and they agreed that because there are no conservation restrictions on the majority of properties managed by the Town, it would not be appropriate to designate the parcels as permanently protected. Though they are under the care and custody of the Conservation Commission, the Town could change the designation and use of the property because there is no permanent restriction stating otherwise. Working to change the temporary level of protection on town owned open space to permanently protect it is a real opportunity for the Town of Hanover.

### **Competition for Open Space and Conservation Land**

The Town of Hanover has experienced a tremendous amount of residential and commercial growth in recent years. Residents have observed that new development seems to be happening frequently and at a rapid pace. In addition, the town has competing needs for the open space that remains in the community for housing, park and recreation and leaving the land in its natural state.

The land that is permanently protected provides a wide range of functions, preserving environmentally and culturally sensitive resources, buffering developed areas and providing opportunities for recreation. As Hanover grows in the future, demands for

these areas will increase and overuse at the Town's most popular areas (Luddams Ford, Colby Phillips, Sylvester Field and the Town Center area) may lead to their degradation without implementation of management strategies and regular maintenance. Town-wide development may also affect both protected and unprotected open space resources, resulting in traffic congestion, degradation of water quality, loss and/or fragmentation of critical habitat areas, loss of community character and increased demand for municipal services.

### Land Acquisition Needs

At Hanover Day, the Public Forums and as noted in the Survey that was conducted for this project, residents of Hanover repeatedly stated that they thought that there was too much development, both commercial and residential occurring in the community. They did not want to lose Hanover's rural, small town character. Approximately 95% of respondents thought there was a need to preserve and protect open space and natural areas in Hanover.

As part of the 2007 Open Space and Recreation Plan update, the Open Space Committee was interested in ensuring that they had a system for targeting and prioritizing land for future property acquisition. In lieu of identifying specific parcels, the Open Space Committee decided to adopt criteria that they would consider when land became available. The criteria were turned into a worksheet that will be filled out with each new property that they review. The information in the worksheet is listed below.

### Hanover Open Space Committee – Land Acquisition Worksheet

Parcel Name: \_\_\_\_\_ Assessed Value: \_\_\_\_\_  
 Map and Parcel: \_\_\_\_\_ Acreage: \_\_\_\_\_  
 Location: \_\_\_\_\_ Tax Title: \_\_\_\_\_

Criteria	High (10-8 Points)	Medium (7-3 points)	Low (2-0 points)	Score
Water Supply	Within 1,000 feet of public well or well site	In watershed protection zone	Within recharge zone	
Flood Plain	Velocity Zone	Zone A	Zone X	
Agricultural	Operating Farm	Chapter Lands, 61, 61A, 61B	Other	
Linkage	Current linkage to waterfront, conservation or protected land	Potential linkage to waterfront or conservation land	Other	
Recreation	Strong need land appropriate	Suitable if modified	Not suitable	
Urban Green Space	Open land in densely settled area, suitable for pocket park	Not densely settled area, suitable for pocket park	Not likely	
Water Access Point	Yes	No	No	



Wildlife Habitat	Endangered or Rare Species	Part of wildlife corridor or vernal pools	Other	
Wetlands	Yes, upland buffer greater than 50 feet	Yes, buffer less than 50 feet	No	
Development Potential	High	Medium	Low	
Scenic Value	High	Medium	Low	
Local Preference	High	Medium	Low	
Buildings Present	None	One Building	Multiple Buildings	
Unique, Townwide, Historic or Public Value	High	Medium	Low	

Additional criteria or property characteristics that the committee should consider when looking at property in the future include:

- If the property is in or adjacent to an Area of Critical Environmental Concern (ACEC) (*currently Hanover does not have any ACECs, but there is the potential to designate an area in the future*),
- In addition to the wildlife habitat criteria, if the property is in a specifically identified NHESP priority or estimated habitat area,
- Additional wetland criteria should be if the property contains wetlands or lands subject to the wetlands protection act or rivers protection act,
- If the property contains a vernal pool (land that is primary forest and contains vernal pool clusters would be excellent to consider for acquisition to help protect the biodiversity of Hanover),
- If the property provides a buffer to minimize the disruption of ecological processes on it or abutting lands,
- If the property will provide accessibility with ADA standards,
- If the property already contains trails or linkages or would serve the purpose,
- If the property will be available for public use for active or passive outdoor recreation,
- If the property contains significant archaeological or historic resources based upon the State or National Register of Historic Places or the Massachusetts Historical Commission's inventory,
- If the property maintains a sense of agricultural tradition or rural character,
- If the property provides a sense of openness or scenic view, if it is isolated from roads/structures and serves as a buffer to other land uses or if the property would enhance the scenic aspect of an existing open space parcel.

In pursuing other land acquisition possibilities, vacant land adjacent to sensitive natural resources, land that would create a larger tract of open space and land that is near key water supply areas should strongly be considered for protection.

### 7.3 Recreation and Community Needs

Enhancing, maintaining and preserving the open space and recreation amenities that currently exist in the Town of Hanover is an important goal of this OSRP update. Hanover is a community that is fortunate to have a number of amenities available for residents.

The Parks and Recreation Committee and their Master Plan (*discussed in more detail below*) should be utilized and consulted regarding the future of fields and property under their care and custody. In addition, the Master Plan should be seen and used as a document that parallels this OSRP. The OSRP community wide survey that was conducted for this project suggested a balance of passive and active recreation be funded and created in the Town of Hanover. The Community Preservation Committee and Town Meeting are responsible for determining how much money is allocated for parks and fields for active use, versus use of Community Preservation Act funds for new open space acquisition and preservation. It is strongly recommended that the Open Space Committee and the Parks and Recreation Committee work together to implement both plans and communicate effectively regarding projects.

#### **Parks and Recreation Master Plan<sup>32</sup>**

In addition to the Open Space and Recreation Plan update, the Town of Hanover Parks and Recreation Committee prepared a more specific Parks and Recreation Master Plan in 2007 with assistance from Weston & Sampson (the full Parks and Recreation Master Plan has been included in **Appendix E** of this plan). The purpose of the project was to assess current Parks and Recreation Committee properties and other Town properties that provide recreational resources (more specifically, “active” recreational resources) to Hanover residents. In addition, the plan provides a guide for the future development of park and recreation properties and specific details about what can and needs to be achieved. Public participation for this project was conducted through public forums and a town-wide survey.

Key points from the Parks and Recreation Master Plan project include:

- Lacrosse is the fastest growing sport in Hanover, but there are no dedicated fields
- Softball is “under-fielded,”
- There is not sufficient field space to accommodate the programming that Parks and Recreation would like to offer and there is no building or space identified for a much needed community center,
- Passive recreation opportunities were the most sought after activity. Further opportunities should be provided or more information about what exists should be made available, and
- Parking, safety and access concerns at Ellis Field, Myrtle and B. Everett Hall.

Two identified goals from the Parks and Recreation Master Plan project are:

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<sup>32</sup> Town of Hanover Parks & Recreation Master Plan, 2007 – Weston & Sampson

- Each property (managed by the Parks and Recreation Committee) should be enhanced for both active and passive recreational opportunities, and
- New facilities that meet the continuing needs of a growing town and various recreational programs/community leagues should be provided.

Listed in the Parks and Recreation Master Plan are Parks and Recreation Committee properties and School Department properties. The Parks and Recreation Master Plan focused primarily on and intensely studied the six properties that fall under the jurisdiction of the Parks and Recreation Committee. Together, these studies begin to provide a picture of recreational opportunities available in Hanover.

#### **Parks and Recreation Committee Properties**

<b>Property Name</b>	<b>Address</b>	<b>Acres</b>	<b>Description</b>
Briggs Field	Hanover/Center Streets	1.17	Small-scale facility located within the historic district near town center with a single field for Tball and softball use.
Sylvester Field (B. Everett Hall Field)	495 Hanover Street	20.33	Town's premier recreation facility, also located within the historic district near town center, with extensive fields, courts (tennis, basketball and street hockey), children's playground, beach volleyball, bandstand and other related amenities.
Calvin J. Ellis Field	750 Circuit Street	12.50	Major baseball field complex with facilities for most levels of competition.
Myrtle/Center Playground	215 Myrtle Street	75.00	The Town's largest park facility in total area with basketball courts, a large and open multi-use field complex used for baseball, softball and soccer. Trails meander through large undeveloped woodland and wetland sections of the property.
Amos Gallant Field	848 Main Street	2.74	Small-scale facility used for baseball and softball. Located behind the unused Curtis School on Main Street.
King Street Property	245 King Street	66.66	Recent acquisition, open fields that have been historically farmed. Recreation uses to be determined. This property falls under the jurisdiction of both the Parks & Recreation Committee and the Open Space Committee. The portion of the site under P&R Committee jurisdiction corresponds generally to the area that has been historically farmed near King Street.

### School Department Properties

Property Name	Address	Acres	Description
Sylvester School	495 Hanover Street	20.33	Fields used for softball, soccer and playground
Center School	65 Silver Street	12.91	Baseball field, multi-purpose field and playground
Salmond School	188 Broadway	6.66	Softball field and playground
Hanover High School	287 Cedar Street	23.41	Track, football, baseball, multi-purpose field and tennis courts
Hanover Middle School	45 Whiting Street	29.62	Multi-purpose field, playground
Cedar School	265 Cedar Street	48.80	Multi-purpose field, playground

### Needs Identified in Parks and Recreation Master Plan<sup>33</sup>

As a part of the Parks and Recreation Master Plan, a townwide survey was conducted. The survey indicated that the top three facilities that respondents wanted to have more of in the Town of Hanover were: woodland/nature trails, walking and jogging areas and biking and picnic amenities. In addition, half of the respondents felt that the conditions were only fair/poor at Myrtle Field and a third felt that conditions are fair/poor at B. Everett Hall and Ellis Fields. Over 70% of the residents who took the survey felt that recreation is very important to their families.

#### HANOVER'S RECREATION NEEDS AND PREFERENCES

Walking, jogging, biking trails  
Improved parking and access at all facilities  
Children's playgrounds  
Skateboard Park  
Restrooms  
Softball fields  
Multi-use rectangular athletic fields – football, lacrosse, field hockey  
Four basketball courts in one location  
Additional Little League baseball fields  
One additional or relocated full size (90 foot diamond) baseball field  
Regulation street/roller hockey rink  
Potential ice hockey rink  
Multiple tennis courts in one location

Three of the expressed needs above warranted a separate discussion due to the potential complexity of achieving their implementation; they were the ice rink, skateboard park

<sup>33</sup> There was a disparity in information obtained in the town-wide Recreation User Survey and at the public meeting regarding needs. The survey showed needs to be more/better walking, jogging, biking, playgrounds and restroom facilities, while at the public forum, the need for additional fields was quickly identified as a pressing need.

and park support buildings. Full discussions are located in the Park and Recreation Master Plan; however, several main points are included below.

- **Ice Rink** – the Parks and Recreation Master Plan notes that an ice rink should be privately funded and located on Route 53. In addition, the need for one was been identified within the User Survey and at public meetings.
- **Skateboard Park** - 210 middle school students signed a petition urging that a skateboard park be constructed in Hanover. The Parks and Recreation Committee did discuss location for a skateboard park, and determined that it would need to be monitored 24 hours a day and a good location for one would be Gallant if a new fire station is built there or across from the Police Station. Both locations would allow for 24 hour supervision.
- **Park Support Buildings** - a park support building would provide space for restrooms and storage and might contain a concession facility to support various leagues and programs.

