

## NATURAL RESOURCES

Natural resources are an integral part of the community's health, character and aesthetics for the common good of the Town. The scope of "Natural Resources" has become much more extensive to planning than in was in 1992, the last major update to Hampstead's Master Plan. It is important to assess the areas addressed in the 1992 plan, the future goals set forth by community opinions (expressed in the 2006 MPAC survey) and in conjunction with the vision statements of this plan regarding current conservation efforts, water, ecologically sensitive areas, air quality, green spaces and undeveloped lands, best management practices and citizen education. By assessing these areas, qualitative and quantitative trends, improvements and declines can be observed to provide sustainable stewardship of the Town's natural resources.

Historically, the commodification of natural resources within Hampstead were, before incorporation, held primarily by Governor Benning Wentworth as Hampstead was an area to harvest the great Mast Pines. Citizens of Hampstead were forbidden to use these great Pines as they were destined for the masts of British ships. After incorporation, the citizens of Hampstead primarily grew crops and maintained animals for sustainability. The landscape of Hampstead did not lend itself to large agricultural operations due to poor soils and slope. Many of the ponds within Hampstead were used for the collection and harvest of ice before electric refrigerators. The ponds were later used for retreats and recreation and many camps were built along the shores, primarily after WWII. (Randall)

### **1.0 SURFACE WATER AND GROUNDWATER**

The most important natural resource in Hampstead is water. The town is fortunate to have significant supplies of both surface water and groundwater, the water resource present beneath the surface of the earth. Both resources are important to the well being of the community. Although surface water is not a primary source of potable, or drinkable, water for the Town it has held an increasingly important role as a recreational resource and elevates the quality of life for Hampstead residents. As displayed on the map titled Surface Water Resources Map, there are approximately 465 acres of surface water resource in Hampstead. 430 acres are lakes or ponds and roughly 35 acres are river or stream resources.

The largest ponds in Hampstead are:

<i>Island Pond -</i>	<i>209 acres</i>
<i>Wash Pond -</i>	<i>170 acres</i>
<i>Angle Pond -</i>	<i>31 acres</i>
<i>Haseltine Millpond -</i>	<i>9 acres</i>
<i>Hog Hill Pond -</i>	<i>7 acres</i>

As mentioned above surface water covers approximately 470 acres in Hampstead. The 1992 Master Plan states "The areas of town where the first need for public water supply arise first are those where development density and septic system failures are greatest. Presently, the areas in Town that appear to be the most susceptible are the Angle, Wash Pond and Island Pond areas." The 1992 plan also states that "Hampstead's concentrated development makes it unlikely that any of the aforementioned ponds could be used as a water supply due to nutrient and biological buildup." Currently Wash Pond suffers from fewer problems than either Angle or Island Pond as they both have invasive aquatic weed

species. Wash Pond's restricted access has kept the weeds from infesting the pond and maintained water quality. All three ponds have lake associations and monitor water quality and participate in NH Department of Environmental Services volunteer Comprehensive Lake Inventory and Weed Watch Program and Lay Lake Monitoring Program (LLMP) the concurrent effort between NH-DES and UNH Cooperative Extension. It is imperative to maintain these programs to ensure water quality. The Town should consider taking a more active role in lake protection issues. Education is one of the most common ways for town's to participate in the protection of their local surface water resources. The Town could consider distributing educational flyers to each household that stress ways for all residents to contribute to the health of their local surface waters. These include properly maintaining private septic systems, reducing the use of chemical fertilizers near shorelands and educating people to the fact that you don't need to be directly on the shoreland to pollute the resource.

Three of the ponds in town are large enough to fall within the protective umbrella of the State of New Hampshire's Comprehensive Shoreland Protection Act (CSPA). The CSPA codified as RSA 483-B mandates several protective measures for all great ponds in the State. The definition of a great pond is a natural, fresh, waterbody that is ten acres or greater in size. Following this definition there are three ponds in Hampstead that qualify for the protective measures found in the state law. These are Angle, Island and Wash ponds. As shown on the map, "Comprehensive Shoreland Protection Act Map, NH RSA 483-B" each pond is shown along with representations of the protective buffer areas spelled out in the law. As found in the law, the protective buffers are as follows:

***Primary Building Setback and Waterfront Buffer*** - Primary structures shall be set back behind the primary building line (reference line) which is 50 feet from natural mean high water level as established by the New Hampshire Department of Environmental Services for each waterbody. This first 50 feet of distance from the edge of the water body shall also constitute the 'waterfront buffer'. The purpose of this buffer shall be to protect the quality of public waters while allowing homeowner discretion with regard to water access, safety, viewscape maintenance, and lot design. In Hampstead there are approximately 486 acres of land within this buffer area to the three protected ponds.

