



MASTER PLAN STEERING COMMITTEE
Tuesday, November 15, 2016 5:15 PM
Visitor Center, 14 North Street

AGENDA

- I. Call to Order**
- II. Roll Call**
- III. Minutes**
 - a. October 18, 2016
- IV. Business**
 - a. Draft Natural Resource Chapter
 - b. Draft Parks & Recreation Chapter
- V. Correspondence**
- VI. Other**
- VII. Adjournment**



Master Plan Steering Committee
Tuesday, October 18, 2016 at 5:15 p.m.
The Visitor Center, 14 North Street

MINUTES

I. Call to Order

Mr. Feleen called the meeting to order at 5:15PM.

Present: Melissa Richmond, Debora Matteau, Andy Lafreniere, Jim Feleen, Marilyn Harris, Abigail Carman, Nick Koloski, Bill Carpenter, Eileen Skowronski, David Putnam (arrived at 6:30 PM)

Absent: Richard Wahrlich

Staff: Nancy Merrill, Director, Planning and Development Department; deForest Bearse, Resource Coordinator

Motion: To accept the agenda as presented.

Made by: Mr. Carpenter **Second:** Mr. Koloski

Vote: Unanimous in favor

II. Minutes

a. September 20, 2016

Motion: To accept the minutes of September 20, 2016 as written.

Made by: Ms. Harris **Second:** Mr. Feleen

Vote: Mr. Koloski, Mr. Carpenter and Ms. Skowronski abstained; all others voted in favor

Mr. Folta asked the committee to add a desire for population growth to the vision statement. The committee discussed the idea and agreed that some mention of it should be included. Ms. Merrill said she would work on a statement and send it to the committee.

III. Business

a. Draft Energy Chapter

Note: Ms. Carman, Mr. Carpenter and Ms. Harris serve on the Energy Chapter Subcommittee.

Mr. Lafreniere objected to the use of the words "climate change" on the grounds that some readers may object to the term so strenuously that they will abandon the Plan altogether. He felt it would cause unnecessary backlash. Climate change was not addressed at the public forum or in the survey.

There was objection to the first statement of the third bullet on page 4 on the grounds that the statement was inflammatory and lacked corroboration. The use of the words “global warming” was also found objectionable. Ms. Merrill said that the words “climate change” are used throughout the Regional Plan. She had no objection to the term being used in the plan.

The consensus of the committee was that the chapter is consistent with the vision statement

The committee recommended removing the statement about relocating the transfer station to a more centralized location on page 7.

The committee recommended:

- adding definitions of “Dark Sky” and “C-Pace”;
- expanding more about them in the text;
- provide linkage to the goals and objectives.

Everyone agreed that the energy subcommittee had done a great job.

Motion: To refer the draft energy chapter back to the energy chapter subcommittee to address the recommendations discussed here:

- Define “C-Pace”, “Dark Sky”, and “Tree City”;
- Reconsider the recommendation to move the transfer station;
- Provide a reference to the statement on page 4;
- Consider the use of the term “climate change”.

The Steering Committee thanks the energy chapter subcommittee for doing a great job on the City’s first energy chapter.

Made by: Mr. Carpenter **Second:** Ms. Richmond

Vote: Unanimous in favor

b. Draft Natural Resources Chapter

Note: Ms. Skowronski serves on the Natural Resources Chapter Subcommittee.

The committee had very little time to study this chapter as the packets hadn’t arrived (for many) until the day before the meeting. However, they moved forward with discussing the first part of the chapter.

It was suggested that the goals and objectives be embedded in the chapter due to the length of the chapter.

Mr. Koloski asked for more discussion of the City’s responsibility with regard to its conservation easement. He said the easement needs to be monitored and its conditions enforced, but there is no process in place to ensure that gets done both now and into the future. There should also be mention of mitigation.

Ms. Carman asked for captions on all of the pictures.

Mr. Feleen asked if the protection of prime agricultural soils poses a conflict with the economic development goals of the City. The same question was raised regarding the current use program.

Additional comments made included:

- Page 11 – survey results regarding scenic views – provide more survey result data;
- The first sentence on page 12 is “alarmist” and should be changed or removed;
- Page 18 – use of the words “global warming”
- Add “carbon sequestration” to the glossary.

The committee will continue reviewing the chapter at the next meeting. They asked the natural resources chapter subcommittee members to attend their meeting so as to participate in the discussion.

IV. Correspondence

There was no correspondence.

V. Other

There was no other business.

VI. Adjournment

Motion: To adjourn the meeting.

Made by: Mr. Lafreniere **Second:** Mr. Carpenter

Vote: Unanimous in favor

The meeting adjourned at 6:58 PM.

Respectfully submitted,

deForest Bearse

CHAPTER VII: NATURAL RESOURCES

1 INTRODUCTION

This chapter describes the key components of Claremont's natural resources and sets forth a philosophy and vision for their use, management, and conservation. The history and current condition of these resources were considered in developing this plan and its stated goals.



Also addressed in this chapter are the ecologically significant areas in the community as identified in the 2013 Natural Resources Inventory ¹.

Resources covered in this chapter include:

- ✦ Water Resources
- ✦ Landscape and Geography
- ✦ Forest Resources and
- ✦ Wildlife Resources
- ✦ Invasive Species
- ✦ Ecologically Significant Areas.

The economic, cultural, public safety and health benefits of environmental protection are increasingly being quantified in economic and social measures that show them to bring significant values to human society.

VISION

Claremont residents:

- ✦ understand the importance of natural resources that are properly and sustainably managed;
- ✦ take pride in their publicly owned natural resources and forestlands;
- ✦ have access to local outdoor recreational opportunities;
- ✦ support the preservation of key areas in Claremont with significant natural resources values.

Recent survey results showed that 74% of respondents support conservation efforts, such as volunteering to remove invasive species or beautification of city open spaces.

Glossary

A glossary is provided here to define terms used in this chapter that may be unfamiliar to the reader.

- ✚ **Aquifer:** An aquifer is an underground layer of water-bearing permeable rock, rock fractures or unconsolidated materials (gravel, sand, or silt) from which groundwater can be extracted using a water well.
- ✚ **Biomass:** Biomass is organic material that comes from plants and animals, and it is a renewable source of energy
- ✚ **Carbon Sequestration:** a natural or artificial process by which carbon dioxide is removed from the atmosphere and held in solid or liquid form.
- ✚ **Fen:** One of the main types of wetland, the others being grassy marshes, forested swamps, and peaty bogs. Along with bogs, fens are a kind of mire
- ✚ **Forest:** A large area of land covered with tree or other woody vegetation.
- ✚ **Flood Plain:** An area of land adjacent to a stream or river that stretches from the banks of its channel to the base of the enclosing valley walls and experiences flooding during periods of high discharge.
- ✚ **Groundwater:** Water below the land surface
- ✚ **Hydric:** Soil which is permanently or seasonally saturated by water, resulting in anaerobic conditions, as found in wetlands.
- ✚ **Hydrophytes:** Aquatic plants are plants that have adapted to living in aquatic environments (saltwater or freshwater). They are also referred to as hydrophytes or macrophytes.
- ✚ **Invasive Species:** An invasive species can be any kind of living organism - plant, insect, fish, fungus, bacteria, or even an organism's seeds or eggs - that is not native to an ecosystem and which causes harm.
- ✚ **Riparian Zone:** The interface between land and a river or stream. Plant habitats and communities along the river margins and banks are called riparian vegetation. Riparian zones are important for their role in soil conservation, their habitat biodiversity, and the influence they have on fauna and aquatic ecosystems, including grasslands, woodlands, wetlands, or even non-vegetative areas.
- ✚ **Shorelands Protection Act:** The Shoreland Water Quality Protection Act was originally named the Comprehensive Shoreland Protection Act (CSPA) and was enacted into law in the 1991 session of the New Hampshire Legislature. The act establishes minimum standards for the subdivision, use and development of shorelands adjacent to the state's public water bodies.
- ✚ **Substrate (stratum):** In geology and related fields, a stratum (plural: strata) is a layer of sedimentary rock or soil with internally consistent characteristics that distinguish it from other layers. The "stratum" is the fundamental unit in a stratigraphic column and forms the basis of the study of stratigraphy.
- ✚ **Turbidity:** Turbidity is the cloudiness or haziness of a fluid caused by large numbers of individual particles that are generally invisible to the naked eye, similar to smoke in air. The measurement of turbidity is a key test of water quality.
- ✚ **Urban Forest:** The term urban forest refers to all publicly and privately owned trees within an urban area— including individual trees along streets and in backyards, as well as stands of remnant forest. ²

- ✦ **Watershed:** An area of land where all surface water from rain, melting snow, or ice converges to a single point at a lower elevation, usually the exit of the basin, where the waters join another body of water, such as a river, lake, wetland, sea, or ocean. Thus if a tributary stream joins a brook that in turn joins a small river which is a tributary of a larger river, there is a series of successively larger (and lower elevation) drainage basins. Also known as drainage basin or catchment basin.