### **Local Recreational Programming**

Participation in local sports and local recreational programming is excellent in the Town of Hanover. In addition to the Parks and Recreation Department, Hanover also has a Youth Athletic Association that provides a number of recreational programs in the community. The Parks and Recreation Department is responsible for programming for the Town and there is coordination with the DPW regarding maintenance of recreational amenities like fields and playgrounds. The Hanover Youth Athletic Association (a 100% volunteer organization) has been in existence for over 50 years and up until recently, was the primary recreation program provider. Currently the HYAA, Parks and Recreation Department and DPW work closely together on all organized recreational activities.

Listed below is a general summary (not all inclusive) of the types of recreational amenities available to residents of Hanover and the locations where these activities take place.

Baseball/Softball Fields:	Amos Gallant Field, B. Everett Hall Field, Briggs Field, Calvin J. Ellis Field, Center School Fields, Hanover High School, Hanover Middle School, Myrtle/Center Fields, Salmond School Fields, Sylvester School Fields
Soccer/Football Fields:	B. Everett Hall Field, Hanover High School, Hanover Middle School
Basketball Courts:	B. Everett Hall Field, Hanover High School, Hanover Middle School, Myrtle/Center Fields
Tennis Courts:	B. Everett Hall Field, Hanover High School

Playgrounds:	B. Everett Hall Field, Cedar School Field, Center School Fields, Sylvester School Fields
Trails:	Colby Phillips, Fireworks Property, Indian Head/Riverside Land, Luddams Ford, Plain Street Property, Willow Road Site, High School Cross Country Trail, Frenches Stream, King Street Property, Merry Property, Center School Trail
Passive Recreation:	Luddams Ford, Forge Pond, Colby Phillips, Bonney Conservation Land, Clark Land, Fireworks Property, Merry Property, Melody Woods
Running Track:	Hanover High School
Fishing:	Luddams Ford

Programming in Hanover includes but is not limited to:

- Bandstand Summer Concert Series, Archery, Basketball, Fencing, Babysitting Classes, Fitness Conditioning Program, Kitchen Kids, Piano Lessons, Stroller Strides, Tennis, Wrestling, Youth Hockey, Youth Lacrosse, Baseball, Spring/Fall Soccer, Softball, Cheerleading, Football, Paintball Trip, Skiing Trips, Mohawk Trail Trip, Circus Trip, New York City Day Trip, High School Musical Trip, Summer Park and Recreation Program, Learn to Ski, Teen Extreme

For more information, the following websites are available:

[www.hanover-ma.gov](http://www.hanover-ma.gov)  
<http://www.hanover-ma.gov/bandstand.shtml>  
<http://www.hanover-youthathletics.com/>

### **National Park Land Standards<sup>34</sup>**

According to the National Park Land Standards, below is a guideline for what types of amenities a typical community should have in terms of recreation based on their population size. For comparison purposes, the standards are listed below so that Hanover can further consider what types of facilities it may need in the future.

<u>Facility</u>	<u>Area Needed</u>	<u>Units per Population</u>	<u>Service Area</u>
Basketball Court	7,280 sq. ft.	1 per 5,000	1/4-1/2 mile

<sup>34</sup> NRPA Standards, School of Park and Recreation Management, [INTERNET]  
[http://www.ci.big-spring.tx.us/Recreation/park\\_standards.html](http://www.ci.big-spring.tx.us/Recreation/park_standards.html), March 2007.

Tennis Court	1 court	1 per 2,000	1/4-1/2 mile
Volleyball	4,000 sq. ft.	1 per 5,000	1/4-1/2 mile
Baseball	1.2 acres minimum	1 per 5,000	1/4-1/2 mile
Football	1.5 acres	1 per 20,000	20 min travel
Soccer	1.7-2.1 acres	1 per 10,000	popularity level
Softball	1.5-2 acres	1 per 5,000	1/4-1/2 mile
Multi-use Court	9,840 sq ft	1 per 10,000	1/4-1/2 mile
Swimming Pool	2 acres minimum	1 per 20,000	30 min travel
Trails	1 trail system per region		

### Hanover Council on Aging

The Hanover Council on Aging was formed in 1966 and is currently located in the Senior Center building on Circuit Street. The Senior Center serves as a meeting place for seniors to enjoy, as well as a community resource for services, information and referrals for the older adult population and their families. The Senior Center office has a five person paid staff: Elderly Services Director, full-time position; Outreach Coordinator, full-time position; one full time position shared among four drivers; and a Custodian, 24 hours a week. The Senior Center has a Meal Site Manager who is paid through Old Colony Elderly Services (OCES) and a Volunteer/Transportation Coordinator who is partially paid through a grant from the Executive Office of Elder Affairs. In addition, there is a Council on Aging Advisory Board and a Friends of the Council on Aging Group.

According to the Council on Aging's webpage, *"the mission of the Hanover Council on Aging, interchangeably known as the Senior Center, is to provide services, programs and activities to maintain and increase independence and quality of life for residents sixty years of age and older. The Council identifies and assesses the needs of elders, and offers services to meet the challenges of aging. There are 2,375 residents of Hanover who are 60 years of age and older as of Fiscal Year 2005."*

Programs and services offered by the Council on Aging include (but are not limited to):

- Congregate Lunch Program (consisting of luncheons and Meals and Wheels)
- Fuel Assistance Program
- Food Stamp Program
- Prescription Advantage Program
- Tax Assistance
- Legal and Accounting Assistance
- Blood Pressure Check
- Foot Clinic
- Massage
- A Council on Aging Van to help Seniors get to appointments
- Yoga
- Cribbage
- Movies



- Walking Club
- Line Dancing
- Bingo
- Book Club

According to the Council on Aging 2005 Annual Report, *“the Senior Center at 624 Circuit Street is housed in the former King Street School, which over the years has been remodeled and improved. The lot is approximately three fourths of an acre, the building is approximately 2,000 square feet, and there is parking for about 27 cars plus 4 handicaps. The estimated senior population, over 60 years of age, is 2,376 or 16% of the population. On average, approximately 500 people use the Center from time to time or approximately 22% of the seniors. Estimates are that by the year 2020, 27% will be over 60. In towns with a new facility, the percentage of use has greatly increased.*

*The current space available restricts the extent of the programs and the ability to carry out different programs at the same time. For example, if there are health and fitness classes going on, there’s no space for other activities such as arts and crafts. There is also no office or conference room space for seniors to discuss, with the Director or other councilors, such problems as health care, financial problems or needs of caregivers, all of which require confidentiality. The one main room only seats approximately 75, which restricts participation in many activities such as special holiday events. This necessitates a waiting list, which means some of those who wish to attend are turned away. Expansion of the present facility is not possible due to the size of the lot and even if an addition could be effectively designed, the already limited parking would be diminished and there is no room for septic system expansion.”*

Recently, at the 2007 Town Meeting a proposal was made for a Senior Center to be located at the Myrtle Street property. The proposal passed at Town Meeting, but was defeated at the Town election. The need for a new Senior Center in the Town of Hanover currently still remains.

### **Open Space and Recreation Plan Survey**

Hanover prepared and administered a townwide survey regarding Open Space and Recreation during the OSRP update project (full survey is included in Appendix C. The purpose of the survey was to provide another opportunity for local residents to offer their thoughts and ideas regarding open space, natural resources and recreational amenities in Town. The survey was conducted in August and September 2007 and was made available through a link on the Town website and a copy of the survey was also mailed to every household in the community. In total, 246 responses were received.

Approximately, 95% of the survey respondents said they feel there is a need to preserve open space and natural areas in Hanover. Respondents specifically noted that without protecting these resources, Hanover will lose its small town, country charm that so many residents love. In addition, respondents felt that it was important for their children to live

in a town where they can grow and learn about nature and reap the health benefits of utilizing open space and natural areas. Survey respondents also felt that Hanover is becoming overdeveloped, both by commercial businesses and residential homes.

### **Quality of Life**

Residents that responded to the survey indicated the importance of the following statements regarding quality of life in their neighborhood and Hanover in general. From most important to least important, they are:

- Protecting open space from development
- Preserving environmentally sensitive areas
- Maintaining scenic byways/roadways
- Protecting scenic views
- Offering recreational areas for youth
- Offering recreational areas for adults
- Creating town gathering places

### **Does Hanover Meet Your Needs?**

In addition, survey respondents also indicated how well they felt the Town serves their needs in the following areas. From serving very well to not serving very well, they are:

- Parks and park facilities
- Recreation programs
- Historic and cultural resources
- Open space preservation and conservation lands
- Equestrian trails
- Walking trails
- Water access
- Bicycle trails

### **Sidewalks**

Survey respondents generally thought that there are not enough sidewalks in Hanover. Several people noted that they like the way the Town of Hingham has utilized and located their sidewalks, and think a similar look would be appropriate in Hanover. Areas where respondents thought sidewalks should be addressed in Hanover include:

- All of the main commuter roads
- Main Street, Webster, Route 124, Broadway, Circuit, Center, Spring, Whiting, Myrtle, Silver, Dillingham, Woodland Drive, West Avenue, King, Union, Pleasant, Grove and all routes that lead to and from the schools.

### **Activities and Priorities**

The most popular recreational activities that residents participate in according to the survey include walking, bandstand activities, playgrounds, biking, jogging and bird watching. Other activities noted in the survey were going to historical sites, golf, swimming, tennis, basketball, horseback riding, trail hiking and kayaking/canoeing. Respondents were also asked to help the Town prioritize where they thought money should be spent regarding park and recreation facilities and open space. According to the survey, the first five open space and recreation priorities for the Town of Hanover should be to:

- Buy more open space
- Repair/maintain existing sports fields
- Map and mark existing walking trails
- Construct and build a paved bike path
- Create more small, local parks in various areas of town

In addition, residents would most like the Open Space Committee to focus on trail maintenance and adding new trails in Hanover, acquiring additional open space, and public education and outreach.

### **Needs/Areas of Improvement**

Areas of need in the Town of Hanover regarding open space, recreation and natural areas include:

- Acquisition of additional open space and natural areas,
- Improvement of access to information about open space and recreational programming. Continuing to advertise about public events and put articles in the local newspaper regarding open space and recreation, in addition to utilizing the Hanover website, and sending out information via mail would be the most effective ways to continue outreach regarding open space and recreation.
- Accessibility for handicapped individuals at a number of facilities in Hanover which have been identified in the ADA Study section of this report. Considering applying for CPA money to fund improvements may be appropriate.
- Another approach to preserving Open Space (that has not received much attention in Hanover) is to establish a Cluster Development Bylaw whereby more acreage could be left untouched in a development in exchange for smaller lot requirements and narrower roadways. Developers should also be strongly encouraged to utilize (and be rewarded for practicing) Low Impact Development techniques.
- Finding and utilizing additional sources of funding. The Open Space Committee and Recreation Committee should review all potential grant funding opportunities listed in this plan and any others that they find and set up a system for identifying which grants may be applicable/good to consider applying for in Hanover,

monitor the grant type, submission deadlines, enlist local support and keep the Town and CPC informed of grants that may require matching funds.