***150 Feet of Natural Woodland Buffer*** - A natural woodland buffer shall be maintained within 150 feet of the reference line. The purpose of the natural woodland buffer shall be to protect the quality of public waters by minimizing erosion, preventing siltation and turbidity, stabilizing soils, preventing excess nutrient and chemical pollution, maintaining natural water temperatures, maintaining a healthy tree canopy and understory, preserving fish and wildlife habitat, and respecting the overall natural condition of the protected shoreland. In Hampstead there are approximately 605 acres of land within this buffer area to the three protected ponds.

***250 Foot Protected Shoreland*** - means, for natural, fresh water bodies all land located within 250 feet of the reference line of public waters. In Hampstead there are approximately 725 acres of lands within this protected area to the three ponds.

Although the CSPA can also be applied to rivers, there are no rivers of adequate size (fourth order or higher) in Hampstead to qualify for **State** protection.

## **2.0 FLOOD HAZARD AREAS**

The abundance of surface water in Hampstead results in the presence of flood prone areas subject to inundation as the result of storm events. Floodplains are depositional landforms produced by streams and rivers as a result of accumulation of sediment deposited by the river during flood periods. Flooding is a natural process of the riverine system and adjacent surface water network. Periodic flooding helps to fertilize soils, and helps to maintain their productivity and that of the river corridor. Floodplains are located along sensitive shoreline areas that provide habitat for a wide variety of animals and plants. In general, floodplains surround major water courses and are subject to seasonal flooding. During periods of flooding, enormous quantities of water are stored temporarily within floodplain soils, and within tributary wetlands. By storing and slowing floodwaters, the floodplain acts to reduce damage from floodwater likely to occur downstream. During such periods, groundwater reservoirs are also recharged by excess surface water. As the flood levels decline, the water stored is slowly released back into the stream or river. Natural vegetation and wetland soils slow the water flow during the flood and help prevent soil erosion. In this manner, wetlands and floodplains naturally moderate the extremes of flooding. A floodplain in its natural state is the most cost-effective method to reduce flood damage. Values traditionally associated with floodplains and river corridors include (1) riverbank stabilization/water quality, (2) recreation, (3) aesthetics, and (4) unique natural features.

The Federal Emergency Management Agency (FEMA) has designated flood hazard boundaries within Hampstead. Flooding from rivers and ponds is a primary consideration in assessing the development potential of land. In 1975, the U.S. Department of Housing and Urban Development/Federal Insurance Administration mapped the flood hazard areas in Hampstead for use in the flood insurance program. This flood zone was designated for the 100-year storm based on topography and previous flooding history. A 100-year flood refers to a one-percent chance of flooding each and every year. The 100-year flood is the standard by which floodplains are delineated, and this is the assumed worst extent of flooding that can reasonably be expected.

The Town is a participant in the National Flood Insurance Program (NFIP), thereby entitling residents to qualify for federally subsidized flood insurance for all properties located within federally designated flood zones. The boundaries of these special flood hazard areas are called out on the map entitled, "Surface Water Resources Map" For the Town of Hampstead there are two different zones of special flood hazard. If a property is located within these zones the property owner is required to purchase flood hazard insurance.

As defined by the NFIP and delineated most recently on Federal Emergency Management Agency maps dated 2005, the zones are as follows:

**Zone A** – Area inundated by 1% annual chance flooding, for which no base flood elevations (BFE's) have been determined.

**Zone AE** - Area inundated by 1% annual chance flooding, for which base flood elevations (BFE's) have been determined.

**Zone X500** – area inundated by a .02 annual chance flooding; an area inundated by 1% chance flooding with average depth of less than 1 foot or with drainage areas of less than 1 square mile; or an area protected by levees from 1% annual chance flooding.

For the Town of Hampstead there are significant areas of special flood hazard. As displayed on the Surface Water resources map there are areas of land in both Zone A and Zone AE. There are 539 acres in Zone A where there are no base flood elevations determined for the zone. In Zone AE there are 595 acres of land in Town. These areas are predominantly found in close proximity to both Island and Wash Pond and around a wetland complex found in the northwest section of Town. Landowners of these combined 1134 acres of land must purchase flood hazard insurance and are somewhat constrained in the building practices that may occur on their property. The upside of these designations are the guarantee that flood hazard areas remain eligible for below market rate insurance premiums and reimbursement for damages in the event of flooding.

### **3.0 STRATIFIED DRIFT AQUIFERS**

The Town's groundwater resources are an important component of the Town's natural resources diversity. As a result of the inability of the Town to utilize surface water resources from the provision of drinking water groundwater resources fulfill this role. This is common throughout southeastern NH. Fortunately the region is blessed with significant groundwater supplies.