¹ *City of Claremont Natural Resources Inventory*, Jeffrey N. Littleton, Moosewood Ecological LLC, Chesterfield NH, January 2013

² Nowak, David J.; Stein, Susan M.; Randler, Paula B.; Greenfield, Eric J.; Comas, Sara J.; Carr, Mary A.; Alig, Ralph J. 2010. *Sustaining America's urban trees and forests: a Forests on the Edge report*. Gen. Tech. Rep. NRS-62. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 27 p

2 Water Resources

Water is essential to the survival of most living things. Unfortunately, water resources are also one of our most fragile ecosystems. Therefore, it is important to protect our water resources to ensure viable water supplies for present and future generations. Protection means preventing water pollution, improving the quality of water resources that may already be compromised, and minimizing waste.

[Note: For security purposes, the locations of Claremont's municipal water resources are not shown or directly discussed in this chapter.]

Water is present both on the earth's surface and beneath it. Surface water includes streams, brooks, rivers, ponds, lakes and wetlands. Subsurface water or groundwater exists primarily as aquifers.

2.1 Surface waters

Surface waters in all of their forms are critically important to a wide variety of wildlife and plants for part or all of their life cycle needs. Surface waters also provide a multitude of human benefits including drinking water and recreational activities.

Surface water is very vulnerable to a wide array of pollutants. Its quality can be degraded by too much sediment, chemical pollution, or even by temperature fluctuations. Pollution is often the result of human activity, either accidental or deliberate. Once water quality is degraded, it can be very expensive to clean it up.

Claremont is relatively rich in water resources—making up approximately 3,300 acres (*Upper Valley Lake Sunapee RPC, 2007*). Two of the region’s major rivers flow through the community as well a number of smaller brooks. There are no major lakes, although there are several small ponds and manmade reservoirs such as the Rice and Dole Reservoirs north of the Sugar River.

2.2 Wetlands

Wetlands are areas where the water table is usually at or near the surface or the land is covered by shallow water. Wetlands include such areas as swamps, bogs, fens, floodplains and shorelands. They are delicate ecosystems that are susceptible to disruption by change.

Wetlands are valued for their ability to recharge groundwater and streams, to provide flood attenuation, pollution abatement, and wildlife habitat. Wetlands function as natural water treatment and storage areas as well as an important part of the overall habitat for wildlife.

Wetland areas in Claremont are generally well-distributed with concentrations along river ways and in small catchment areas. The 2013 Natural Resources Inventory mapped 358 wetlands in the City. 146 of these wetlands (totaling 510 acres) were identified for comparative evaluation. Each wetland was ranked as having high, moderate, or low functional value. The results are shown in Table 1 below.

Table 7-1. Summary of the wetlands comparative evaluation.

Functional Ranking	Count	Size(acres)	Average(acres)	Maximum(acres)	Minimum(acres)
High Value	37	238.4	5.8	63.8	0.5
Moderate Value	73	215.3	2.6	29.1	0.5
Low Value	36	54.1	1.4	7.4	0.5

SOURCE: *Moosewood Ecological LLC (2013).*

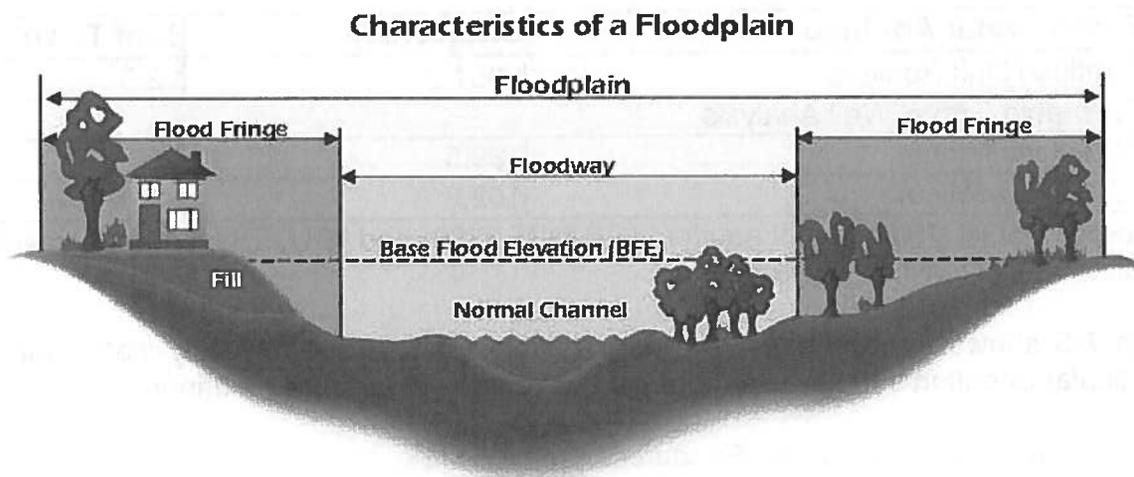
MAP 7-2 Map of Wetlands Evaluation [from the NRI –, pg. 17]

The wetlands functional ranking can be used in a variety of land use efforts. One of the main uses can be to prioritize wetlands for conservation. Wetlands with an overall high value can be evaluated by the City when working with willing landowners for natural resources protection (e.g. conservation easements). Other protection efforts may include land use regulations and the identification of wetland mitigation efforts in the City. Likewise, low value wetlands may offer opportunities for wetlands restoration projects. (NRI, pg. 12)

2.3 Floodplains

Floodplains are the periodically inundated flat lands adjacent to rivers and streams. Floodplains serve as storage areas for water during times of flooding and provide travel corridors for wildlife. Due to their important ecological characteristics, development in floodplains presents some special problems, including:

- 1) A high probability of property damage during flooding;
- 2) The restriction of periodic water storage resulting in potentially greater flooding; and
- 3) The increased likelihood of erosion and sedimentation. The latter factor can cause increased turbidity of water in rivers and streams.



<http://www.co.umatilla.or.us/planning/floodhazard.htm>

The City participates in the National Flood Insurance Program which allows residents access to affordable flood insurance. Participation requires strict adherence to floodplain regulations that provide guidance for development within mapped flood plain areas. Failure to comply with this regulation can result in the City being removed from the Program.

2.4 Groundwater Resources

Groundwater is water below the land surface. Groundwater is found in gravel pockets or in fissures in bedrock. The term “aquifer” describes water saturated earth materials from which a water supply can be obtained.

Groundwater is a vitally important resource for drinking water for those properties in Claremont that are currently outside of the City’s water distribution system. Groundwater also serves to support sensitive ecosystems, such as wetlands and wildlife habitats.

Claremont contains approximately 6,352 acres of stratified drift aquifers (Table 4 and Map 3). The largest contiguous aquifer is located along the Sugar River and Connecticut River,

as well as their associated wetlands, totaling 6,198 acres. The other location is found along Redwater Brook.

Aquifers are divided into categories based on transmissivity, or the rate at which water moves through an aquifer and is measured in square feet per day (ft²/day). Higher rates of transmissivity correspond to a potentially higher yield of groundwater. Most of the aquifers in Claremont have a transmissivity rate of 1,000 ft²/day or less, which corresponds to a potential yield of less than 75 gallons per minute. However, a few smaller areas are predicted to have a much higher yield. These aquifers are suitable sources of drinking water for the City. They should be protected from contamination.

Table 7-2. Summary of aquifers and favorable gravel well analysis.

Groundwater Attribute	Size(acres)	% of Town
Stratified Drift Aquifers	6351.7	22.5
Favorable Gravel Well Analysis		
75Gallons/Minute	139.5	0.5
150Gallons/Minute	162.2	0.60

Source: USGS stratified drift aquifers (GRANIT 2000) and NH DES favorable gravel well analysis (2011). (NRI, pg. 19)

Map 7-3 shows the locations of areas suitable for future community water supplies. Particular attention should be paid to land development in these locations.

MAP 7-3 Map of Groundwater Resources [from NRI, pg. 20]

Groundwater is easily contaminated by surface spills of toxic substances, leaking underground storage tanks, poorly functioning septic systems, and the deliberate injection of wastes into disposal wells. Once groundwater is contaminated it is extremely difficult and costly to restore. Hence proactive prevention measures are critically important.

2.5 Surface Waters as a Recreational Resource

Surface waters provide multiple recreational opportunities such as boating, swimming and fishing. However, it is critical to the long-term health of this resource that such activities cause no harm to the quality of the water or the integrity of the streambanks and shorelines used for such access.