- Increase the part-time Parks and Recreation Administrator position to full time.
- Expand the Planning Department by hiring at least another part-time Planner.
- Improved coordination and communication amongst the various boards, departments and key stakeholders in Hanover involved with open space and recreation.
- A new Senior Center for the Council on Aging and associated programs/events.
- Think about and plan for the long term maintenance of improvements to parks, fields and other recreational amenities. For example, irrigation, manpower to maintain the fields and parks and how additional manpower would affect the tax roll. Also, environmental impact and drainage of major projects should be considered heavily and planned for in detail. (This will be important to keep in mind regarding any projects that come from the Parks and Recreation Master Plan.)

According to the Parks and Recreation Master Plan, a number of basic, recurring needs/improvement themes became apparent. The basic improvement themes, to be implemented potentially at all or most recreational properties at some point in the future as capital improvements are planned and constructed include:

- **Pathways, Trails & Picnic Areas** - The preferred master plans call for incorporating new (and upgrading where applicable) pathways, trails and picnic areas at all park locations studied. These types of passive recreational amenities provide opportunities for enjoyment by residents of all ages, backgrounds and abilities and they compliment the traditional active recreational facilities at a given property. At most sites, pathways could be constructed in a manner that is ADA compliant due to the typically gentle terrains that prevail.
- **Children's Playgrounds** - The Park and Recreation user survey process identified the need for Children's playgrounds at each of the properties studied during the project. Playgrounds provide a destination for neighborhood children and their parents and as such often become hubs of community life. Playgrounds also provide outlets for the siblings of children involved in other recreational activities (like a baseball, soccer or lacrosse game) at the same property.
- **Access and Linkages** - Provide new and improved opportunities to access the public properties (by foot or by car), provide convenient and appropriately scaled parking amenities and reduce conflicts between pedestrians and drivers. Provide logical, ADA compliant linkages between various site features and facilities within a given park/school/open space property.
- **Support Buildings** – Potential locations of park support buildings are indicated on most of the preferred master plans. Support buildings would contain at least restroom and storage accommodations. Where appropriate, slightly larger structures might contain a concession room or space.

- **Athletic Fields and Courts** - The master planning process identified the need for providing new and refurbished athletic facilities (fields, diamonds, courts...) in order to better support the myriad of sports programs that operate within the community. At present, based on participation rates for various activities, there are simply too few fields to accommodate the sheer number of users. The resulting problem is two fold in that certain programs cannot be adequately served and the desired field conditions cannot be maintained due to heavy programming and use. *This situation is expected to worsen when field facilities go off line in conjunction with a major reconstruction project at Hanover High School.*
- **Informal Playing Fields** – Within all communities there is always a need for informal play fields for pick up games, less formal practices, kite flying, Frisbee tossing etc. The proposed Master plans address these needs as space allows. Also, when not programmed, some fields can be used for open play. The Parks and Recreation Committee may want to limit this use, however, due to the need to occasionally rest the fields.
- **Basic Park Aesthetics and Inherent Natural Qualities** - The preferred master plans identify improvements that help to protect, preserve and enhance the aesthetics and inherent natural qualities and features of a given property and that improve sustainability.

#### 7.4 Potential Funding Sources

There is a wealth of funding sources available through the Department of Conservation and Recreation (DCR) that the Town of Hanover may want to consider utilizing for future open space and recreation acquisitions and relevant projects. Below is a list of the many programs that exist. The Open Space Committee and the Parks and Recreation Committee should consider assigning several committee members to monitor grant funding opportunities and coordinate accordingly with the Town Planner. Additional information can be obtained from <http://www.mass.gov/dcr/grants.htm>.

*Greenways and Trails Demonstration Grants Program* – According to the Department of Conservation and Recreation, greenways are corridors of land and water that protect and link a variety of natural, cultural, and recreational resources. The Division of Conservation and Recreation provides grant awards to municipalities, non-profits and regional planning agencies to support innovative projects, which advance the creation and promotion of greenway and trail networks throughout Massachusetts. DCR provides grants of up to \$5,000 to non-profit organizations, municipalities, and regional planning associations to support innovative greenway and trail projects throughout Massachusetts. DCR will also consider requests of up to \$10,000 for multi-town greenway and trail projects. These additional funds are intended to promote linkages across town boundaries and foster partnerships among neighboring communities. This grant program was not funded for 2007, however, it should be monitored for future grant funding rounds. <http://www.mass.gov/dcr/stewardship/greenway/grants.htm>

*Recreational Trails Grant Program* - The Recreational Trails Program, part of the federal "Transportation Efficiency Act for the 21st Century (TEA-21)," provides for the transfer of fuel tax revenue generated by the use of off-highway vehicles and in backcountry camping to a statewide grants program. These grants provide reimbursement to non-profit organizations, government agencies and municipalities for a variety of trail protection, construction, and stewardship projects. Recreational Trails Grants must be submitted this year by October 1, 2007.

<http://www.mass.gov/dcr/stewardship/greenway/regionalGrants.htm>

*Flood Management Grants* – The Federal Department of Flood Hazard Management, in coordination with the Massachusetts Emergency Management Agency, offers two grant programs to local government in order to reduce the risks and costs of natural disasters, especially floods, on homeowners and community infrastructure. These programs include pre-disaster grants through the annual Pre-Disaster Mitigation Program and post-disaster grants through the Hazard Mitigation Grant Program (HMGP).

<http://www.mass.gov/dcr/stewardship/mitigate/grants.htm>

*Lake and Pond Grant Program* – The Lake and Pond grant program awards grants for the protection, preservation and enhancement of public lakes and ponds in the Commonwealth. A maximum grant of \$25,000 is available to eligible applicants on a 50/50 cost-sharing basis. The grant program helps municipalities and local organizations that are struggling to meet the challenges of providing long-term solutions for lake and ponds management.

<http://www.mass.gov/dcr/waterSupply/lakepond/lakepond.htm>

*Urban Forest Planning and Education Grants* - The goal of the Urban Forestry program is to assist communities and nonprofit groups in building support for the long-term protection and management of community trees and forests. The USDA Forest Service provides the grant funds that the DCR administers with guidance from the Massachusetts Community Forestry Council. A maximum of \$10,000 is available per project.

<http://www.mass.gov/dcr/stewardship/forestry/urban/urbanGrants.htm>

*Rivers and Harbors Grant Program* - A statewide program of matching grants from DCR's Office of Waterways to towns and municipalities for design and construction to address problems on coastal and inland waterways, lakes and great ponds.

<http://www.mass.gov/dcr/stewardship/forestry/urban/index.htm>

The Division of Conservation Services (DCS) also administers several grants that the Town of Hanover may be interested in pursuing. According to the DCS website (<http://www.mass.gov/envir/dcs/default.htm>), they are:

*Massachusetts Self-Help Program* - The Self-Help program started in 1961 to help conservation commissions acquire land for natural resource and passive outdoor recreation purposes. Lands acquired may include wildlife, habitat, trails, unique natural,

historic or cultural resources, water resources, forest, and farm land. Compatible passive outdoor recreational uses such as hiking, fishing, hunting, cross-country skiing, bird observation and the like are encouraged by this grant program. Projects that are applying for funding must allow access by the general public (a requirement). This state program pays for the acquisition of land, or a partial interest (such as a conservation restriction), and associated acquisition costs such as appraisal reports and closing costs.

<http://www.mass.gov/envir/dcs/selfhelp/default.htm>

*Massachusetts Urban Self-Help Program* - The Urban Self-Help Program started in 1977 to assist cities and towns in acquiring and developing land for park and outdoor recreation purposes. Any town with a population of 35,000 or more year-round residents, or any city regardless of size, that has an authorized park /recreation commission and conservation commission, is eligible to participate in the program. **Communities that do not meet the population criteria listed above may still qualify under the "small town," "regional," or "statewide" project provisions of the program.** Only projects that are to be developed for suitable outdoor recreation purposes, whether active or passive in nature, shall be considered for funding. Grants are available for the acquisition of land, and the construction, restoration, or rehabilitation of land for park and outdoor recreation purposes such as swimming pools, zoos, athletic play fields, playgrounds and game courts. Access by the general public for the proposed project is required.

<http://www.mass.gov/envir/dcs/urban/default.htm>

*Massachusetts Land and Water Conservation Fund* - The Federal Land & Water Conservation Fund (P.L.88-578) provides up to 50% of the total project cost for the acquisition, development and renovation of park, recreation or conservation areas. Municipalities, special districts and state agencies are eligible to apply. Nearly 4000 acres have been acquired and hundreds of parks renovated using the \$90.5 million that Massachusetts has received from the state side portion of the federal program since 1965. DCS administers the state side Land & Water Conservation Fund program in Massachusetts. Access by the general public for proposed projects is required. To apply for a park acquisition or park development project grant, see the Recreation Application Package. To apply for a conservation acquisition grant, see the Conservation Application Package. <http://www.mass.gov/envir/dcs/landwater/default.htm>

The National Fish and Wildlife Foundation offers two different types of grant programs, they include:

*Keystone Initiative Grants* – The National Fish and Wildlife Foundation seeks to achieve measurable outcomes on a select set of conservation issues through our Keystone Initiatives. Within each of the initial Keystone Initiatives (i.e., Birds, Freshwater Fish, Wildlife & Habitat, Marine & Coastal), the Foundation has established specific funding priorities. Federal, state, and local governments, educational institutions, and nonprofit organizations are welcome to apply for matching grants twice annually, in accordance with the Keystone Initiative Grant guidelines. Awards are made on a competitive basis to



eligible grant recipients, including federal, tribal, state, and local governments, educational institutions, and non-profit conservation organizations. Project proposals are received on a year-round, revolving basis with two decision cycles per year. Grants generally range from \$50,000-\$300,000 and typically require a minimum 2:1 non-federal match. For more information, go to the following website:

[http://www.nfwf.org/AM/Template.cfm?Section=Keystone\\_Initiatives\\_Grant\\_Guidelines](http://www.nfwf.org/AM/Template.cfm?Section=Keystone_Initiatives_Grant_Guidelines)

*Special Grant Programs* - In addition to the general matching grant, the Foundation administers a number of special grant programs with specific guidelines and time-lines. If your project does not meet the criteria of any program described below, please consider applying under the general matching grant program. Also, please note, if your project is not funded under the grant program for which it was submitted, Foundation staff may move your project to the general matching grant program or a different special grant program if it has the potential of being funded under it. Program deadlines are listed for the most recent grant cycle and are updated when a new call for proposals is released. For more information, go to:

[http://www.nfwf.org/AM/Template.cfm?Section=Browse\\_All\\_Programs](http://www.nfwf.org/AM/Template.cfm?Section=Browse_All_Programs).

## **7.5 State Open Space and Recreation Efforts (SCORP)**

In 2000, the Commonwealth of Massachusetts prepared a document called the *Statewide Comprehensive Outdoor Recreation Plan* (SCORP). The SCORP document looks at open space and recreation from a regional perspective. The purpose of the document is to help cities and communities in Massachusetts better direct local investment into protecting and enhancing open space and recreational amenities. Hanover is located in the Southeastern region identified in the report which only has 14% of its land area protected or in recreation use, even though it has the third largest population at 1.1 million of the regions studied. Specifically mentioned in the SCORP report is the fact that there is no single, major land holding of significance by a federal management entity.