**Aquifers** are defined as “a geologic formation, group of formations, or part of a formation, that contains sufficient saturated permeable materials to yield significant quantities of water to wells and springs”.

**Groundwater** refers to the “water beneath the water table in soils or geologic formations that are fully saturated”.

**Transmissivity** is a measure of the ability of an aquifer to transmit a fluid, calculated by multiplying the horizontal hydraulic conductivity by the saturated thickness (Heath, 1983). The transmissivity distribution in an aquifer reflects the combined effects of variations in both of these factors. An aquifer composed of well-sorted, coarse-grained material will have a much higher transmissivity than one with the same saturated thickness but composed of fine-grained material.

### **4.0 DESCRIPTION OF THE USGS STUDY**

Southeastern New Hampshire's rapid population increase in the past few decades along with water quality concerns and the need to develop new public water supplies prompted the need for additional groundwater data. The US Geological Survey (USGS), in cooperation with the New Hampshire Department of Environmental Services (DES), Water Resources Division, initiated a 10-year program in 1983 to provide detailed maps of stratified-drift aquifers statewide. To do this, the state was divided into 14 regions based upon the drainage divides of the major watersheds. A drainage divide is a geographic area, based upon existing topography that details the direction of water flow within the region.

For the purposes of the USGS study for the southeastern quadrant of New Hampshire, geohydrologic data for Hampstead is detailed in the USGS Report 91-4025 includes data for the Lower Merrimack and Coastal River Basins (Stekl and Flanagan, 1992). This area includes the stratified-drift aquifer of the lower Merrimack River basin. Hereinafter, Stekl and Flanagan's report will be referred to as the Merrimack report. The study area for the southeastern quadrant covered 351 miles, of which approximately 56 miles are underlain by stratified-drift aquifers.

The report includes a legend illustrating transmissivity of the stratified-drift aquifers, signified by intensifying shades of blue. Delineations of the aquifer boundaries are mapped at a scale of 1:24,000. Data for the delineation of Hampstead's stratified-drift aquifers (sand and gravel geologic formations) boundaries and the extent of the silts and clays for the Merrimack study were based on published and unpublished surficial-geology maps provided by the Cooperative Geologic Mapping Program (COGEOMAP), in particular, a 1983 surficial geologic map produced by the COGEOMAP. This cooperative mapping venture included participation from the Geologic Division of the USGS, the NH Department of Environmental Services and Office of the State Geologist. Lithological data was collected from auger holes. Data was also available from previous reconnaissance maps for the lower Merrimack River basin (Cotton, 1977). Subsurface data were obtained from published and unpublished sources of the USGS, New Hampshire DES, New Hampshire Department of Transportation, well-drilling contractors, towns and local town residents.

Stratified-drift aquifers have been mapped to show aquifer boundaries, water-table altitudes, general directions of ground-water flow, saturated thickness, and aquifer transmissivity, on a scale of 1:2000. The study also provides a description of the general geohydrology of till and bedrock as well as the water use and water-yielding characteristics of the bedrock aquifer. Statewide data is also provided for groundwater quality in the stratified-drift aquifers. This detailed geohydrologic information provided in the report is useful to regional and local planners in making maximum use of existing groundwater resources and for locating and developing new resources.

These aquifers delineated by the stratified drift aquifer maps prepared by the United States Geologic Survey in 1992 are displayed on the map entitled, "Stratified Drift Aquifer Map, Hampstead. The aquifers are color coded on this map according to their transmissivity. This feature of the aquifer explains the waters ability to travel within the underlying geologic material. The higher the transmissivity rating, the greater the ability for the groundwater to move. This feature helps characterize an aquifer's ability to be pumped as well as its ability to recharge itself. For the mapping that was done for the Town of Hampstead the transmissivity ratings are as follows:

- less than 1000 feet squared per day
- 1000 to 2000 feet squared per day
- Greater than 2000 feet squared per day

These categories are represented in several areas in Hampstead. The most prevalent transmissivity ranking is the second (1000 to 2000 feet squared per day) with more than 960 acres containing this level of aquifer. Another 512 acres of land are characterized by an aquifer with transmissivity features of less than 1000 feet squared per day. The highest transmissivity ( greater than 2000 feet squared per day) is found on a small area in Town of only 14 acres. This area is located just to the northeast of Wash Pond.

These groundwater resources are extensive and cover approximately 20% of the area of Town. The higher categories of transmissivity are often indicative of groundwater sources capable of supporting municipally controlled water supplies, but such supplies are not currently a priority for Hampstead. However, protection of these resources should be a goal for the Town. The high transmissivity ratings indicate another characteristic of importance for groundwater. The potential for contamination of the groundwater is greater with higher transmissivity rates. Not only do these ratings indicate an ability for groundwater to move beneath the surface but they also reveal that contaminants can flow easier within the groundwater of aquifers with higher transmissivities. In the presence of these groundwater resources the Town should take steps to insure that surface activities that could potentially result in pollution to the groundwater be located away from these delineated areas.