Fishing on the Sugar River (Credit City of Claremont)

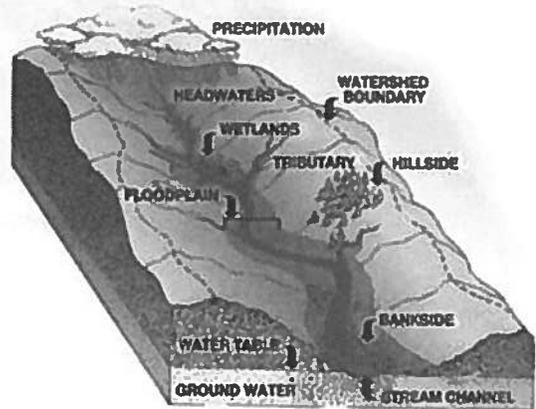
2.6 PROTECTION STRATEGIES

Regulation of activities on and near surface waters is one way to protect surface water quality. Such regulations may be local ordinances or state statutes. One example is the Shoreland Water Quality Protection Act (**RSA 483-B, The Act**) - a state statute that protects water quality of designated public waters. The Act protects six water bodies in Claremont including the Connecticut River, the Sugar River, Chapin Pond, Coy Paper Dam, Rice Reservoir, and Whitewater Brook. NOTE: The Sugar River is exempt from the Act between the Sarah B. H. Smith Riverside Park at 43 Washington Street and the KZM Properties parcel at 247 Sullivan Street.

The City has adopted variance ordinances to protect streambanks and surface water quality as well. These include (in part) the Floodplain and Streambank Districts in the City's Zoning Ordinance.

2.6.1 Watershed Protection

Watershed protection is a means of protecting surface waters by managing the entire watershed that drains into it. As rain and snowmelt travel within this “catch basin” and flow by gravity into the water bodies and ground, they carry various amounts of nutrients and pollutants with them. A watershed approach to water resources planning is critically important, as watersheds are the main units of surface water and groundwater recharge. In addition, the land uses located within a watershed directly impact the water quality. All of Claremont is within the Connecticut River watershed and most of it is within the Sugar River watershed.



**Conceptual Watershed
Cross Section**

MAP 7-1: Map of CT River and Sugar River Watershed Boundaries

2.7 Future Challenges and Opportunities

Preservation of both our water quality and water quantity is paramount to a healthy future for our City. Quality can be guarded by regulating our activities on and near our water bodies, and while we can't do much to influence how much rain falls in any given year, we can do much to minimize water waste.

2.7.1 Preservation of Water Resources

Much can be done at the local level to prevent degradation of water resources. As stated previously, management of watersheds in their entirety is the preferred method.

Tools for Watershed Protection/Management

(1) Land Use Planning: The basic goal of the watershed plan is to apply land use planning techniques to redirect development, preserve sensitive areas, and maintain or reduce the impervious cover within a given watershed. Land Use Planning techniques can include watershed-based zoning, overlay zoning, large lot zoning and transfer of development rights.

(2) Land Conservation: Land acquisition, from willing owners, is an important non-regulatory measure to protect water quality. The Conservation Commission is authorized by RSA 36-A: 4 to acquire the fee simple (full title) or a lesser interest in land for conservation purposes. Other water resource protection options to pursue are conservation easements, which place permanent restrictions on certain uses of the land, or landowner donations.

(3) Aquatic Buffers: Stormwater runoff from roads and other impermeable surfaces often enters surface waters directly or via drainage structures, and carries with it salt, sediment and other pollutants. Aquatic buffers can prevent these contaminants from entering the surface waters.

(4) Better Site Design: Site plan regulations can be developed to foster better site design during the development review process.

(5) Erosion and Sediment Control: Erosion and sedimentation control and stormwater management are other tools that can be used to decrease surface water quality degradation associated with development and other activities. Stormwater Best Management Practices (BMPs) is a term used to describe optimum methods of controlling stormwater runoff and discharge. BMPs reduce water pollution and flooding.

(6) Watershed Stewardship Programs: Programs that can be developed locally or regionally to care for the health of a watershed.

The Claremont Conservation Commission oversees the Stevens Brook Conservation Easement, a site that is managed primarily for wildlife and water quality protection with low impact recreation as a secondary function. The plan is to preserve the wetlands and to maintain the existing and restored upland buffers along Stevens Brook and the Sugar River to maximize the conservation area's functions and values particularly for wildlife and water quality. At present, the boundaries of the easement area are not completely delineated on the ground and the signage that would identify it has not been posted. Both tasks should be completed to ensure protection of the resource.

The City should consider employing all of the above tools to improve and protect its valuable water resources to ensure clean, healthy water is available for humans and wildlife well into the future.

Goal #1 Water Resources

Protect and improve the quality of the City's surface and groundwater resources.

Objective No. 1.1: Integrate water resource protection best practices into City land use planning priorities and regulatory updates.

Actions

1. Create and adopt a watershed management plan to regulate land use activities that affect the quality and quantity of the City's surface and groundwater resources. The plan should incorporate the tools discussed in this chapter.
2. Update the 1991 Source Water Protection Plan.
3. Assess current level of resource protection in zoning, subdivision and site

- plan regulations.
4. Integrate wetland and aquifer protection into water resource protection strategies.
 5. Work with Parks & Recreation Department to ensure that recreation does not compromise the water resources in or near which they may be located.

Objective No. 1.2: Manage of City-owned properties to protect water resources.

Actions

1. Finish marking the boundaries of the Stevens Brook Easement area and posted the necessary signage.
2. Ensure compliance with the terms of the Stevens Brook Conservation Easement.
3. Enhance undeveloped buffer zones around City public water supply reservoirs.
4. Develop a land management plan for all City properties with emphasis on water quality improvement and protection.

Goal #2 Floodplains

Maintain regulatory floodplains in the City to serve as flood storage and attenuation areas while minimizing risk to property damage, injury, or loss of life during a flood event.

Objective No. 2.1: Make Claremont a community resilient to flooding.

Actions

1. Conduct periodic reviews of City land use regulations to meet the minimum regulatory requirements of the National Flood Insurance Program. Amend as needed to remain compliant.
2. Utilize grants, technical assistance, and other opportunities to evaluate and improve City infrastructure, development policies, and land use regulations to increase flood resilience.
3. Incorporate, as appropriate, findings and recommendations of the current Hazard Mitigation Plan into municipal land use planning practices.

Map dam failure inundation areas in the City and identify appropriate actions to manage development within those areas.

3 Landscape and Geography

The physical characteristics of a community – its topography, its open and forested spaces, and its man-made features - together create the visual landscape of a community. The ‘patchwork’ of these components defines its character and establishes its identity. A visually pleasing landscape makes a significant contribution to a community’s overall quality of life. The degradation of any one or more of these components – whether suddenly or gradually - can completely change that



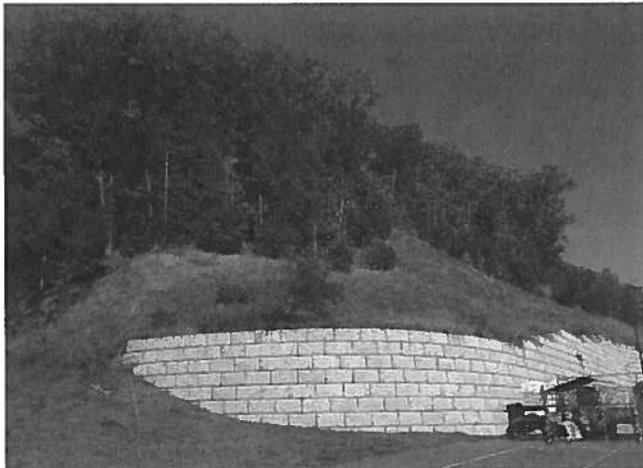
*The 'Patchwork' of Downtown Claremont and Surroundings
(Credit WMUR)*

character. The erosion of the visual character of a community can have not only psychological impacts, but also very real economic impacts through the loss of tourism, depreciated real estate, and an inability to market the community to prospective businesses and residents. It is therefore critically important in the review of development or forestry projects to evaluate them in the context of community character.

3.1 Topography

3.1.1 Steep Slopes

Areas of slopes over 15% are areas in which special precautions need to be taken to be developed. Development should be avoided in these areas because of the extra costs and inconveniences involved with controlling erosion and installing a properly functioning septic system.