The Southeastern region is fortunate to have a variety of open space, natural and recreational resources. The three most popular individual activities in the region are swimming, sightseeing, tours and events and walking. Other common activities that residents and visitors to the region participate in include playground activities, fishing, hiking, golfing, viewing and studying wildlife, biking, skiing, boating and canoeing. The report also states that “*when grouped by type of activity, the water-based activities predominate, but as in other regions, there is strong participation in some dimension of each type. A rough rank order would be water-based, passive, trail-based, field-based, and wilderness activities.*” The most widely visited sites in the region are the coastal beaches and shorelines.

In terms of facilities need, the Southeast region residents indicated that more golf courses, neighborhood parks, playgrounds and tot lots, agricultural lands and rivers and streams are necessary. All of the activities that were noted as needed, were also identified in the report as having middle to low levels of current participation, even

though the resources themselves are in relatively decent abundance. The report stated that access to these resources may be part of the perceived need, along with maintenance of existing resources. A need was also noted for additional historic and cultural resources.

## **7.6 Management Capacity**

The Town of Hanover is fortunate to have a number of active boards and committees who are working towards improving open space and recreation opportunities in the community. Moving forward, in order to ensure successful implementation of the 2007 Open Space and Recreation Plan update, outstanding communication will be paramount between boards, committees, town staff and local residents. The Board of Selectmen, Town Planner, Conservation Commission, Open Space Committee, Parks and Recreation Committee, Community Preservation Committee and Planning Board all need to make a commitment to work together so that the goals, objectives and action items of this plan will be addressed and attained. In order to set the stage for good communication, a specific entity in the Town of Hanover should be assigned to oversee the implementation of the overall OSRP. The best suited committees would be the Open Space Committee and the Parks and Recreation Committee who would work together on a regular basis.

In general regarding the maintenance of fields and playgrounds, the Town of Hanover does need additional manpower in the Department of Public Works. The DPW and School Department should continue to coordinate efforts that pertain to maintenance, however, before any additional fields and playgrounds are planned and constructed, the Town needs to consider the maintenance of such facilities and discuss it with DPW and the School Department in terms of how they will be taken care of in the future.

### **Open Space Committee**

The Hanover Open Space Committee's mission is to ensure that the town's rural character is maintained and enhanced both through protection of existing resources and acquisition of new properties. The Committee is made up of seven local citizens who work together to plan for and facilitate the improvement of open space resources in Hanover. One major undertaking of the Committee has been the Hanover Greenway project which is focused on establishing a continuous walking trail from Hanover High School to Luddam's Ford park (the 1999 Hanover Greenway Project Report is included in Appendix E). In addition, the Committee has intently focused on trails at other locations in the community including improving them and adding linkages. Another interest of the Committee is continuing to protect available land in the community from adverse impact and development. Educating the public and working to preserve the character and charm of Hanover through land conservation is an important initiative of the Committee.

### **Parks & Recreation Committee**

The Hanover Park and Recreation Committee is a six member appointed Board which was first established as the Playground Committee at the March 1930 Annual Town Meeting, and reestablished under the provisions of Massachusetts General Laws (M.G.L.)

Chapter 45, Section 14. The Playground Committee was active in the 1950s and 1960s with projects such as the creation and dedication of Calvin Ellis Park and the purchase of 60 acres of land on Myrtle and Center Streets. In 1971, the Town voted to change the name of the committee to the Hanover Parks and Recreation Committee who continued to organize year round programming activities like skiing and swimming. At the 2004 Town Meeting, the bylaws for the Parks and Recreation Committee were amended and eight specific responsibilities were identified which include:

- Overseeing the day to day maintenance and improvements of the recreation facilities under its jurisdiction, together with the fences, bleachers, dugouts and other appurtenances;
- Scheduling the use of ball courts, fields and other recreation facilities;
- Implementing and managing recreation programs;
- Coordinating the Bandstand Summer Concert Series with all activities incidental thereto;
- Hiring and overseeing employees and volunteers to work in recreation programs;
- Preparing, administering and monitoring the annual budget, including controlling Parks and Recreation Trust Funds, Revolving accounts,
- General Fund accounts; and
- Working with other Town Officers to ensure all safety, access, employment, construction and other legal requirements are met.

The primary responsibility of the Parks and Recreation Committee is to manage and provide recreational programming in Hanover. In addition, they also manage and coordinate all field/space permits and they maintain the overall recreational programming calendar. The committee works closely and collaboratively with the Department of Public Works who maintains all of their properties and the Hanover Youth Athletic Association (a 100% volunteer youth recreational program group) who conducts a majority of the sports programs offered such as football, baseball, basketball, cheerleading and soccer. In August 2005, the Parks and Recreation Committee hired its first paid staff, a part time Recreation Administrator which was something Hanover had talked about doing for years. The purpose was to improve and increase the amount of year round funded recreational programs offered in town. There is a need to increase the part-time Parks and Recreation staff position to full time.

#### **Community Preservation Committee (CPC)**

The primary responsibility of the Community Preservation Committee is to appropriate allocate funds acquired through the Community Preservation Act that was adopted in Hanover in 2005. Projects that are eligible for CPA funding are those that preserve open space and historic sites and create affordable housing and recreational facilities. Hanover's CPC is a nine member committee. In addition to evaluating projects for criteria and goals as stated in Hanover's Community Preservation Plan, they also evaluate projects according to the following criteria:

- Consistency with Hanover's 1997 Open Space and Recreation Plan, and other planning documents that have received wide input and scrutiny,
- Feasibility,
- Urgency,
- Affordability,
- Serving a currently under-served population,
- Serving multiple needs and populations,
- Consistency with recent town meeting actions,
- Preservation of currently-owned town assets,
- Acquisition of threatened resources,
- Multiple sources of funding, and
- Use of local contractors where possible.

### **Non-Profit/Volunteer Organizations**

The Town of Hanover is fortunate to have a number of non-profit/volunteer organizations that take the initiative to do extensive work in the community in terms of conservation, education and natural resource protection. Some of the organizations include:

#### **North/South River Watershed Association<sup>35</sup>**

*"The North and South Rivers Watershed Association, Inc. (NSRWA) is a non-profit grassroots environmental organization located on the South Shore of Massachusetts. The NSRWA was founded in 1970 and has grown to over 1,500 members today, comprised of individuals, families, businesses, and other environmentally-concerned organizations. The membership comes primarily from the 12 towns within the watershed: Norwell, Hingham, Scituate, Marshfield, Hanover, Pembroke, Whitman, Hanson, Duxbury, Weymouth, Rockland and Abington. The NSRWA was created by a handful of river-lovers bound together by an intense devotion to the natural beauty of the area and a strong commitment to protect these natural resources for their own and future generations.*

*The mission of the NSRWA is to preserve, restore, maintain and conserve in their natural state, the waters and related natural resources within the watershed.*

*Goals of the organization are to:*

- *Protect the watershed and promote responsible growth by working in partnerships to preserve open space, scenic vistas and sensitive natural resources;*
- *Educate and encourage stewardship of the watershed through public education, outreach and recreation programs; and*
- *Restore the water quality of the rivers by identifying and correcting adverse*

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<sup>35</sup> The North and South Rivers Watershed Association, [INTERNET] <http://www.nsrwa.org/default.asp>, accessed October 25, 2007

*impacts.”*

<http://www.nsrwa.org/default.asp>

### **North River Commission**

The North River Commission was established by the Massachusetts Departments of Environmental Management (DEM) pursuant to the Scenic and Recreational Rivers Act, G.L.c.21, s. 17B and the North River Commission Act, c.367, s.62 of the Acts of 1978. The North River does have a Scenic and Recreational Protective Order which is a set of regulations adopted in 1978 by the Massachusetts Legislature, acknowledging the significance of the North River as a recreational and scenic resource in Massachusetts. To preserve this natural resource, the regulations identify the River Corridor (land subject to protection under the Order) and specify allowed, prohibited, and special permitted uses within the Corridor.

According to the North River Commission, *“the goal of the Protective Order is to preserve and protect the North River for use and enjoyment today and for years to come. The mission of the North River Commission is to make that goal a reality. This can be achieved if interested citizens, municipal officials, environmental professional and property owners all join with the Commission to share in stewardship of this great local resource.”* <http://www.nsrwa.org/NRC/default.htm>

### **The Wildlands Trust**

The Wildlands Trust actively seeks to permanently protect land with significant natural and scenic resource value using techniques such as land donations, conservation restrictions (also known as conservation easements), trade lands, and other conservation methods. The Trust's primary focus areas encompass Plymouth and Bristol counties, but it is empowered to protect land in Barnstable and Norfolk counties also. <http://www.wildlandstrust.org/index.html>

## Section 8.0

### Goals and Objectives

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*Photo by Mary McCrann, Ellis Field*



## **8.0 GOALS AND OBJECTIVES**

Goals and objectives for the Hanover Open Space and Recreation Plan update were developed using input received from a number of resources including two Public Forums, Hanover residents who participated in Hanover Day, a town wide survey, comments from members of the Parks and Recreation Committee, comments from Town staff and from comments from the Hanover Open Space Committee. For purposes of this project, goals were formed around a general vision or concept and the objectives listed are more concrete ideas for accomplishing the stated goals. The action items in Section 9.0 are specific activities that make achieving the goals and objectives realistic.

Beals and Thomas, Inc. also reviewed the recent Hanover Parks and Recreation Master Plan, Historic Preservation Plan and the 1997 Hanover Master Plan to determine what goals were specified that would pertain to the more specific Open Space and Recreation Plan.

### **MANAGEMENT**

#### **GOAL 1: Assign a specific entity to oversee the implementation of the overall Open Space and Recreation Plan.**

- The Open Space Committee and the Parks and Recreation Committee should work together on a regular basis to implement the Open Space and Recreation Plan with oversight from the Town Administrator, Town Planner and Parks and Recreation staff person.
- Inform other Boards and Committees (Conservation Commission, DPW, Board of Health, Historic Commission, Community Preservation Committee, etc.) of the Open Space Committee and Parks and Recreation Committee's implementation efforts.
- Designate at least one member of the Open Space Committee and one member of the Parks and Recreation Committee (with assistance of the Town Planner where needed) to thoroughly research and monitor the types of grant funding listed in the body of the OSRP update so as to better target specific projects and maximize the potential to apply for and receive grant funding (See Section 7.0). Another option might be for the Town to hire additional staff, or a consultant to monitor and apply for grant funding.

#### **GOAL 2: Devise and maintain a system for targeting and prioritizing land for future property acquisition.**

- Utilize the Land Acquisition Worksheet on potential open space parcels to determine priority of potential purchase (outlined in Section 7.0).
- The Open Space Committee should work closely with the Town Planner and communicate when properties come up for acquisition through the Planning Board. Ideally, a member of the Planning Board would sit on the Open Space Committee.



- The Open Space Committee should continue their outreach efforts to local landowners and pursue the protection of properties that classify as high priority.
- Develop a more formal property tracking system/database for monitoring land of interest, property owners, and what type of contact has been made.
- Consider the potential options for forming a Land Trust to oversee the proper management of particular open space parcels within the Town.

## COMMUNITY CHARACTER

### **GOAL 3: Preserve and protect open space and natural areas in Hanover because they provide linkages between the history of the Town and the present conditions.**

- Acquire additional open space and natural areas.
- Further protect the natural areas adjacent to the North River/Indian Head River due to their status as critically important habitat areas (the North River is an example of a Freshwater Tidal Marsh and Fresh/Brackish Tidal Swamp).
- Continue to implement projects which heighten public awareness of Hanover's unique natural and cultural resources (such as designating additional Scenic Roads).
- Utilize the Historic Preservation Plan and involve/collaborate with the Historical Commission whenever possible on joint projects.