The aquifers provide drinking water for both private and “community” wells throughout town. According to NHDES records the following table displays the public water systems found in Town as of June 2010.

System Type	System Name	Population Served	Service Connections	Street 1
TRANSIENT	111 VILLAGE SQUARE RESTAURANT	150	1	RTE 111
NON-TRANSIENT	AGES AND STAGES HAMPSTEAD	99	1	499 MAIN ST
NON-TRANSIENT	ALL OUR CHILDRENS HOUSE	49	1	PO BOX 463
COMMUNITY	BRICKETTS MILL	68	30	54 SAWYER AVE
TRANSIENT	CAMP TEL NOAR /CABIN 15	375	20	30 MAIN ST 2ND FL
COMMUNITY	COACH RUN CONDOMINIUMS	60	24	1 LARSON DR
NON-TRANSIENT	CONSOLIDATED CONTAINER CO LLC	40	1	184 RTE 111
COMMUNITY	GLENWOOD NORTH	50	20	PO BOX 249
TRANSIENT	GRANITE ROSE FUNCTION HALL	350	1	22 GARLAND DR
NON-TRANSIENT	HAMPSTEAD ACADEMY	311	3	PO BOX 1208
COMMUNITY	HAMPSTEAD AREA WATER CO	2655	1120	54 SAWYER AVE
TRANSIENT	HAMPSTEAD COMMONS	150	6	201 RTE 111 STE 11
NON-TRANSIENT	HAMPSTEAD HOSPITAL	247	1	218 EAST RD
NON-TRANSIENT	HAMPSTEAD MIDDLE SCHOOL	592	1	30 GREENOUGH RD
NON-TRANSIENT	HAMPSTEAD SHOPPERS VILLAGE	75	3	731 N RIVER RD

System Type	System Name	Population Served	Service Connections	Street 1
TRANSIENT	HOWIE GLYNN /SONS CONV STORE	50	1	PO BOX 94
TRANSIENT	LITTLE MEXICO RESTAURANT	100	3	PO BOX 115
NON-TRANSIENT	RAM PRINTING	61	1	PO BOX 900
TRANSIENT	SANBORN SHORE ACRES	370	148	MAIN ST
NON-TRANSIENT	STAGE ROAD JUNCTION	30	4	20 MARY CLARK DR UT 5
TRANSIENT	SUNSET PARK CAMPGROUND	125	52	106 EMERSON AVE
TRANSIENT	THE PHAN ZONE	400	1	PO BOX 3247
NON-TRANSIENT	THE PRESCHOOL LEARNING CENTER	51	1	20 STONY RIDGE RD
NON-TRANSIENT	THUNDERLINE Z	39	1	MANAGING DIRECTOR
NON-TRANSIENT	VILLAGE SQUARE	45	17	472 RTE 111 UT C1
NON-TRANSIENT	VILLAGE SQUARE NORTH	80	2	472 RTE 111 UT C1

These public water systems are categorized as either “Community Systems”, “Transient Systems” or “Non-transient Systems”. Commercial establishments are classified as either transient or non-transient based upon the behavior of their clients. Fluctuating volumes of clients such as a restaurant or a campground are classified as transient. Uses with a fairly stable water use such as a preschool or an office facility are classified as Non-transient. A water system which supplies drinking water to 25 or more of the same people year-round in their residences is classified as a community supply. In Hampstead, there are 2,833 residents on community water systems. (NHDES, 2009) It is important that these small public water supplies continue to have high quality groundwater resources into the future.

There are a number of known threats to groundwater resources in Hampstead. This information is derived from NHDES and is current to March of 2009. As detailed on the map entitled “Groundwater Hazards” there are several categories of threat in Hampstead. The Following tables provide NHDES records for the different hazard threats depicted.

#### Hazardous Waste Generators

The below businesses are required to register with NHDES because they generate hazardous wastes in volumes large enough to require ‘cradle to grave’ documentation. This documentation ensures that the materials are handled and disposed of in a way that minimizes the potential for groundwater contamination.