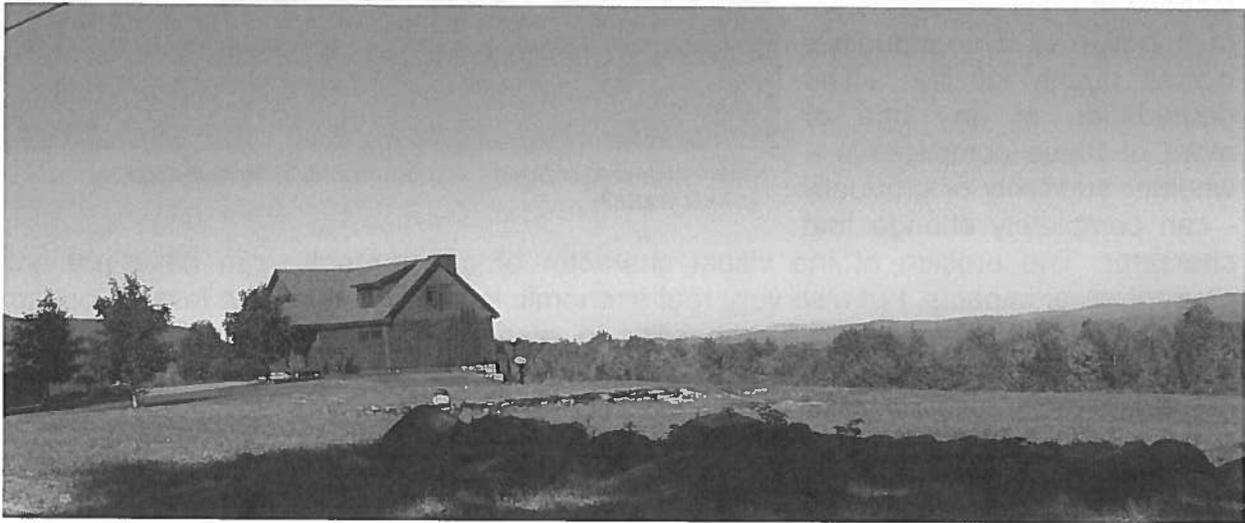


*Development of a Steep Slope, Main Street, Claremont
(Credit d. Bearse)*

There are abundant steeply sloping areas in Claremont. They are scattered throughout the northern and southeast sections of the city and are also found to the west of the downtown on Twistback Hill and on Barber Mountain along the Connecticut River. For the most part, these areas are zoned for low density development with one house per five acres and should remain that way.

3.1.2 Hilltops and Ridge Lines

The very top of a ridge is called the ridge line. It is here that development can become controversial. The best views, abundant wind, and solar exposure are often found at the ridge line. However, development of hill tops and ridge lines can be detrimental to a community's visual landscape because of the loss of trees and the presence of structures set against a bare sky backdrop. Development of ridge lines can also be environmentally detrimental to both wildlife and water quality. The City should inventory its hilltops and ridge lines and decide how it wants to protect or develop them individually. In a recent survey, 41% of respondents said development should not be allowed along the City's ridgelines. (41% said "maybe"; 17% said "yes")



Ridgeline Development (Credit d. Bearse)

3.1.3 Scenic Areas

The scenic areas of a community are often its most cherished visual component. These areas add a great deal to the community's unique character. Scenic areas can include such features as:

- Hilltops and ridgelines
- Meadows and agricultural lands
- Water bodies
- Cultural and historic features (think battlegrounds or training fields)
- "Working landscape" (farms, animals, crops)
- Natural features and open space
- Community gateways

In a 2016 survey, 41% of respondents rated scenic views as being the most important component of rural character for them when ranked against ten other components.

The City's scenic areas should be inventoried by the City and protection/preservation/development strategies should be developed for them.

3.2 Soils and Geology

3.2.1 Soils

The USDA Natural Resources Conservation Service (NRCS) defines soil as:

“a natural body comprised of solids (minerals and organic matter), liquid, and gases that occurs on the land surface, occupies space, and is characterized by one or both of the following: horizons, or layers, that are distinguishable from the initial material as a result of additions, losses, transfers, and transformations of energy and matter or the ability to support rooted plants in a natural environment.

The upper limit of soil is the boundary between soil and air, shallow water, live plants, or plant materials that have not begun to decompose. Areas are not considered to have soil if the surface is permanently covered by water too deep (typically more than 2.5 meters) for the growth of rooted plants.”

Soils are classified by their chemical and physical characteristics. The NRCS has classified Claremont's soils into the following five groups:

Windsor-Unadilla Variant-Agawam: This group is found in the level areas along the Connecticut River and in the Downtown. The soils in this group were formed by glacial outwash deposits and tend to be deep, excessively drained and well drained sandy and loamy soils.

Bernardston-Cardigan-Kearsarge-Dutchess: Most of Claremont's soils are in this group. These are mainly loamy soils formed in glacial till and can be well drained or excessively drained.

Colton-Adams-Rumney: These soils are located along the Sugar River west of the Downtown. They are deep, loamy and sandy soils formed in glacial outwash deposits and alluvium.

Monadnock-Marlow-Lyman: This soil group is only found in the far southeast corner of Claremont. It consists of well drained and excessively drained loamy soils formed in glacial till.

Monadnock-Marlow-Herman: This soil group is found only in the far northeast corner of Claremont. It consists of well drained and excessively drained loamy soils formed in glacial till.

With the exception of a few small isolated patches, all of Claremont's soils are classified by the NRCS as having severe limitations for on-site septic disposal. This means that properties of the soil or site are so unfavorable that the need for special design results in significantly increased construction costs. In some areas, the limitation is caused by poor drainage, shallow depth to bedrock, or a high water table. In others, the problem is caused by layers of silt or clay. During the glacial period, the lower river valleys in Claremont were the bed of Lake Hitchcock. Soils in these areas contain layers of clay and silt that were deposited by this glacial lake. These deposits cause problems for on-site septic disposal because the effluent drains across these impermeable layers instead of down into the ground.

Most of the areas in Claremont with frequent reports of septic system problems are in the areas of glacial lake bed. These include the following:

- Chestnut Street Extension
- Lower portions of Green Mt. Road and Winter Street
- Hanover Street (ledge)
- Paddy Hollow
- Plains Road
- Beaugard Village
- Sullivan Flat
- Airport Hill
- Claremont Junction
- River Road-Grissom Lane area

3.2.2 Agricultural Soils

The best soils for growing crops are called "Prime Agricultural Soils". Soils along the Connecticut River are prized as some of the finest agricultural soils in the world. Claremont is rich with important soils for both forest management and agriculture. These areas represent some of the best soils for the production of forest products and food, feed, and fiber from farming. These natural resources can help provide us with insight into the potential production within the working landscape.

In response to the Farmland Protection Policy Act of 1981, agricultural soils were mapped by the US Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). Based on a variety of physical and chemical properties (i.e., drainage, texture, hydric regime, pH, erodibility factor), these soils have been identified as being among the most productive lands for many types of farming practices. These include prime farmland soils, farmland soils of statewide significance, and farmland soils of local significance. (NRI, pg. 31)

Important agricultural soils cover approximately 10,096 acres, or roughly 36% of Claremont. These soils are widely distributed throughout the town. Prime farmland soils make up about 15% of the total acreage of agricultural soils while farmlands of local and statewide significance total approximately 21% of these soils.

Unfortunately, prime agricultural soils usually impose the least constraints to development for residential, commercial, or industrial uses. This partly explains why the amount of farmland has decreased, and is a reason why the community should act if it wishes to conserve agricultural lands.

3.3 Community Use of Natural Resources

3.3.1 Open Space

The term “Open Space” is generally understood to mean any land area that lacks human structures. Agricultural fields, open pastures, and meadows are considered “open space”. It can relate to rural areas where development is spread wide apart with areas of undeveloped land in between. It can also relate to urban open space in the form of public parks and recreation areas – anywhere in the urban area that is mainly grass, trees, shrubs, and flowers – areas designed to provide respite from pavement, buildings, and vehicles.

Open space helps:

- Enhance the small-town character;
- Provide scenic views that contribute to the quality of life and to a visitor’s aesthetic experience;
- Support tourism;
- Promote self-sufficiency and small-scale economy when continued for agricultural purposes;
- Enhance and protect wildlife habitat; and
- Ensure a positive fiscal impact on the city by enhancing property values and keeping property taxes down.

Much of the northern New England character is built upon the framework of the agricultural economy. The very pattern of development in New England is based upon a densely developed center that is surrounded by open agricultural lands. Towns are visibly separated from one another by open, undeveloped lands, which allows each town to maintain its own unique identity. Picture the difference between traveling the Route 12 corridor between Claremont and Keene and traveling the route between Boston and Framingham in Massachusetts. The Massachusetts driver will find it difficult to know when they have left one community and entered another because there is no clear separation between them. However, the traveler on the Route 12 corridor in New Hampshire will have little difficulty knowing that they have passed from one town to another because of the undeveloped spaces in between.

Rural open space lands provide habitat and travel corridors for wildlife, educational opportunities and “breathing space” for residents and visitors, as well as a disappearing link with history. Local farms provide fresh, high-quality food directly to the community and the region, eliminating the need for energy- and cost-intensive shipment and travel.

They contribute directly and also indirectly to the economy by providing the quality of life that attracts companies and their workforce as well as tourists.

The City is well endowed with urban space with its well-maintained parks and recreation areas. These areas are overseen by the Parks and Recreation Department. (Refer to that chapter for more details.) The City also owns a former railroad right-of-way that has been converted to a walking/biking trail. The trail extends from Pleasant Street in the downtown to the Newport-Claremont town line and provides a popular resource for residents and visitors. The Conservation Commission is responsible for developing the long-range plan for the trail and for overseeing activities along it.