### **GOAL 4: Collaborate with other committees, organizations and towns regarding open space and recreation projects and initiatives.**

- Communicate with Rockland, Norwell, Hanson, Pembroke and Weymouth Open Space Committees and Recreation Committees to share ideas, collaborate where possible and determine what some joint projects may be.
- The Open Space Committee could collaborate with the Southeastern Wildlands Trust, Recreation Committee, Historical Commission the Community Preservation Committee and others on projects whenever possible and to identify, acquire and manage open space to meet projected community needs. Offer support to each other on initiatives that organizations take on separately.

## OPEN SPACE AND NATURAL RESOURCES

### **GOAL 5: Continue to acquire additional open space.**

- Give priority to those open space acquisitions that meet criteria in the Land Acquisition Worksheet (See Section 7.0).
- If a property is already designated as open space, but does not have permanent protection (temporary and limited protection designations), work to protect the parcels in perpetuity.
- Acquire tax title lands for community purposes, including open space,

recreation, affordable housing, or municipal services.

- Inform Hanover residents about the Town's interest in preserving additional open space and make them aware of opportunities to do so such as conservation restrictions or selling the property.

**GOAL 6: Encourage sustainable growth, development and redevelopment consistent with the remaining carrying capacity of Hanover's natural environment.**

- Preserve significant natural and fragile resource areas during the design/permitting stage of developments. At the pre-application meeting discuss these resources in terms of the project. Such resources include critical wildlife and plant habitats, water resources (lakes, rivers, aquifers, wetlands, etc...) and historical, cultural and archaeological areas, scenic roads and views, and significant landforms.
- Add provisions to Hanover's regulations to ensure that development is consistent with Town character and goals and move them further to help promote good design.

**GOAL 7: Enhance public access to and appropriate use of existing conservation lands; continue to further the greenways initiative and creation/improvement of existing and new trails and monitor permanently protected conservation lands to ensure their character remains unchanged.**

- Inventory natural resources present on conservation lands, and identify the appropriate level and type of public access by developing and maintaining:
  - Data base of conservation lands and degree of public access,
  - Management plans to allow public access without harming environmentally sensitive areas, and
  - Rules and regulations pertaining to the use of public lands.
- Improve and maintain public access to conservation parcels.
  - Establish a group of volunteers responsible for creating and maintaining trails. This group should include a member of the Conservation Commission, or at a minimum, review placement of new trails in order to avoid impacts to important natural resources, including wetlands and rare species.
- Monitor and promptly remove invasive species from conservation lands before they become a problem and impact native species.

**GOAL 8: Expand Hanover's local efforts and work towards taking a regional approach to protecting drinking water and provide long range protection of public drinking water supplies.**

- Protect land available around the Water Resource Protection District to act as a buffer to prevent contamination.
- Work with neighboring towns to formulate a plan for groundwater and surface water protection.

- Work with neighboring towns and land trusts to protect remaining open land in the area west and north along the Freshwater Tidal Marsh and Indian Head River.

## REGULATORY

### **GOAL 9: Improve and enhance Open Space and Recreation land within Hanover through regulatory methods.**

- Develop Open Space Development/Cluster Zoning Bylaw.
- Amend Subdivision Regulations to promote Low Impact Development techniques and green design.
- Hanover Boards/Town commissions should work closely with and ask for assistance from NHESP in reviewing any project proposed in the habitat areas of the regulatory areas of the maps in the Natural Heritage Atlas.
- Nominate Freshwater Tidal Marsh/Indian Head River area as an ACEC

## RECREATION

### **GOAL 10: Enhance, maintain and preserve passive and active recreational opportunities for Hanover residents and visitors of all ages, abilities and interests.**

- Focus on trail creation, maintenance and information outreach.
- Improve and create more equestrian trails, walking trails, water access and bicycle trails.
- Repair and maintain existing sports fields.
- Map and mark existing walking trails and access points to the trails.
- Create small, local parks in various areas of town.
- Maintain an accurate inventory of all of the recreational facilities (playing fields, courts, playgrounds etc.) and conservation areas in Hanover.
- Maintain an accurate inventory of all the recreational programming provided in the Town of Hanover.
- Use the ADA section of this plan and start to address needs of special user groups including handicapped and elderly and provide additional facilities and programs adequate to meet the identified needs.
- Inventory available parking at all town-owned conservation/ recreation areas and add parking where needed/appropriate.
- Research and apply for additional funding sources for the maintenance and upgrading of Hanover's parks and playgrounds (*See Section 7.0 for funding sources*).
- Address recreational needs identified in the Statewide Comprehensive Outdoor Recreation Plan. Needs include more swimming, road biking, walking, playground and tennis facilities (*See Section 7.0 for more information*).

- Utilize and make an effort to implement the Parks and Recreation Master Plan created in 2007/2008 by the Parks and Recreation Committee with their consultant.

## **EDUCATION**

**GOAL 11: Better educate Hanover residents about conservation and land use and provide education and materials on conservation and land use issues so as to improve their knowledge.**

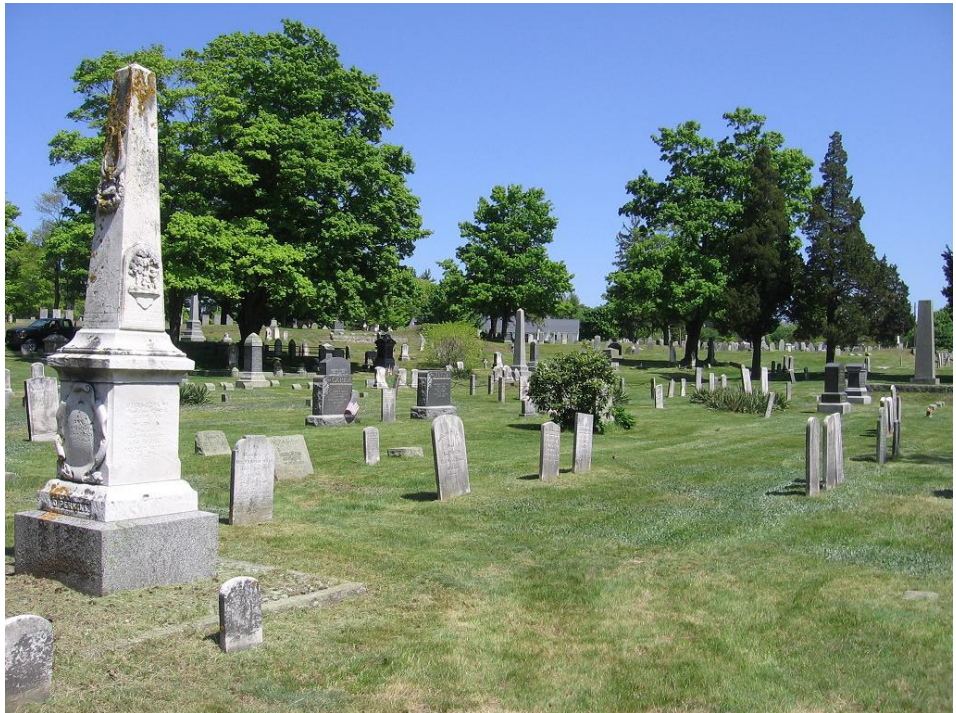
- Formulate a working group within the Open Space Committee with the assistance of the Conservation Commission to create brochures and pamphlets regarding M.G.L. Chapter 61, conservation restrictions, invasive species and wetlands.
- Invite knowledgeable citizens and professionals to hold seminars regarding conservation matters.
- Continue to hold guided walks through existing open space as a form of education and outreach.
- Consider providing a pamphlet to new Hanover residents from the Open Space Committee and the Conservation Commission regarding conservation, wetlands, invasive species and contact information should questions arise.

**GOAL 12: Improve public awareness and public access regarding Hanover's Open Space and Recreation assets.**

- Develop an inventory of existing recreation and cultural service providers that are associated with area organizations.
- Improve access to information about open space and recreational programming including placing articles in the newspaper, utilizing the Hanover website and sending out information via mail.
- The Parks and Recreation Committee should oversee the day to day maintenance and improvements of the recreation facilities under its jurisdiction, together with the fences, bleachers, dugouts and other appurtenances.

## Section 9.0 Five Year Action Plan

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*Photo by Mary McCrann, Hanover Center Cemetery*

## **9.0 FIVE YEAR ACTION PLAN**

The action plan is the section that details for the next five years, a timetable of specific actions and activities that should occur for successful implementation of the Hanover Open Space and Recreation Plan. The action items (or priorities) are based on the goals and objectives that were formulated in Section 8.0 and the needs analysis prepared in Section 7.0.

Section 9.0 is often the most difficult component of an Open Space and Recreation Plan for a number of reasons. An Action Plan can be difficult to commit to and be problematic to review over time. Items that have been accomplished fade from view, while the more intractable problems continue to haunt the town. Financial and political trends may change, advancing some items while leaving others untouched. For these reasons alone, many communities are hesitant to put in writing the full scope of their intentions.

The following action plan intends to deliver on the promise of the goals and objectives expressed throughout this process, with a program of tangible steps for Hanover to take over the next five years. There is a high level of activity on these issues, based upon the input received during the planning process (the Public Forums, Hanover Day, Citizen Survey). While all actions listed are recognized as important, two areas in particular rise to the top as being absolutely essential for any future progress towards meeting the goals of this Plan:

- *The collaboration of the Open Space Committee and the Parks and Recreation Committee to implement the Open Space and Recreation Plan.* Although there are many groups and departments active in open space and recreation issues in Hanover, their activities are not totally coordinated or focused. If the ambitious goals and objectives of this Plan are to be achieved, there needs to be a collaborative effort between these committees to oversee this progress and coordinate the actions and priorities of the other various groups. This effort should be overseen by the Town Administrator and the Town Planner. Other groups to involve throughout the process include but are not limited to:
  - Conservation Commission, Community Preservation Committee, Council on Aging, Hanover Youth Athletic Association, Private Non-Profits and State and County Resources
- *Continue to educate and involve the numerous Town Boards and Committees regarding this project and the relevant action items and remind them that Hanover's open space and recreational amenities are a central and lasting priority for the Town.* While there may be competing needs for time and funding, all groups must abide by the central tenet that open space and recreation issues are extremely

important to the residents of Hanover. Where open space and recreational resources are concerned, the goals and policies of this Plan and the members and staffs of the Town's open space agencies must be consulted. Furthermore, groups must agree in advance on the proper decision making procedures to be followed in such matters.

- *Securing additional sources of funding, staffing, and other support for open space and recreation activities and programs.* The Town of Hanover has an opportunity to seek out additional funding sources to achieve the goals of this Plan in addition to grant funding they have received in the past and Community Preservation Act funds. Support for the goals and objectives may be found in the form of donated community labor or park "adoption" by residents, or from federal, state, and private grants (See discussion in Section 7.0).