Company Name	Address
DEPENDABLE CONSTRUCTION CO INC	40 FREEDOM HILL, HAMPSTEAD
RAM PRINTING INC	EAST COMMERCIAL PK DR, HAMPSTEAD
DUSTON OIL	478 MAIN ST, HAMPSTEAD
JENNESS CAR CARE	15 COLONIAL DR, HAMPSTEAD
C & G CONSTRUCTION	232 MAIN ST, EAST HAMPSTEAD
EAST COAST LUMBER	RTE 111 PO BOX 530, EAST HAMPSTEAD
ORGANOMETALLICS INC	RT 111, EAST HAMPSTEAD
LUBE KING	544 RTE 111, HAMPSTEAD
HI RIDGE MFG CORP	RT 111, HAMPSTEAD
ACE MACHINE CO INC	9 GIGANTE DR, HAMPSTEAD
ROCKINGHAM BOAT REPAIR	GIGANTE DR INDUSTRIAL CTR, HAMPSTEAD
NICK AUTO BODY	24 HAZEL DR, HAMPSTEAD
UP-RITE CRANE SERVICE	14 HAZEL DR, , HAMPSTEAD
ENVIRONMENTAL RESOTRATIONS INC	16 HAZEL DR, HAMPSTEAD
ALL GERMAN AUTO REPAIR INC	544 RTE 111, HAMPSTEAD
THUNDERLINE Z	11 HAZEL DR, HAMPSTEAD
SEASONAL EQUIPMENT INC	11 HAZEL DR, HAMPSTEAD
HAMILTON SPORT CYCLES INC	11 HAZEL DR UNIT 3, HAMPSTEAD
STEEP HILL CO	19 HAZEL DR UNIT 2, HAMPSTEAD
HAMPSTEAD GARAGE	41 STAGE RD, HAMPSTEAD
GEX INC	10 BRICKETT'S MILL RD, HAMPSTEAD
PHILLIPS WM AUTOMOTIVE	269 STAGE RD, HAMPSTEAD
LAND & SEA INC	RTE 111, HAMPSTEAD
LAUZUN CORP	17 GIGANTE DR, HAMPSTEAD
PRO FINISHING	GIGANTE DR, EAST HAMPSTEAD
ROCKINGHAM BOAT REPAIR	GIGANTE DR INDUSTRIAL CTR, HAMPSTEAD
ALLIANT SPECIALTY METAL	134B RTE 111, HAMPSTEAD
JOHNSON & JOHNSTON ASSOC INC	130 RT 111, HAMPSTEAD
HAMPSTEAD MACHINE	7 GIGANTE DR, HAMPSTEAD
AUTO ELECTRIC SERVICE INC	GIGANTE DR, HAMPSTEAD
ACE MACHINE CO INC	9 GIGANTE DR, HAMPSTEAD
EDGEFIELD VETERINARY HOSPITAL	269A STAGE RD, HAMPSTEAD
C F T CORPORATION	1 GIGANTE DR, HAMPSTEAD



## Underground Storage Tank Sites

Site Name	Address
DUSTON OIL CO INC	478 MAIN ST
EAST COAST LUMBER&BLDG SUPPLY	RTE 111 BOX 530
DONS MARKET INC	219 MAIN ST
GLENDON N. EMERSON	211 EMERSON AVENUE
SANBORN SHORE'S ACRES INC.	MAIN STREET
HAMPSTEAD MIDDLE SCHOOL	26 SCHOOL ST
111 QUICK STOP LLC	4 HAZEL DR
HAMPSTEAD HOSPITAL	EAST RD
CENTRAL SCHOOL	21 EMERSON AVE
STAGE ROAD JUNCTION	213 STAGE ROAD
CONTECH PLASTICS	ROUTE 111
HAMPSTEAD PHARMACY	MAIN ST
HAMPSTEAD GAS & VARIETY	ROUTE 121

The sites above are those businesses that have registered underground storage tanks with the NHDES.

There are only two sites in Town that are determined by the NHDES to be groundwater hazard areas currently. These two sites are former landfill sites and are detailed below.

Site	Address
HAMPSTEAD DUMP (PARTS ABANDONED)	KENT FARM ROAD
ASHFORD INACTIVE LANDFILL	OFF FREEDOM HILL ROAD

## **5.0 WETLAND RESOURCES**

Development in Hampstead is perhaps most directly impacted by wetland resources. Wetlands play a vital role in the environmental health of the Town. Wetlands are defined as “poorly and very poorly drained soils” in accordance with the National Cooperative Soil Survey conducted by the USDA Natural Resource Conservation Service, formerly the Soil Conservation Service. Wetlands also include marshes, ponds, bogs, swamps, and lakes. In Hampstead, wetlands are freshwater systems. Generally, wetlands are transitional zones between surface water and upland sites and are commonly the sites of very productive ecosystems. While wetlands provide a variety of ecological functions and benefits, they also pose significant development constraints. Wetlands restrict building development due to high water tables, poor drainage, slow percolation rates for septic systems, unstable conditions for foundations, and susceptibility to flooding.