3.3.2 Land Development and Current Use

The current use program in New Hampshire provides property owners the benefit of reduced property taxes on open space lands, but does not ensure long-term protection. The purchases of conservation easements, development rights or fee simple acquisition of significant open space or agricultural lands do provide long-term protection.

Table 7-3. Summary of properties enrolled in current use as farmland and forest land.

Working Landscape Type	# of Parcels	Size (acres)	% of Town
Farmlands	65	3,298.34	12
Forest Lands -Managed	21	3,331.63	13
Forest Lands -Unmanaged	166	11,110.40	42

SOURCE: City of Claremont tax assessor's database (2016).

Landowners in the program are encouraged to keep their land open to the public all year for hunting, fishing, skiing, hiking, and nature observation. Willing landowners that do not post their property against trespassing receive additional tax savings. Although few properties in the program are posted against trespassing it is not a requirement to keep lands open.

Approximately 70% of Claremont's total land area is enrolled in the Current Use program. Most of these are enrolled as forest land. This includes more than 14,000 acres of managed and unmanaged forests distributed throughout Claremont. Of the total 187 parcels listed as forest lands only 21 currently have management plans. These properties may be eligible for reduced tax assessments if they meet the criteria set forth by the program for good land stewardship.

Agriculture was thriving in Claremont in the early to mid-1800s. However, with the expansion of industries in the city development pressure increased dramatically, whereby changing the land use from farming to more residents and businesses. Today, roughly 7% of Claremont is enrolled as active farmlands. These include a variety of land use practices, such as corn fields and other row crops for vegetables, hayfields, dairy, and other livestock production. As one drives along Routes 12A and 12/11 one can see many open fields that are used for farming.

Claremont's working landscape and the Current Use program help to maintain open space throughout the city. Many studies have been conducted in NH that compare the cost of services of residential, commercial/industrial, and open space land. These studies have shown that residential development often results in higher community costs (schools, roads, fire and police protection) than revenues generated. (NRI, pg. 38-39)

Recreation and Natural Resources

Trails, river access, parks and open space are integral parts of the community. It is often through recreation that the human environment and natural environment amalgamates to create a whole community. The recreational use of natural resources, however, should never result in the degradation of them.

More detail on the recreational opportunities in the City of Claremont's urban and rural areas can be found in the Recreation Chapter of this Master Plan.



View from near Cat Hole Road (Credit WMUR)

LANDSCAPE AND GEOGRAPHY

Goal #1 Sense of Place

The City should recognize characteristics in its natural landscape that define its character, as experienced by its citizens, and strive to preserve and protect them.

Objective 1.1: Identify and protect important topographic and scenic features in the City landscape.

Actions

1. Minimize development on areas with slopes greater than 15%.
2. Identify hilltops and ridgelines that warrant protection from development and develop appropriate protection strategies.
3. Identify important scenic vistas and develop protection strategies.

Objective 1.2: Conserve important agricultural soils.

Action

1. Minimize development/impermeable surfaces on mapped Prime Agricultural Soils.

Objective 1.3: Enhance community use of natural resources

Actions

1. Maintain the traditional New England development pattern with a densely developed center surrounded by gradually less dense development and increasing open space toward the City's boundaries.
2. Foster good land and natural resource stewardship (e.g. agriculture and forestry best management practices) of private and City-owned open space through education and outreach efforts. Encourage individual landowners to be good stewards of their own properties.
3. Identify open space parcels that have significant natural resource value and/or serve as wildlife corridors for the City or a third party to purchase or obtain easements for natural resource conservation.
4. Assess current level of resource protection in City Land Use Regulations. Develop regulatory amendments to increase protections, where necessary.
5. Continue to provide for both motorized and non-motorized sustainable recreation opportunities such as ATV and snowmobile trails, foot paths, and cross country skiing and snowshoe trails where it is appropriate and compatible with the ecology of the parcel.
6. Manage City recreation areas for ecologically and socially sustainable recreation opportunities including maintaining a recreational infrastructure (e.g. picnic areas, shelters, trails, etc.), hunting (where appropriate), and creating vistas along recreational trails for scenic areas and wildlife viewing.
7. Complete the long-range plan for the rail-trail.

8. Work with the Parks and Recreation Department to ensure that recreational activities on City-owned open space lands are not incompatible with the ecosystems of those lands.

4 Forest Resources

Forest resources within New Hampshire are significant for many reasons. They provide:

- diverse ecological functions, such as:
 - nutrient cycling,
 - carbon sequestration,
 - water quality maintenance through sediment trapping;
- substantial habitats for wildlife and plants;
- clean air;
- a multitude of forest products; and
- sources of employment.



New England Forest (Credit: Justin Reznick/iStockphoto.com)

Healthy forests also help promote local economies, recreation and tourism and provide the appealing backdrop for New England villages. Benefits of forests include reduced energy use, improved water quality, diverse wildlife habitat, as well as improved human health and well-being. Urban forests are an essential component of a 'green infrastructure' and their benefits extend well beyond the cities and towns where they are located.

For these reasons, it is important to maintain large tracts of forest lands and to better understand where important forest soils exist in Claremont. (NRI, pg. 35)

4.1 Overview of City of Claremont Forest Management Plan

In 2008 forestry consultants, Ecosystem Management Co., Meadowsend Timberlands, LTD was hired by the City of Claremont and prepared a Forest Management Plan for the City of Claremont Forestlands. It included the following parcels:

- Arrowhead Forest ^{1,2},
- Cat Hole Road ¹,
- Industrial Road Lots,
- Moody Park,
- Rice Reservoir,
- Veteran's Park,
- White Water Reservoir, and the

- Winter Street Lot.

These lots contain approximately 1535 acres.

The plan identified trends and common features of all the above parcels, and the management goals, objectives, and practices that will be generally applied. The forest conditions, specific management goals and objectives, timber volumes, soil types, access considerations, special wildlife habitat considerations, historical information and other specific details are addressed parcel by parcel. The Natural Resource Chapter of the Master Plan adopts the Forest Management Plan in its entirety.

In 2009, New England Forestry Consultants Inc. (NEFCO) was hired to implement the Forest Management Plan. Although the management plans for each individual parcel are written for a ten-year period, they are meant to be flexible. As the science and knowledge base grows, as market conditions change, and as technology changes, so must the management techniques. While the overall goals of management plan will remain consistent, the objectives and practices used to reach desired goals must be flexible.

As of August 2016, NEFCO had completed about 40% of the plan, with 641 acres being treated to various timber harvesting and thinning operations. In addition, twenty-two miles of City-owned forestlands' property boundary lines were surveyed, marked and painted.

We are approaching the end of the initial ten-year lifespan of Claremont's Forest Management Plan and updating it will be a priority. This will require a review of progress to date and obtaining public input on future management.

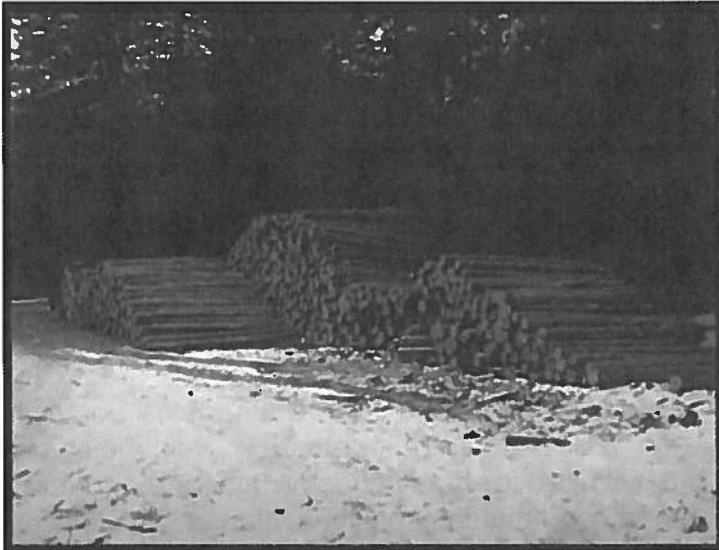
4.2 Forest Management and Natural Resources

Management of the City of Claremont forestlands will be geared to meet multiple, often interrelated goals and objectives. Even though economically and sustainably growing and harvesting trees is notably a major focus of ownership, timber is only part of the resource evaluated in the planning process. Water resource protection, open land, wetland and riparian conditions, wildlife habitat, recreational opportunities, scenic value, as well as renewable natural resource products such as biomass and fuel wood are evaluated and included in management recommendations. In the future the City may choose to consider the potential for carbon storage in its forests as well. Forest management on these lands will occur under the umbrella of land stewardship for the good of the forest and the people it serves.

Poorly managed forest harvesting operations, as well as development of large areas of forested land, can result in:

- wildlife habitat degradation,
- soil erosion:
- a complete change in the visual character of the area;

- negative aesthetic impacts that may take a lifetime to recover;
- and other negative environmental impacts.