## 9.1 Five Year Action Plan Summary Table

**Abbreviation Key:** CC = Conservation Commission, TP = Town Planner, OSC = Open Space Committee, PRC = Parks and Recreation Committee, BOS = Board of Selectmen, BOH = Board of Health, CPC = Community Preservation Committee, HC = Historic Commission, TA = Town Administrator, PB = Planning Board, HYAA – Hanover Youth Athletic Association

#	Action Item	Year	Responsible Party	What Page is the Action Item on?
<b>Year 1 - 2008</b>				
1	Formally designate the Town Administrator as the coordinator of the Five Year Action plan. The Open Space Committee and the Parks and Recreation Committee should work closely with the Town Administrator to implement the Open Space and Recreation Plan, with the assistance of the Town Planner.	2008	TA, OSC, PRC, TP	9-8
2	The Open Space Committee and Parks and Recreation Committee should meet with the Board of Selectmen and Town Administrator to discuss the Open Space and Recreation Plan and its implementation.	2008	TA, OSC, PRC, TP, BOS	9-8
3	The Open Space Committee and Parks and Recreation Committee should develop a checklist of action items to accomplish that will also identify each committee's goals, their organizational responsibilities for the updated Open Space and Recreation Plan (including how they can/will work together) and regarding conservation and recreation programs and activities in the community. In addition, they should meet at least semi-annually and share progress memorandums and have joint meetings when possible.	2008	OSC, PRC, TP	9-8
4	Consider adding either a full or part-time position to the Planning Department to assist the Town Planner on local planning initiatives and help implement this plan and other projects, or offer an internship to a graduate student.	2008	TA, BOS, TP, CPC	9-9
5	Confirm that all commissions, committees, boards and pertinent town staff mentioned in this plan receive a copy of it and understand their role in its implementation.	2008	TP, OSC, PRC	9-9
6	Update every six months the list of key parcels of land which are of high interest for protection by acquisition or other methods. Consider transferring the care and custody to the Conservation Commission of existing open space where possible and add conservation restrictions to as many designated open space parcels as possible.	2008	TP, OSC, PB, CC	9-9
7	Modify the land acquisition worksheet as needed to ensure it is an appropriate evaluation tool to use when considering property for protection (located in Section 7.0). In addition, develop a computer database to track parcels of interest and status (this could be something like an Excel Spreadsheet) and update it frequently to monitor key parcels of	2008	OSC, TP	9-10

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	land which are of high interest for protection by acquisition or other methods.			
8	Identify major open space areas in abutting towns and develop a working relationship with representatives in communities like Rockland, Pembroke, Norwell and Hanson to discuss future projects. Communication needs to be more consistent.	2008	OSC, TP	9-10
9	Improve the communication and working relationships amongst the Open Space Committee, Parks and Recreation Committee and Community Preservation Committee. Hold a two to four hour working meeting (maybe a Saturday morning) with all three committees facilitated by a third party where goals and agendas of each committee would be stated and brainstorming could be done regarding how to better communicate and work together in the future.	2008	OSC, TP, CPC, PRC	9-10
10	Work with Pembroke and Norwell to nominate an area surrounding a portion of the North River/Indian Head River as an Area of Critical Environmental Concern. Go to <a href="http://www.mass.gov/dcr/stewardship/acec/aboutMaps.htm">http://www.mass.gov/dcr/stewardship/acec/aboutMaps.htm</a> for more nomination information, and see Section 4.0 for more details about the ACEC program. Hire a consultant if necessary to help with the nomination and consider using CPA funds to do so. The nomination should be made by the community.	2008	CC, TP, OSC	9-11
11	Develop educational materials about alternative methods used to leave land parcels in their natural state in perpetuity or available for public access as appropriate and a Frequently Asked Questions handout that the Open Space Committee could provide to landowners interested in more information about protecting their property.	2008	OSC, TP, CC	9-11
12	Research and apply for additional funding sources for the maintenance and upgrading of Hanover's parks, playgrounds and conservation areas (see Section 7.0 for a list of funding sources).	2008	TP, OSC, PRC	9-11
13	At the design/permitting state of developments, discuss the significant natural and fragile resource areas that may pertain to a project with would be developers. Such areas include critical wildlife and plant habitats, water resources and historical, cultural and archaeological areas, scenic roads and views and significant landforms. Encourage projects to take these areas into consideration. Where it makes sense, notify the Open Space Committee and ask for input when needed.	2008	TP, PB, CC, OSC	9-12
14	Continue to identify and certify vernal pools.	2008	CC	9-12
15	Develop a potential list of new trails for development and trails that need maintenance/signage and present the plan to the Town with the support of the Town Planner. Use this trails plan as a guide for projects and to seek out funding sources for passive and active recreation.	2008	OSC, TP, PRC	9-12
16	If possible, try to inventory natural resources present on conservation lands, and identify the appropriate level and type of public access.	2008	TP, CC, Volunteers	9-13

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17	Establish a group of volunteers responsible for creating and maintaining trails. This group should include a member of the Conservation Commission or at a minimum, review placement of new trails in order to avoid impacts to important natural resources, including wetlands and rare species.	2008	TP, CC, OSC, PRC, Volunteers	9-13
18	Continue to monitor and promptly remove invasive species from conservation lands before they become a problem and impact native species.	2008	CC, Volunteers	9-13
19	Specifically target land surrounding the Water Resource Protection District for protection to act as a buffer to prevent contamination of the water supply.	2008	OSC, TP	9-14
20	Contact twice annually representatives in neighboring towns to discuss groundwater and surface water protection and develop a collaborative plan/line of communication for doing so.	2008	TP, DPW	9-14
21	Investigate the potential of using another substance besides sand/salt on the roadways during the winter as a way to further protect drinking water.	2008	CC, DPW, BOS	9-14
22	Review the existing system for addressing failing septic systems and identify ways in which it can be approved.	2008	BOH, CC	9-14
23	Establish an Open Space Development Zoning Bylaw (sometimes known as Cluster Subdivision Bylaw). The Town of Hanover currently does not have such a Bylaw.	2008	TP, PB, BOS	9-15
24	Amend subdivision regulations to maximize amount of open space maintained in proposed developments (should be done in conjunction with the Open Space Development Zoning Bylaw).	2008	TP, PB, BOS	9-15
25	As also noted in the Historic Preservation Plan, revise the Village Planned Unit Development Bylaw.	2008	TP, PB, BOS	9-15
26	As also noted in the Historic Preservation Plan, revise the Retreat Lot Bylaw.	2008	TP, PB, BOS	9-15
27	Adopt a Scenic Road Bylaw to formalize the application and review process of projects along designated scenic roads.	2008	TP, PB, BOS	9-16
28	Develop a proposed plan for adding sidewalks to key roadways in Hanover. These connections should be throughout town to provide walking/biking networks where trails do not or cannot be added to the "Greenway." More sidewalks in Hanover was identified as a need in the Citizen Survey conducted for this project.	2008	TP, DPW	9-16
29	Investigate the potential of further utilizing Low Impact Development techniques and/or developing a Low Impact Development Bylaw.	2008	TP, CC	9-16
30	Investigate potential sites for a designated recreational programming facility/community center, including specific space for the Parks and Recreation Administrator.	2008	TP, PRC, OSC	9-17
31	Continue to focus on trail creation, maintenance and information outreach. Consider developing a trail management plan that utilizes the newly created trails layer and suggested maintenance/management techniques to use at the various sites.	2008	OSC, CC, TP, PRC	9-17

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32	Repair and maintain existing sports fields where necessary (utilize Parks and Recreation Master Plan). A maintenance schedule should be developed.	2008	PRC, DPW	9-17
33	Work with the Town Planner to identify where equestrian trails, walking trails, bicycle trails and water access could be added/improved in the Town of Hanover. Develop a memorandum summarizing the findings, circulate it to all relevant boards and commissions and suggest next steps.	2008	OSC, CC, PRC, TP	9-17
34	When possible, address needs identified in the Statewide Comprehensive Outdoor Recreation Plan. The needs identified were more swimming, road biking, walking, playground and tennis facilities in Hanover. Consider including these elements when moving forward with new projects or updating existing sites.	2008	TP, OSC, PRC	9-18
35	Continue to map and mark existing walking trails and access points to the trails in Hanover. Consider preparing a more formal walking trail map, similar to that of the Town of Needham (one Open Space Committee member should investigate Needham's work and report back). Once everything is mapped, visit the map annually and update it.	2008	OSC, TP	9-18
36	Investigate in detail the potential of creating small, local parks in various areas of Town where there are currently no amenities available, particularly in the northern part of town on Town-owned land.	2008	PRC, TP	9-18
37	Review the inventory in Section 5.0 of this plan annually and update it so as to maintain its accuracy.	2008	OSC, TP	9-18
38	Inventory all recreational programming provided in the Town of Hanover, including what is provided by the HYAA and update the inventory annually.	2008	PRC, PRD, HYAA	9-19
39	Utilizing the ADA Component (Appendix D) of this OSRP and Section 7.0, begin to address the needs of special user groups, including the handicapped and elderly, and provide additional facilities and programming to meet their needs.	2008	OSC, PRC, ADA, TP	9-19
40	Inventory the available parking at all town-owned conservation/recreation areas and consider adding additional parking where needed/appropriate.	2008	PRC, DPW, TP, OSC	9-19
41	Sit down together and review in detail the Parks and Recreation Committee's Master Plan.	2008	PRC, OSC	9-19
42	Make recommendations regarding how to improve available information and access to the Town of Hanover's website in terms of open space and recreation to the Town Planner and Town Administrator.	2008	PRC, OSC, CPC	9-20
43	Increase awareness and educate the public about open space, natural resources and trails in the community.	2008	OSC, TP	9-20
44	Formulate a working group within the Open Space Committee with the assistance of the Conservation Commission to create brochures and pamphlets regarding MGL Chapter 61, conservation restrictions, wetlands and invasive species. Inserts with tax mailings may work well.	2008	OSC, TP, CC, BOS	9-20

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45	Conduct an educational campaign regarding wetlands in Hanover.	2008	CC, TP	9-21
46	Increase/improve signage at open space and natural resource areas in Hanover by continuing to work with local volunteers and Scout Troops on such projects.	2008	OSC, CC, TP	9-21
47	Create a historical landscape/historical village self-guided walking tour map. See the Historic Preservation Plan, page 71 for more information.	2008	HC, TP	9-21
48	In support of the recommendation in the Historic Preservation Plan, work with the town and other boards/committees to organize an Annual Volunteer Fair/Day, maybe in coordination with Hanover Day or near Town Meeting. Volunteer activities may be varied, and might include trail maintenance, river clean-up, clean-up along scenic roads etc.	2008	BOS, TA, TP, HC, CC, CPC, OSC, PRC	9-21
49	Invite local citizens and professionals to hold seminars regarding conservation/recreational matters that they are familiar with or interested at Town Hall. Perhaps make it a monthly lecture series.	2008	TP, OSC, PRC	9-22
50	Increase awareness of Scenic Roads in Hanover regarding where they are and why they were designated. Start a multi-pronged media campaign and consider sending an informational letter to every person who lives on a designated Scenic Road in Hanover about the designation.	2008	HC, TP	9-22
<b>Year 2 - 2009</b>				
Action Items 6, 7, 8, 10, 11, 12, 13, 14, 17, 18, 19, 20, 28, 31, 32, 33, 34, 35, 37, 38, 43, 45, 46, 48 and any incomplete regulatory recommendations				
<b>Year 3 - 2010</b>				
Action Items 6, 7, 8, 12, 13, 14, 16, 17, 18, 19, 20, 28, 31, 32, 33, 34, 35, 37, 38, 43, 45, 46, 48 and any incomplete regulatory recommendations.				
<b>Year 4 &amp; 5 – 2011/2012</b>				
Note: See Section 9.0 of the report				

## 9.2 Five Year Action Plan Summary

### YEAR 1 (2008) – PLAN IMPLEMENTATION

#### **MANAGEMENT**

**GOAL 1: Assign a specific entity to oversee the implementation of the overall Open Space and Recreation Plan and determine the next steps for moving forward.**

#### **ACTION ITEMS:**

- 1) Formally designate the Town Administrator as the coordinator of the Five Year Action plan. The Open Space Committee and the Parks and Recreation Committee should work closely with the Town Administrator to implement the Open Space and Recreation Plan, with the assistance of the Town Planner.