Historically, wetlands were considered wastelands of little value to society and were often subject to waste dumping, filling and draining with little thought given to the consequences. More recently, scientific study has lead to a greater understanding of the importance of wetlands for maintaining and improving environmental quality. Wetland complexes provide critical ecologically and socially valuable functions, including:

- Flood control, serving as flood water storage areas
- Water quality, absorbing and filtering pollutants and sediments
- Water supply, helping to maintain groundwater and surface water levels
- Providing habitat areas for plants, fish and wildlife
- Providing unique opportunities for recreation and education
- Aesthetics, contributing to scenic value

Hampstead has a large number of significant wetland areas, constituting approximately one-fifth of the Town's total land area according to calculation derived from the GRANIT system of land classification. Recognizing the increasing development pressure on the Town's wetlands, in **1987** the Planning Board proposed and the Town adopted a Wetlands Protection Ordinance designed to protect significant wetlands from inappropriate or harmful development. In addition, the Town utilizes soil type lot sizing to determine the development density allowed for creating new lots. In this way the town can be assured that all newly created lots are large enough to support the necessary on-site utilities such as potable water and adequate sewage facilities.

There are a number of different ways to illustrate wetland areas in Hampstead. The map "Surface Water Resources Map, Hampstead" uses two methods, the National Wetlands Inventory (NWI) and the Rockingham County Soils Survey.

The National Wetlands Inventory uses satellite imagery to delineate wetlands areas. The classifications for these wetland types and their associated acreages in Hampstead are listed here:

Lacustrine –	411 acres
Palustrine (emergent) -	202 acres
Palustrine (forested) -	682 acres
Palustrine (scrub-shrub) -	117 acres
Palustrine (unconsolidated bottom) –	50 acres

The second method for delineating wetland areas relies upon on-site investigations undertaken by the US Soil Conservation Service (now the Natural Resources Conservation Service, NRCS). These investigations were last published for the Town of Hampstead in 1999. The categories for these wetlands are hydric soils and are either Hydric A or Hydric B. In Hampstead there are 860 acres of Hydric A soils which are for the most part very poorly drained and there are 886 acres of Hydric B soils that are poorly and somewhat poorly drained soils.

As can be seen from these two methodologies the wetland resource in two is both significant and not easily defined. The NWI method delineates 1464 acres of wetlands in Hampstead and the Rockingham County Soils Survey delineates 1746 acres. What is clear is that in either case approximately 20% of the overall acreage in Hampstead is characterized by wetlands and is therefore constrained for development purposes.

The Natural Resources Conservation Service (when called the SCS) developed an interesting planning tool for communities using the information from their soils surveys for each Town. In 1987 they released their Soils Potential Ratings for Development which is detailed on a map of the same name below.

*“According to the report “the soil ratings for development indicate the relative quality of a soil for development when compared to other soils in the same county survey. Suitability of a soil as it pertains to septic tank absorption fields, dwellings with basements, and local streets and roads were used as the basis for determining the potential of a soil for development. A composite rating was given to each soil type combining the rating of each of the three uses stated above.”*

As shown on the map the categories of each rating are indicated below with their acreages in Hampstead.

Very High	811 acres
High	1838 acres
Medium	1640 acres
Low	1707 acres
Very low	2480 acres
There was no ranking given to 536 acres of land in Town	

As discussed earlier the areas with the greatest development constraints according to soils are located in or near wetland soils and surface waters. The soils best suited to development are found in the eastern third of the Town.

## **6.0 CONSERVATION LANDS**

The Town of Hampstead, primarily through its municipal conservation commission has worked towards the preservation of open space in Town. The Map entitled, “Conservation Map” shows the location of land protected from development. According to this map 2444 acres of land have been protected either through outright purchase of the property or through the acquisition of conservation easements which in most cases completely prevent future development of the parcel. Protection of open space is one of the most effective ways that a community located in a high growth area (like southeastern NH) can retain its rural character.

As shown on this map, the conservation lands in Hampstead can to a great degree be shown to be actively protecting high value natural resources. The single greatest concentration of protected land is found around Island Pond. Nearly half of the permanently protected lands are found in this area. High concentrations of protected lands are also evident in the large wetland systems found in the northwest part of Town as well as in the southern section of town along the Atkinson border. Finally, substantive efforts have resulted in protection of nearly the entire length of Kelly Brook to the Plaistow municipal boundary.

## **7.0 LAND PROTECTION STRATEGIES**

The information included in this Natural Resources Chapter thus far has provided information regarding the various natural resources in Hampstead and their importance. This section will provide a cursory review of open space protection techniques that are available to both the public and private sector entities. For purposes of this review, the methods for protection have been broken down into four categories: voluntary land protection techniques; public and quasi-public programs; land use

regulations and zoning; and local conservation efforts and open space planning. It is important to include a description of these tools in the community master plan because many federal and state conservation programs view such a discussion as necessary if they are to support applications for project funding.