Logging in Moody Park (Credit D. McKenney)

It is therefore critical that the Forest Management Plan be adhered to in order to prevent negative impacts.

It is important to develop an educational program regarding forestry for public and private lands.

The 2013 Natural Resources Inventory should be incorporated into the Forest Management Plan.

4.2.1 Important Forest Soils

Forest resources within New Hampshire are significant for many reasons. They provide sources of employment, a multitude of forest products, promote local economies, recreation and tourism, provide clean air, help sequester carbon, and provide substantial habitats for wildlife and plants, as well as diverse ecological functions (such as nutrient cycling, carbon sequestration, water quality maintenance through sediment trapping). For these reasons, it is important to maintain large tracts of forest lands and to better understand where important forest soils exist in Claremont.

The USDA Natural Resources Conservation Service has mapped the distribution of important forest soils and has classified them according to their capacity to grow trees. These soils signify areas as providing the most productive lands for timber production. The **NRCS** has identified three soils groups within this category and have described each as follows:

Forest Soil Class IA

This group consists of the deeper, loamy textured, moderately well, and well drained soils. Generally, these soils are more fertile and have the most favorable soil moisture relationships. The successional trends on these soils are toward stands of shade tolerant hardwoods, i.e., beech and sugar maple. Successional stands frequently contain a variety of hardwoods such as red oak, beech, sugar maple, red maple, white birch, yellow birch, aspen, and white ash in varying combinations with red spruce, hemlock, and white pine. Hardwood competition is severe on these soils. Softwood regeneration is usually dependent upon persistent hardwood control efforts.

Forest Soil Class IB

The soils in this group are generally sandy or loamy over sandy textures and slightly less fertile than those in group IA. These soils are moderately well and well drained. Soil moisture is adequate for good tree growth, but may not be quite as abundant as in group IA soils. Soils in this group have successional trends toward a climax of tolerant hardwoods, predominantly beech. Successional stands, especially those which are heavily cutover, are commonly composed of a variety of hardwood species such as red oak, red maple, aspen, paper birch, yellow birch, sugar maple, and beech, in combinations with white pine, red spruce, balsam fir, and hemlock. Hardwood competition is moderate to severe on these soils. Successful softwood regeneration is dependent upon hardwood control.

Forest Soil Class IC

The soils in this group are outwash sands and gravels. Soil drainage is somewhat excessively to excessively drained and moderately well drained. Soil moisture is adequate for good softwood growth, but is limited for hardwoods. White pine, red maple, aspen, and paper birch are common in early and mid-successional stands. Successional trends on these coarse textured, somewhat draughty and less fertile soils are toward stands of shade tolerant softwoods, i.e., hemlock and red spruce. Hardwood competition is moderate to slight on these soils. Due to less hardwood competition, these soils are ideally suited for softwood production. With modest levels of management, white pine can be maintained and reproduced on these soils. Because these soils are highly responsive to softwood production, especially white pine, they are ideally suited for forest management.

Important forest soils represent nearly 16,000 acres, or approximately 57% of Claremont. Forest soil groups IA and IB make up the majority of this resource and are most ideally suited for hardwood production. Soil group IC appears to be more restricted to stream drainages where outwash sands and gravels were deposited by glacial activity about 11,000 years ago. Group IC soils types are suited for softwood production, mainly white pine.

Table 7-4. Summary of important forest soils for timber production in Claremont.

Important Soil Type	Size (acres)	% of Town
Hardwood Production (IA and IB)	13602.1	48.2
Softwood Production (IC)	2371.0	8.4

SOURCE: GIS Analysis (Moosewood Ecological 2012) of USDA Natural Resources Conservation Service soils. (NRI, pg. 36)

4.3 Urban Trees

The trees that line the City's streets and grace the City's cemeteries and parks are also valuable resources. Urban street trees provide multiple benefits including (but not limited to):³

- Traffic calming
- Safer walking environment
- Aesthetics
- Reduces Storm water runoff
- Rain, sun, heat protection
- Pollution absorption
- Lower ambient air temperature in summer
- Public health
- Added value to adjacent businesses and homes
- Longer pavement life
- Screening

At present, there is no plan, no guideline, and no budget for the management of the City's urban trees. (There is a small budget for the removal of dead trees in the City's rights-of-way.) The Parks and Recreation Department oversees trees in the City's parks, while the Public Works Department responds to calls regarding hazard trees and dead trees in the City's rights-of-way and cemeteries. However, there is no policy for determining ownership of trees in the right-of-way and no guidelines for determining whether a tree should be removed or not.

4.4 Future Challenges and Opportunities

Claremont's forest resources are critically important to the City's character and natural resource inventory. They warrant continual careful stewardship to improve and maintain their health, beauty and ecological functions and to prevent a future of "benign neglect". Therefore, the 2008 Forest Management Plan should be updated right away, beginning with those parcels that have been logged since 2008. Such updates should be sure to include plans to monitor invasive species in newly opened areas.

Careful oversight of upcoming "cuts" on the remaining parcels must be provided to ensure adherence to the existing plan. Public outreach and education is also very important and the Conservation Commission should make every effort to inform the public about present and future plans and activities.

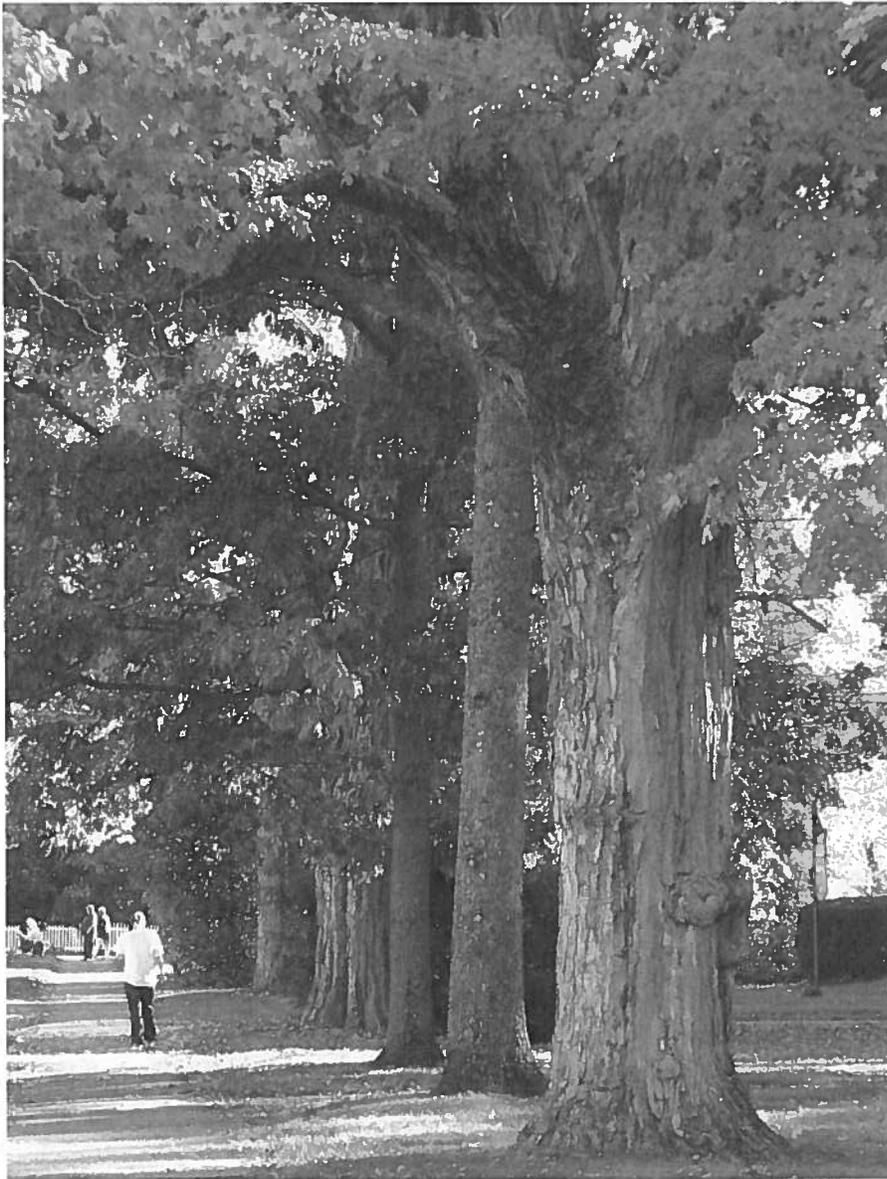
The City's urban trees also warrant careful stewardship. The City should create a management plan for the trees in the right-of-way and in the parks and public spaces within the City Center. A policy and guidelines for managing trees in the rights-of-way outside the City Center and in the City's cemeteries should also be developed.

City Center



The City Center would correspond roughly to the extent of the City Center Zoning Districts, which include the CR-1, CR-2, PR, CB-2 and MU zones.