**Responsibility:** Town Administrator, Open Space Committee, Parks and Recreation Committee, Town Planner

**When:** Immediately upon approval of Open Space and Recreation Plan update by the Division of Conservation Services (**Winter 2008**)

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 2) The Open Space Committee and Parks and Recreation Committee should meet with the Board of Selectmen and Town Administrator to discuss the Open Space and Recreation Plan and its implementation.

**Responsibility:** Board of Selectmen, Town Administrator, Open Space Committee, Parks and Recreation Committee, Town Planner

**When:** Immediately upon approval of Open Space and Recreation Plan update by the Division of Conservation Services (**Winter 2008**)

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 3) The Open Space Committee and Parks and Recreation Committee should develop a checklist of action items to accomplish that will also identify each committee's goals, their organizational responsibilities for the updated Open Space and Recreation Plan (including how they can/will work together) and regarding conservation and recreation programs and activities in the community. In addition, they should meet at least semi-annually and share progress memorandums and have joint meetings when possible.

**Responsibility:** Open Space Committee, Parks and Recreation Committee,

assistance from Town Planner

**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 4) Consider adding either a full or part-time position to the Planning Department to assist the Town Planner on local planning initiatives and help implement this plan and other projects, or offer an internship to a graduate student.

**Responsibility:** Town Administrator, Board of Selectmen, Town Planner, Community Preservation Committee

**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 5) Confirm that all commissions, committees, boards and pertinent town staff mentioned in this plan receive a copy of it and understand their role in its implementation.

**Responsibility:** Town Planner and Secretary, Open Space Committee, Parks and Recreation Committee

**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

**GOAL 2 – Devise and maintain a system for targeting and prioritizing land for future property acquisition.**

#### **ACTION ITEMS:**

- 6) Update every six months the list of key parcels of land which are of high interest for protection by acquisition or other methods (this specific list has not been included in the OSRP and can be obtained from the OSC or Town Planner). Consider transferring the care and custody to the Conservation Commission of existing open space where possible and add conservation restrictions to as many designated open space parcels as possible.

**Responsibility:** Open Space Committee, Town Planner, Planning Board, Conservation Commission

**When:** 2008, Ongoing

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 7) Modify the land acquisition worksheet (located in Section 7.0) as needed to ensure it is an appropriate evaluation tool to use when considering property for protection. In addition, develop a computer database to track parcels of interest and status (this could be something like an Excel Spreadsheet) and update it frequently to monitor key parcels of land which are of high interest for protection by acquisition or other methods.

**Responsibility:** Open Space Committee, Town Planner

**When:** 2008, Ongoing

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 8) Identify major open space areas in abutting towns and develop a working relationship with representatives in communities like Rockland, Pembroke, Norwell and Hanson to discuss future projects. Communication needs to be more consistent.

**Responsibility:** Open Space Committee, Town Planner

**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

### **COMMUNITY CHARACTER**

**GOAL 4 – Collaborate with other committees, organizations and towns regarding open space and recreation projects and initiatives.**

#### **ACTION ITEMS:**

- 9) Improve the communication and working relationships amongst the Open Space Committee, Parks and Recreation Committee and Community Preservation Committee. Hold a two to four hour working meeting (maybe a Saturday morning) with all three committees facilitated by a third party where goals and agendas of each committee would be stated and brainstorming could be done regarding how to better communicate and work together in the future.

**Responsibility:** Open Space Committee, Parks and Recreation Committee, Community Preservation Committee, Assistance from Town Planner

**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_



**GOAL 3 – Preserve and protect open space and natural areas in Hanover because they provide linkages between the history of the Town and the present conditions.**

**ACTION ITEMS:**

- 10) Work with Pembroke and Norwell to nominate an area surrounding a portion of the North River/Indian Head River as an Area of Critical Environmental Concern. Go to <http://www.mass.gov/dcr/stewardship/acec/aboutMaps.htm> for more nomination information, and see Section 4.0 for more details about the ACEC program. Hire a consultant if necessary to help with the nomination and consider using CPA funds to do so. The nomination should be made by the community.

**Responsibility:** Conservation Commission, Town Planner, Open Space Committee

**When:** 2008, Ongoing

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

**OPEN SPACE AND NATURAL RESOURCES**

**GOAL 5 – Continue to acquire additional open space.**

**ACTION ITEMS:**

- 11) Develop educational materials about alternative methods used to leave land parcels in their natural state in perpetuity or available for public access as appropriate and a Frequently Asked Questions handout that the Open Space Committee could provide to landowners interested in more information about protecting their property.

**Responsibility:** Open Space Committee, Assistance from Town Planner, Conservation Commission

**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 12) Research and apply for additional funding sources for the maintenance and upgrading of Hanover's parks, playgrounds and conservation areas (see Section 7.0 for a list of funding sources).

**Responsibility:** Town Planner, Open Space Committee, Parks and Recreation

**When:** Committee  
2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

**GOAL 6 – Encourage sustainable growth, development and redevelopment consistent with the remaining carrying capacity of Hanover’s natural environment.**

**ACTION ITEMS:**

- 13) At the design/permitting state of developments, discuss the significant natural and fragile resource areas that may pertain to a project with would be developers. Such areas include critical wildlife and plant habitats, water resources and historical, cultural and archaeological areas, scenic roads and views and significant landforms. Encourage projects to take these areas into consideration. Where it makes sense, notify the Open Space Committee and ask for input when needed.

**Responsibility:** Town Planner, Planning Board, Conservation Commission, Open Space Committee

**When:** 2008, Ongoing

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 14) Continue to identify and certify vernal pools.

**Responsibility:** Conservation Commission

**When:** 2008, Ongoing

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

**GOAL 7 – Enhance public access to and appropriate use of existing conservation lands; continue to further the greenways initiative and creation/improvement of existing and new trails and monitor permanently protected conservation lands to ensure their character remains unchanged.**

**ACTION ITEMS:**

- 15) Develop a potential list of new trails for development and trails that need maintenance/signage and present the plan to the Town with the support of the Town Planner. Use this trails plan as a guide for projects and to seek out funding sources for passive and active recreation.

**Responsibility:** Open Space Committee, Town Planner, Parks and Rec Committee  
**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 16) If possible, try to inventory natural resources present on conservation lands, and identify the appropriate level and type of public access by developing and maintaining:
- Data base of conservation lands and degree of public access,
  - Management plans to allow public access without harming environmentally sensitive areas, and
  - Rules and regulations pertaining to the use of public lands.

**Responsibility:** Town Planner, Conservation Commission, Assistance of Volunteers, Parks and Recreation Committee

**When:** 2008, Ongoing

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 17) Establish a group of volunteers responsible for creating and maintaining trails. This group should include a member of the Conservation Commission, or at a minimum, review placement of new trails in order to avoid impacts to important natural resources, including wetlands and rare species.

**Responsibility:** Town Planner, Conservation Commission, Open Space Committee, Assistance of Volunteers

**When:** Ongoing

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 18) Continue to monitor and promptly remove invasive species from conservation lands before they become a problem and impact native species.

**Responsibility:** Conservation Commission, Assistance of Volunteers

**When:** Ongoing

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

**GOAL 8 – Expand Hanover’s local efforts and work towards taking a regional approach to protecting drinking water and provide long range protection of public drinking water supplies.**

**ACTION ITEMS:**

- 19) Specifically target land surrounding the Water Resource Protection District for protection to act as a buffer to prevent contamination of the water supply.

**Responsibility:** Open Space Committee, Town Planner

**When:** Ongoing

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 20) Contact twice annually representatives in neighboring towns to discuss groundwater and surface water protection and develop a collaborative plan/line of communication for doing so.

**Responsibility:** Town Planner, Department of Public Works

**When:** Ongoing

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 21) Investigate the potential of using another substance besides sand/salt on the roadways during the winter as a way to further protect drinking water.

**Responsibility:** Conservation Commission, DPW, Board of Selectmen

**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 22) Review the existing system for addressing failing septic systems and identify ways in which it can be approved.

**Responsibility:** Board of Health, Conservation Commission

**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

## **REGULATORY**

### **GOAL 9 - Improve and enhance Open Space and Recreation land within Hanover through regulatory methods.**

#### **ACTION ITEMS:**

- 23) Establish an Open Space Development Zoning Bylaw (sometimes known as Cluster Subdivision Bylaw). The Town of Hanover currently does not have such a Bylaw.

**Responsibility:** Town Planner, Planning Board, Board of Selectmen  
**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 24) Amend subdivision regulations to maximize amount of open space maintained in proposed developments (should be done in conjunction with the Open Space Development Zoning Bylaw).

**Responsibility:** Town Planner, Planning Board, Board of Selectmen  
**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 25) As also noted in the Historic Preservation Plan, revise the Village Planned Unit Development Bylaw (Section 6.11.0) to *“enhance quality of open space resulting from development. The calculation of required open space within the current VPUD bylaw allows for inclusion of wetlands, floodplains and landscaped areas. This is unlikely to result in substantial land protection that would not otherwise have occurred due to wetlands protection regulations. In order to ensure protection of land that is not otherwise protected, the Town should amend the VPUD bylaw to exclude land that is protected by wetlands regulations from the calculation of required open space. In order to preserve the viability of the bylaw, this amendment may be accompanied by a reduction in the required percentage of open space.”*

**Responsibility:** Town Planner, Planning Board, Board of Selectmen  
**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 26) As also noted in the Historic Preservation Plan, *“revise the Retreat Lot Bylaw (Zoning Sec. 6.030) to require that frontage land remaining upon development is protected as*

*open space through permanent conservation restriction or thirty year deed restriction. Although the bylaw requires that the frontage land be left undeveloped, the legal protections for such land will be uncertain in the absence of a recorded deed restriction."*

**Responsibility:** Town Planner, Planning Board, Board of Selectmen

**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 27) Adopt a Scenic Road Bylaw to formalize the application and review process of projects along designated scenic roads.

**Responsibility:** Town Planner, Planning Board, Board of Selectmen

**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 28) Develop a proposed plan for adding sidewalks to key roadways in Hanover. These connections should be throughout town to provide walking/biking networks where trails do not or cannot be added to the "Greenway." More sidewalks in Hanover was identified as a need in the Citizen Survey conducted for this project.

**Responsibility:** Town Planner, DPW

**When:** 2008, Ongoing

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 29) Investigate the potential of further utilizing Low Impact Development techniques and/or developing a Low Impact Development Bylaw to help encourage and manage runoff, stormwater and drainage patterns. See [http://www.mass.gov/envir/smart\\_growth\\_toolkit/pages/mod-lid.html](http://www.mass.gov/envir/smart_growth_toolkit/pages/mod-lid.html) for more information.