## **7.1 VOLUNTARY LAND PROTECTION TECHNIQUES**

Under this category, there are a number of methods available that can permanently protect privately held open space and conservation areas. They all involve the protection of land through the direct acquisition and control of the land, or some portion of the land. There are many different protection tools, and several outstanding publications that describe the methods in greater detail. References for these publications are made where appropriate. Voluntary land protection techniques may involve tax implications, discussed very briefly in this section. For more detailed information on potential tax benefits, a professional tax advisor should be consulted. The voluntary land protection techniques that are described here include: fee simple purchase, purchase and leaseback, purchase and resale or lease, purchase of development rights and conservation easements, donation of land, bargain sale, transfer of development rights, and options and right of first refusal. The Town of Hampstead has been very successful in utilizing a number of these methods to protect valuable parcels of land from development.

### **7.1.A FEE SIMPLE PURCHASE; PURCHASE WITH LEASEBACK OR RESALE**

Most lands are held in fee simple, that is, the holder of the title possesses all rights associated with the property. The most common method of protecting open space areas has traditionally been through the direct purchase of property. An important consideration is that open space lands protected using fee simple acquisition are often purchased at or close to fair market value based upon development potential. Purchasing open space lands at full market value can be prohibitively expensive, and can seriously limit the amount of land that can be protected.

Land purchased for conservation purposes will generate no property taxes, however, it will not demand much in the way of public services. There are at least two options that can be used to help recover the costs associated with a fee simple purchase: purchase and leaseback, and purchase and resale with covenants. The first option, purchase and leaseback, allows the purchaser (community or conservation organization) to lease the land back for a particular use compatible with open space preservation (such as farming or forestry), thus recouping a portion of the land's purchase price. Lease agreements should be written in a manner that will protect the interest of the community while being sensitive to the landowner's needs. Another option, purchase and resale with covenants, allows the land to be resold with a deed committing the buyer to maintain the parcel as open space. As above, the new landowner could use the property for uses that are compatible with open space preservation. The latter option is sometimes used to protect a portion of the land (i.e., the most environmentally sensitive) while allowing limited development on the remaining portion.

### **7.1.B CONSERVATION EASEMENTS AND PURCHASE OF DEVELOPMENT RIGHTS**

These methods operate on the assumption that the right to develop a parcel is separable from the ownership of the land. They provide practical options for private landowners who wish to protect their land while retaining ownership.

Conservation easements provide permanent protection from uses of land that could damage or destroy its scenic, ecological, and natural resource values. Conservation easements are available for property with significant conservation values including forests, wetlands, farms, ranches, endangered species habitat, beaches, scenic areas, historic areas, and more. Generally, easements are donated (but they may be sold) to qualified non-profit conservation organizations or public agencies which ensures that the conditions of the easement are met over time. To be effective in land protection, the terms of the easement must run with the land and apply to all future owners. Easements may be tailored to fit the natural characteristics of the land, the personal needs of the owners, and the objectives of the organization or agency. Whether purchased or received as a donation, an easement can be a much less expensive method of permanent protection than fee-simple purchase for two reasons: First, the outright cost of acquisition will be less since not all of the land rights are being acquired. Second, the ongoing cost of ownership including maintenance, liability, and property taxes continue to be borne by the owner.

Development rights may also be referred to as scenic, conservation, or development easements. Easements which allow the holder to use the land for conservation or recreational purposes are called “affirmative” easements. Easements that prevent the landowner from doing something with the land (such as develop it) are termed “negative” easements.

The sale of a conservation easement is sometimes referred to as the purchase of development rights. Purchasing development rights allows the landowner to receive monetary compensation for the land’s development value without having to convert the land to other uses. Once the development rights are sold, the owner still retains the other rights associated with property ownership. The owner is still responsible for property taxes, which should be assessed only on the non-development potential of the land. Thus, in a sense, the landowner is paid for not developing the land. There are several new tax incentives that make conservation easements more attractive, particularly with the passage of the Taxpayer Relief Act of 1997. Some of the additional tax benefits include an increase in Estate Tax exclusions, a reduction in Capital Gains tax rates, and several other options available for estate tax planning.

There are at least four methods by which communities and qualified conservation groups can acquire development rights: direct purchase of development rights, purchase and resale with restrictions, purchase and lease with restrictions, and donation of development rights and/or easements. By donating development rights, the landowner can receive a reduction in local property tax, federal income tax, capital gains tax, and estate tax. With all of these methods, the restrictions on development run with the land, and are written into the deed that are binding on future landowners.