Tree City USA



Street Trees, Broad Street, Claremont (Credit d. Bearse)

The City should consider acquiring "Tree City USA" status once again as a means of creating a sustainable urban forestry program. Additional benefits of the program include public education about the value of trees in the urban environment and the importance of sustainable tree management.

¹ Identified as "ecologically significant" in 2013 Natural Resources Inventory.

² Identified as most important to survey respondents, March 2016

³Urban Street Trees, 22 Benefits, Specific Applications, https://www.michigan.gov/documents/dnr/22_benefits_208084_7.pdf

Dan Burden, 2006,

FOREST RESOURCES

Goal #1 Recognize the value of the City's urban and rural forests in the character and quality of life in the City.

Objective 1.1 Improve management of the City's urban trees

Actions

1. Pursue membership in the Tree City USA program.
2. Create a policy and guidelines for management of trees in the public cemeteries and in the public rights-of-way outside of the City Center.
3. Create a Management Plan for trees in the public spaces of the City Center.

Objective 1.2 Improve where necessary and maintain healthy, biodiverse, productive and aesthetically pleasing forests.

Actions

1. Incorporate the 2013 Natural Resources Inventory into the 2008 Forest Management Plan.
2. Implement the Forest Management Plan.
3. Assess current level of resource protection in zoning, subdivision and site plan regulations

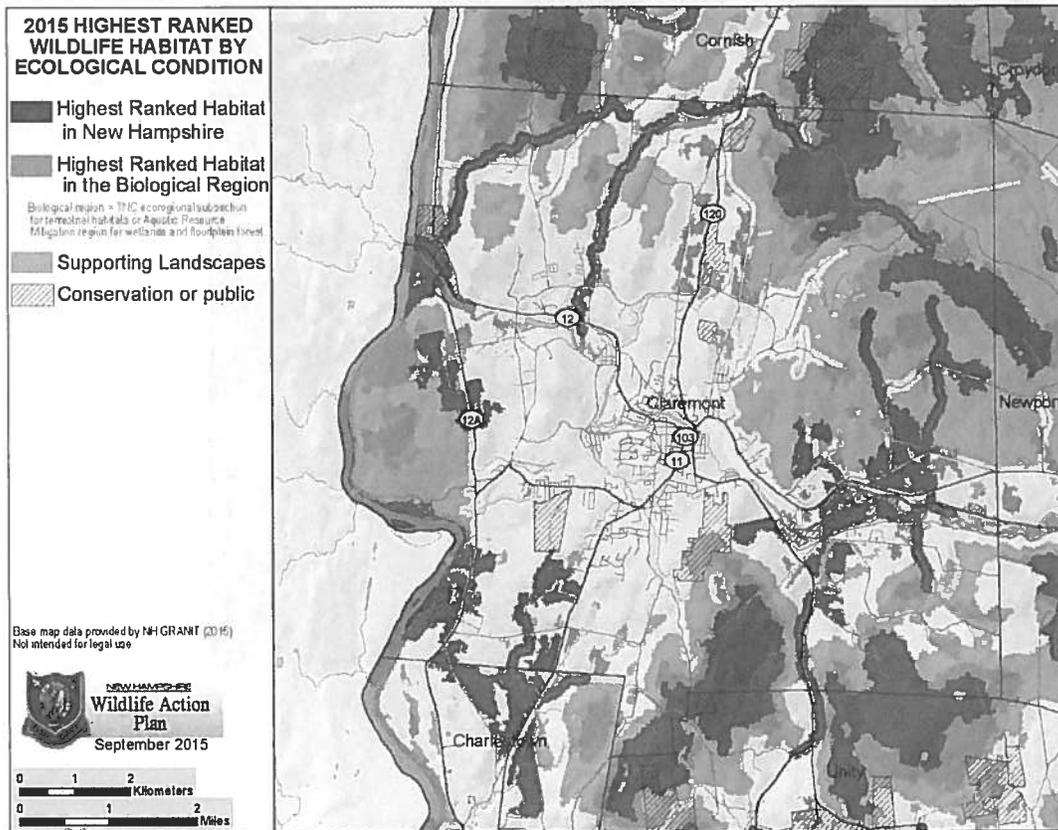
5 Wildlife Resources

The following information is taken directly from the 2013 Natural Resources Inventory.

5.1 Wildlife Habitats

The NH Fish and Game Department, in cooperation with other agencies, organizations, and individuals, produced the NH Wildlife Action Plan (WAP) in 2005 (habitats revised 2010). The WAP was designed as a planning and educational tool for federal, state, and municipal governing bodies, conservation commissions, land trusts and other conservation organizations, and private landowners, as well as the general public, to promote the conservation and management of NH's biological diversity. The WAP provides a resource for developing informed land use decisions and land management planning. The intent was to ensure that an adequate representation of various wildlife habitats is maintained across our landscape, keeping common species common in NH and working to prevent the loss of our rare and endangered species.

Map 7-6 Highest Ranked Wildlife Habitat (from 2015 NH Wildlife Action Plan)



The WAP identified approximately 11 different types of large and medium-scale wildlife habitats for Claremont in their revised habitat mapping in 2010. However, since these habitats were based on models, they only predict where these habitat types may be present and ground-truthing is essential to better understand the extent of habitats. As such, the WAP habitats were refined based on 2010 aerial photography interpretation in combination with roadside surveys and site assessments on City-owned lands. This resulted in the elimination of certain habitat types and the addition of others. It also represents a more representative effort at understanding the true extent of wildlife habitats located within Claremont.

A total of eight wildlife habitats as recognized by the WAP were mapped for Claremont (Table 7-6 and Map 7-7). Habitats that were eliminated included pine barrens, cliffs, and Appalachian oak-pine forests since evidence of these habitat types were not observed. The pine barrens and cliffs were mapped in very discrete areas. As such, there is high confidence that these habitats do not exist in the locations as predicted by the WAP. However, the WAP predicted that Appalachian oak-pine forests were more widespread in the western part of the City. Evidence of this forest type was not present from roadside observations. However, it is possible that it may be present in small patches in the unfragmented block west of Route 12A and south of the confluence of the Sugar River and Connecticut River. Site investigations within this area would need to be performed to confirm its presence or absence.



Map 7-7 Wildlife Habitat Types [NRI pg 23]

- Potential Vernal Pools
- Peatland
- Wet Meadow/Shrub Wetland
- Floodplain Forest
- Grasslands
- Shrublands
- Rocky Ridge or Talus Slope
- Lowland Spruce-Fir
- Northern Hardwood-Conifer
- Hemlock Hardwood-Pine
- Developed Land

Table 7-5. Summary of wildlife habitats in Claremont.

Wildlife Habitat Type	Size/Count	% of Town
Marsh and Shrub Wetlands	391 acres	1.4
Peatlands	19.4 acres	0.1
Vernal Pools	30 pools	n/a
Floodplain Forests	403.8 acres	1.40
Ponds and Reservoirs	104.2 acres	0.4
Rivers and Streams	164 miles	n/a
Lowland Spruce-Fir Forests	397.6 acres	1.4
Northern Hardwood-Conifer Forests	980.4 acres	3.5
Hemlock-Hardwood-Pine Forests	19254.7 acres	68.2
Ridge or Talus Slopes	155 acres	0.60
Shrub lands	226.4 acres	0.80
Grasslands	3146.2 acres	11.2

Source: Refined wildlife habitats (Moosewood Ecological 2013) and NH hydrography (GRANIT 2006).

Additional habitats recognized but not mapped in the WAP included potential vernal pools and shrub lands. These habitats are predicted to be more widespread throughout Claremont and are best mapped during ground-truthing exercises. Mapping of these important wildlife habitats was beyond the scope of the WAP. However, they do recognize their importance for wildlife diversity.