**Responsibility:** Town Planner, Conservation Commission

**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

## **RECREATION**

### **GOAL 10 – Enhance, maintains and preserve passive and active recreational opportunities for Hanover residents and visitors of all ages, abilities and interests**

#### **ACTION ITEMS:**

- 30) Investigate potential sites for a designated recreational programming facility/community center, including specific space for the Parks and Recreation Administrator.

**Responsibility:** Parks and Recreation Committee, Town Planner, Open Space Committee

**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 31) Continue to focus on trail creation, maintenance and information outreach. Consider developing a trail management plan that utilizes the newly created trails layer and suggested maintenance/management techniques to use at the various sites.

**Responsibility:** Open Space Committee, Conservation Commission, Town Planner, Parks and Recreation Committee

**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 32) Repair and maintain existing sports fields where necessary (utilize Parks and Recreation Master Plan). A maintenance schedule should be developed.

**Responsibility:** Parks and Recreation Committee, DPW

**When:** 2008, Ongoing

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 33) Work with the Town Planner to identify where equestrian trails, walking trails, bicycle trails and water access could be added/improved in the Town of Hanover. Develop a memorandum summarizing the findings, circulate it to all relevant boards and commissions and suggest next steps.

**Responsibility:** Open Space Committee, Conservation Commission, Parks and Recreation Committee, Town Planner

**When:** 2008, Ongoing

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 34) When possible, address needs identified in the Statewide Comprehensive Outdoor Recreation Plan. The needs identified were more swimming, road biking, walking, playground and tennis facilities in Hanover. Consider including these elements when moving forward with new projects or updating existing sites.

**Responsibility:** Town Planner, Open Space Committee, Parks and Recreation Committee

**When:** 2008, Ongoing

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 35) Continue to map and mark existing walking trails and access points to the trails in Hanover. Consider preparing a more formal walking trail map, similar to that of the Town of Needham (one Open Space Committee member should investigate Needham's work and report back). Once everything is mapped, visit the map annually and update it.

**Responsibility:** Open Space Committee, Town Planner

**When:** 2008, Ongoing

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 36) Investigate in detail the potential of creating small, local parks in various areas of Town where there are currently no amenities available, particularly in the northern part of town on Town-owned land.

**Responsibility:** Parks and Recreation Committee, Town Planner

**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 37) Review the inventory in Section 5.0 of this plan annually and update it so as to maintain its accuracy.

**Responsibility:** Open Space Committee, Town Planner

**When:** 2008, Ongoing



**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 38) Inventory all recreational programming provided in the Town of Hanover, including what is provided by the HYAA and update the inventory annually.

**Responsibility:** Parks and Recreation Committee, Parks and Recreation Director, HYAA

**When:** 2008, Ongoing

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 39) Utilizing the ADA Component of this OSRP (Appendix D) and Section 7.0, begin to address the needs of special user groups, including the handicapped and elderly, and provide additional facilities and programming to meet their needs.

**Responsibility:** Open Space Committee, Parks and Recreation Committee, ADA Coordinator, Town Planner

**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 40) Inventory the available parking at all town-owned conservation/recreation areas and consider adding additional parking where needed/appropriate.

**Responsibility:** Parks and Recreation Committee, DPW, Town Planner, Open Space Committee

**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 41) Sit down together and review in detail the Parks and Recreation Committee's Master Plan.

**Responsibility:** Parks and Recreation Committee, Open Space Committee

**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

## **EDUCATION**

**GOAL 11 – Provide materials and educate Hanover residents on conservation, recreation and land use issues in the community.**

**GOAL 12 – Improve public awareness and public access regarding Hanover’s Open Space and Recreation assets.**

### **ACTION ITEMS:**

- 42) Make recommendations regarding how to improve available information and access to the Town of Hanover’s website in terms of open space and recreation to the Town Planner and Town Administrator.

**Responsibility:** Parks and Recreation Committee, Open Space Committee, Community Preservation Committee

**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 43) Increase awareness and educate the public about open space, natural resources and trails in the community. Use a multi-pronged that includes but is not limited to: frequent newspaper articles, participation in local community events such as Hanover Day, mailings, emails, prepare a map for distribution (similar to the 1999 trails map) and send informational letters home with children from school. Collaborate with other committees to keep them informed and ask for their assistance as well.

**Responsibility:** Open Space Committee, Town Planner

**When:** 2008, Ongoing

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 44) Formulate a working group within the Open Space Committee with the assistance of the Conservation Commission to create brochures and pamphlets regarding MGL Chapter 61, conservation restrictions, wetlands and invasive species. Inserts in tax mailings work well.

**Responsibility:** Open Space Committee, Town Planner, Conservation Commission, Board of Selectmen

**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 45) Conduct an educational campaign regarding wetlands in Hanover. Focus on making information available regarding what is a wetland, what can/can't be done in a wetland resource area, what the local and state regulations are and where to go for more information. Newspaper articles, mailings and information on the town website would be helpful.

**Responsibility:** Conservation Commission, Town Planner

**When:** 2008, Ongoing

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 46) Increase/improve signage at open space and natural resource areas in Hanover by continuing to work with local volunteers and Scout Troops on such projects.

**Responsibility:** Open Space Committee, Town Planner, Conservation Commission

**When:** 2008, Ongoing

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 47) Create a historical landscape/historical village self-guided walking tour map. See the Historic Preservation Plan, page 71 for more information.

**Responsibility:** Historical Commission, Town Planner

**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 48) In support of the recommendation in the Historic Preservation Plan, work with the town and other boards/committees to organize an Annual Volunteer Fair/Day, maybe in coordination with Hanover Day or near Town Meeting. Volunteer activities may be varied, and might include trail maintenance, river clean-up, clean-up along scenic roads etc.

**Responsibility:** Board of Selectmen, Town Administrator, Town Planner, Historical Commission, Conservation Commission, Community Preservation Committee, Parks and Recreation Committee, Open Space Committee

**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 49) Invite local citizens and professionals to hold seminars regarding conservation/recreational matters that they are familiar with or interested at Town Hall. Perhaps make it a monthly lecture series.

**Responsibility:** Town Planner, Open Space Committee, Parks and Recreation Committee

**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

- 50) Increase awareness of Scenic Roads in Hanover regarding where they are and why they were designated. Start a multi-pronged media campaign and consider sending an informational letter to every person who lives on a designated Scenic Road in Hanover about the designation.

**Responsibility:** Historical Commission, Town Planner

**When:** 2008

**Action Item Complete:** ☐ **Date:** \_\_\_\_\_

## **Year 2 (2009) - Plan Implementation**

In year two, implementation of this plan should be focused on continuing the following action items:

- 6, 7, 8, 10, 11, 12, 13, 14, 17, 18, 19, 20, 28, 31, 32, 33, 34, 35, 37, 38, 43, 45, 46, 48 and any incomplete regulatory recommendations.

## **Year 3 (2010) - Plan Implementation**

In year three, implementation of this plan should be focused on continuing the following action items:

- 6, 7, 8, 12, 13, 14, 16, 17, 18, 19, 20, 28, 31, 32, 33, 34, 35, 37, 38, 43, 45, 46, 48 and any incomplete regulatory recommendations.

## **Year 4 & 5 (2011-2012) - Plan Implementation**

In year three, implementation of this plan should be focused on continuing the following action items:

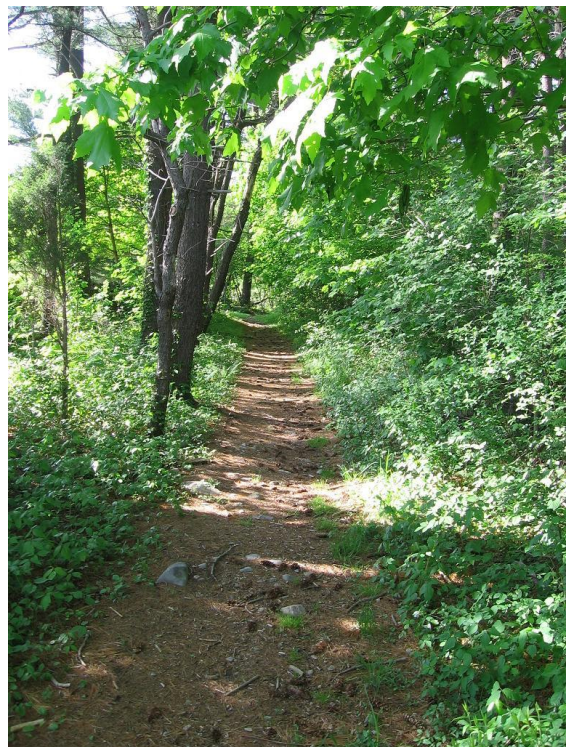
- 6, 7, 8, 12, 13, 14, 16, 17, 18, 19, 20, 28, 31, 32, 33, 34, 35, 37, 38, 43, 45, 46, 48 and any incompleting regulatory recommendations.

In addition, in Year 5 (2012), other things to think about are to:

- Review all action items for years 1 through 4 and determine what has and has not been done. Evaluate how complete each action item is and take the necessary steps to plan for how to go about specifically addressing the action item,
- Take stock of the five years in which this plan will be active and note what worked well and what did not during implementation, and make note of what to do differently,
- Work with the Town Planner to bring the process of the Open Space and Recreation Plan update before the current one expires so that ideally, the plans will overlap and there will be no gap in a valid, state approved plan.

## Section 10.0 Public Comments

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*Photo by Mary McCrann, Merry Property Trail*

## **10.0 PUBLIC COMMENTS**

## Section 11.0 References

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*Photo by Mary McCrann, the Bandstand*



## **11.0 REFERENCES**

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All references used to update Hanover's Open Space and Recreation Plan have been noted within the document as footnotes.

## **APPENDICES**

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**Appendix A** – Maps

**Appendix B** – Historical Sites Listing

**Appendix C** – Public Participation Documentation

**Appendix D** – ADA Study

**Appendix E** – Supporting Documentation

## **Appendix A Maps**

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**Figure 1:** Zoning Map

**Figure 2:** Soil Features Map

**Figure 3:** Water Resources Map

**Figure 4:** Plant and Wildlife Habitat

**Figure 5:** Scenic Resources and Unique Environments

**Figure 6:** Inventory of Open Space Map

**Figure 7:** Five-Year Action Plan Map

**Appendix B**  
**Historical Sites Listing**

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## **Appendix C**

### **Public Participation Documentation**

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- Notes from Hanover Day Event – June 16, 2007
  - Public Forum Flyer – June 19, 2007
    - Public Forum Press Release
  - Public Forum Agenda and Attendance List
    - Public Forum Presentation
- Public Forum Meeting Notes – June 19, 2007
  - Newspaper Articles Regarding Project
  - Open Space and Recreation Plan Survey
- Open Space and Recreation Plan Survey Results
- Public Forum Presentation – November 8, 2007

**Appendix D**  
**ADA Study**

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## **Appendix E**

### **Supporting Documentation**

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- Parks and Recreation Master Plan – Draft October 2007
  - Parks & Recreation and School Fields Map
  - Build-out Areas Remaining in Hanover Map
    - NHESP Documentation
    - DEP Reportable Release Sites
- The Hanover Greenway Project Plan – April 1999