### **7.1.C TRANSFER OF DEVELOPMENT RIGHTS (TDR)**

This technique is an extension to the purchase of development rights concept. It relies on the separation of development rights from other land ownership rights and adds to that the shifting of those rights from one location or zoning district to another. A TDR program can protect critical resource areas by shifting development potential from one part of town to another. This technique is comparatively complex and has not been widely used in New England. Under the right circumstances, and with adequate administrative expertise, TDR can protect important conservation land at a very low cost to the community.

### **7.1.D DONATION OF LAND**

In terms of program expense, the outright donation of open space lands is the preferable option. The benefits to the landowner are reductions in a variety of federal, state, and local taxes. There are at least five methods of donation: fee simple, less than fee simple, donation with a reserved life estate, donation of an undivided interest in the land (remainder interest), and donation by bequest.

### **7.1.E BARGAIN SALE**

This is the sale of property for less than its full market value. It can be considered a combination land sale and charitable contribution. One motivation for the landowner is the income tax benefit from the charitable donation. The amount deductible for income tax purposes is the difference between the land's fair market value and the actual sale price. Other benefits to landowners include cash from the sale, a capital gains tax reduction, the avoidance of brokerage fees, and a higher tax bracket which could otherwise result from a full value sale of the land. Any transfer of property, either in fee simple, development rights, or a conservation easement, may be the subject of a bargain sale. There are potential income and estate tax benefits of a bargain sale as well.

### **7.1.F OPTIONS TO PURCHASE AND RIGHTS OF FIRST REFUSAL**

If a community cannot afford to purchase a site immediately, an option to purchase or rights of first refusal may allow a community some time to raise the necessary funds. An option establishes a price at which the community could purchase the land during a specified period of time. In essence, it reserves the land for purchase at a specified price. A right of first refusal is less specific; it simply guarantees the community the opportunity to purchase a site for a price equal to a bona fide offer from another interested party. If a Conservation Commission targets a piece of property and the owner is not presently interested in selling, the Commission may consider seeking a right of first refusal. With a right of first refusal, if the parcel is put on the market, the Commission will have the right to purchase it before it is sold to another party.

## **7.2 PUBLIC AND QUASI-PUBLIC PROGRAMS**

There are a number of open space protection programs offered by various State and regional agencies, as well as several programs offered by quasi-public groups such as the Audubon Society, the Society for the Protection of New Hampshire Forests, the Nature Conservancy, and local or regional land trusts. Many of these quasi-public organizations work hand-in-hand with the State and local

communities, while others work independently. The Hampstead Conservation Commission plays a critical role in the conservation and preservation of open space in the community by implementing proactive land protection strategies. The Conservation Commission should be viewed as a resource for more detailed information regarding local conservation efforts and land protection strategies.

One of the more distressing realities of owning large parcels of open land in New Hampshire is the exceptionally high property tax rates. An important method of reducing this burden has been through the state-sponsored Current Use Assessment Program. This program typically reduced the property taxes assessed on undeveloped land by more than two-thirds and is vital to the preservation of open space in the region.

As stated in the Vision section, natural resources are an integral component in the sustainable prosperity of the Town. The following priorities will address the vision goals and the MPAC Survey Priorities regarding natural resources.

NR- 1 Develop a cohesive natural resource picture and plan using GIS co-current mapping which will show conservation lands, open spaces and exemplary communities, overlapping, to base future growth on natural resource priorities.

NR-2 Use gathered data to develop a water resource management and protection plan to include watershed protection, groundwater protection and conservation.

NR-3 Work with neighboring communities, state and regional organizations as well as volunteer organizations in to address natural resource issues such as groundwater protection, wildlife corridors and invasive species. Many of these organizations provide an educational and volunteer component.

NR-4 In order to protect the variety of natural resources to the residents of Hampstead, the standards and procedures contained in the Town's existing ordinances and regulations should be audited, and where appropriate improved to further the goal of natural resource protection.

NR-5 The Town of Hampstead should endeavor to identify, protect and enhance key natural resources in the community that define the town's natural character especially trails, lakes and ponds, woodlands, fields and farmland.

NR-6 Make proactive open space, cluster, and protection a priority for town boards and departments.

NR-7 Establish a multifaceted approach to open space planning that takes into consideration other adjacent tracks adjoining and within Hampstead to prevent conflicting uses between surrounding towns.

NR-8 The Town, through its various land use boards, should endeavor to increase education and use of Best Management Practices for all residents. Including increased participation in recycling programs and hazardous waste disposal, septic, water and landscape practices.

NR-9 The Town has appropriated funds in the past for purchase of property so that it remains farmland, trails or open space. The Town should consider undertaking the preparation of a Town-wide open space plan that could help local conservation efforts to determine appropriate future municipal purchase of conservation lands.

NR-10 The Town should maintain and plan improvements to the Wash Pond Dam with the goal of protecting and improving water quality.