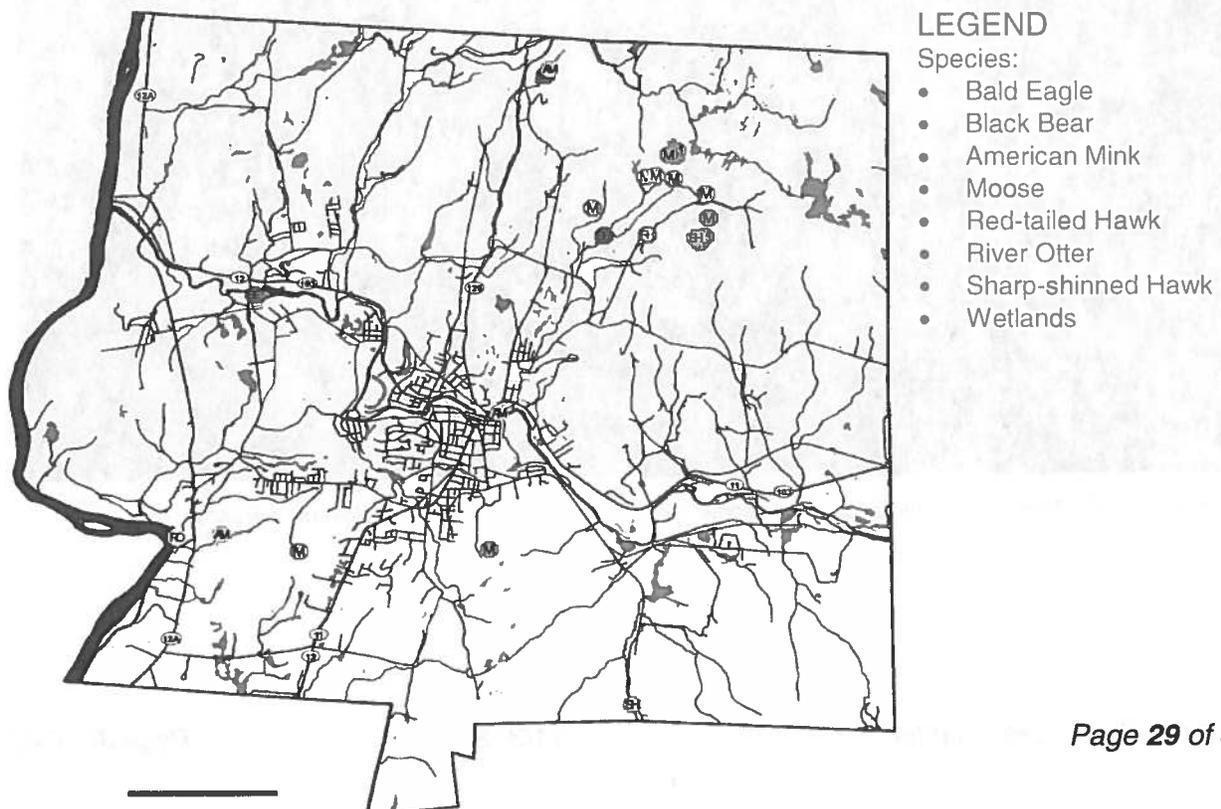
Vernal pools supply critical habitat for a variety of species. Amphibians such as spotted salamanders and wood frogs need these pools to complete their life cycles. In early spring they emerge from their winter habitats and migrate to vernal pools for breeding. During April and May one can easily view their egg masses, which are usually attached to live plants or twigs just beneath the water surface. After breeding, the adults leave the pools, retreating back to their upland habitats. These egg masses can serve as a critical food supply for wildlife, including the rare Blanding's turtle. Aquatic macroinvertebrates also need vernal pools for survival, such as fairy shrimp and fingernail clams.

5.2 Focal Wildlife Assessment

Focal species included bear, bobcat, moose, river otter, mink, beaver, birds of prey, leopard frog, and wood turtle. These species were identified to act as surrogates to better understand connectivity, habitat quality, and long-term viability of wildlife habitats in light of the effects of fragmentation and land use patterns. In essence, it helps to get a sense of the relative ecological integrity, or health, within Claremont.

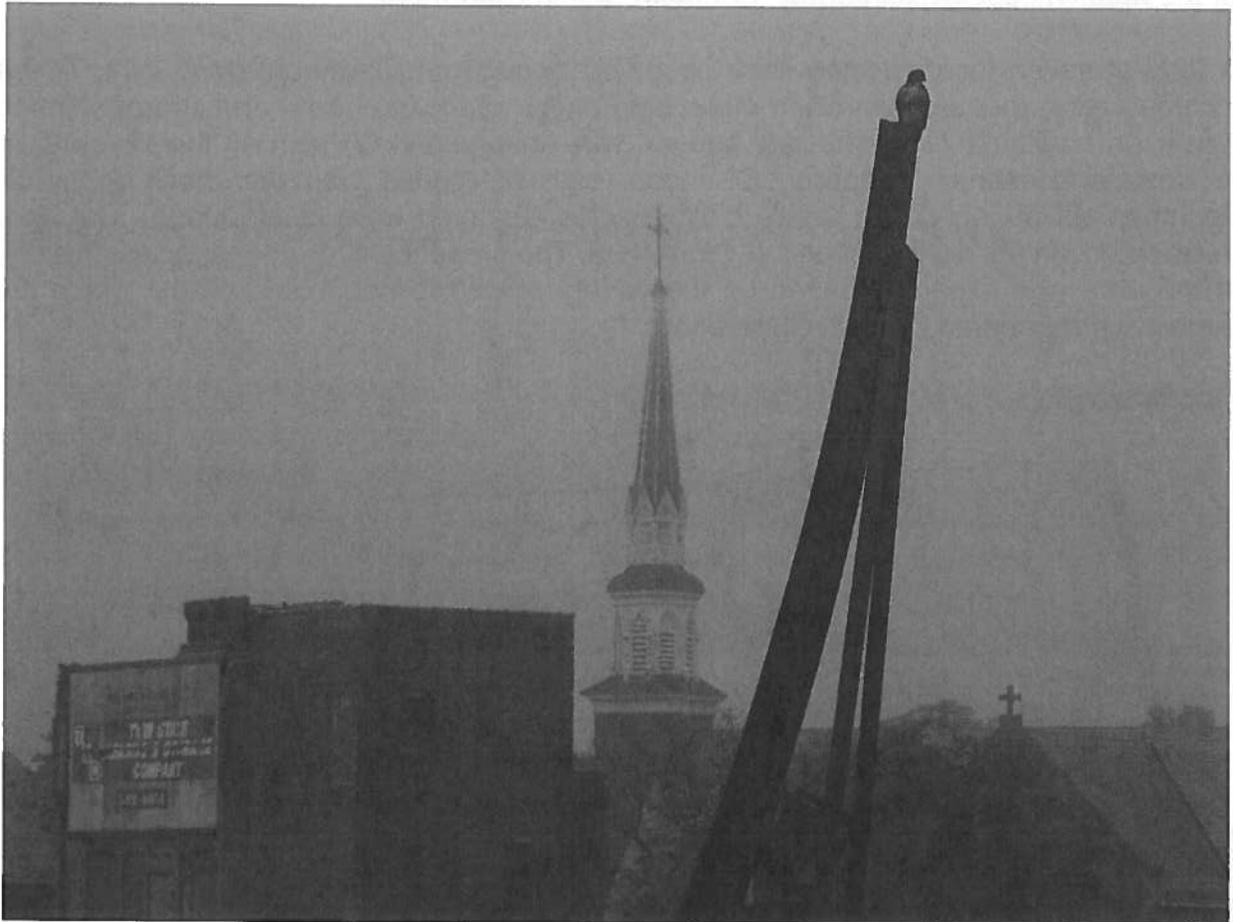
A total of seven focal species were observed throughout Claremont (Map 7-7). These included bear, moose, river otter, mink, bald eagle, red-tailed hawk, and sharp-shinned hawk. An additional focal species, beaver, was observed in Cornish on the city- owned Whitewater Reservoir property. Of these, sign of moose was the most frequently documented. Six out of the seven focal species observed were located in the Cat Hole area located in the northeast part of Claremont. The presence of greater species diversity in the area was expected based on the variety of wildlife habitats available within the largest unfragmented block in Claremont.

Map 7-8 Wildlife Focal Species [NRI pg. 26]



Sign of moose was observed on four city-owned properties, including Arrowhead Forest, Industrial Area Forest, Cat Hole Road Forest, and Whitewater Reservoir. Sign was most abundant on the latter two properties. They are located within the largest unfragmented block in Claremont, and associated with a much larger forested block (48,723 acres) that extends north and east. Moose require large, remote forests with embedded wetlands and can travel long distances in search of food. The Cat Hole area provides the best, high quality habitat and connectivity for moose with its intact forest communities and diverse concentration of numerous wetlands. The other two areas provide limited habitat for moose but do afford decent connectivity possibilities with areas to the south.

Like moose, bear require large areas of intact forests with diverse wetland complexes. They can serve as an umbrella species, whereas protecting prime bear habitat will also protect habitat for a wide variety of species. Bear sign was observed in the Cat Hole area, which provides excellent habitat and a multitude of food sources. Bear sign was also observed next to Fitch Reservoir.



Urban Wildlife- Hawk atop "Ourhandsthenandnow" Sculpture, Visitor Center Park (Credit d. Bearse)

River otter was observed in only one locale in Claremont, primarily along the Connecticut River. However, it is suspected that this species is more widespread in Claremont, including such areas as the wetlands and tributaries in the Cat Hole area and relatively undisturbed parts of Sugar River and other streams. Unlike mink, river otters prefer habitats with little to no human presence, preferring intact riparian buffers. They are strongly associated with beaver, which was only observed on the city-owned Whitewater Reservoir property in Cornish.

American mink are more tolerant of humans than river otter. Mink tracks were observed at Rice Reservoir, Sugar River at Riverside Park, and along a stream associated with the Industrial Area Forest. If an adequate supply of aquatic wildlife is present mink is expected to be found in most parts of Claremont, especially along well-shaded streams with intact riparian areas.

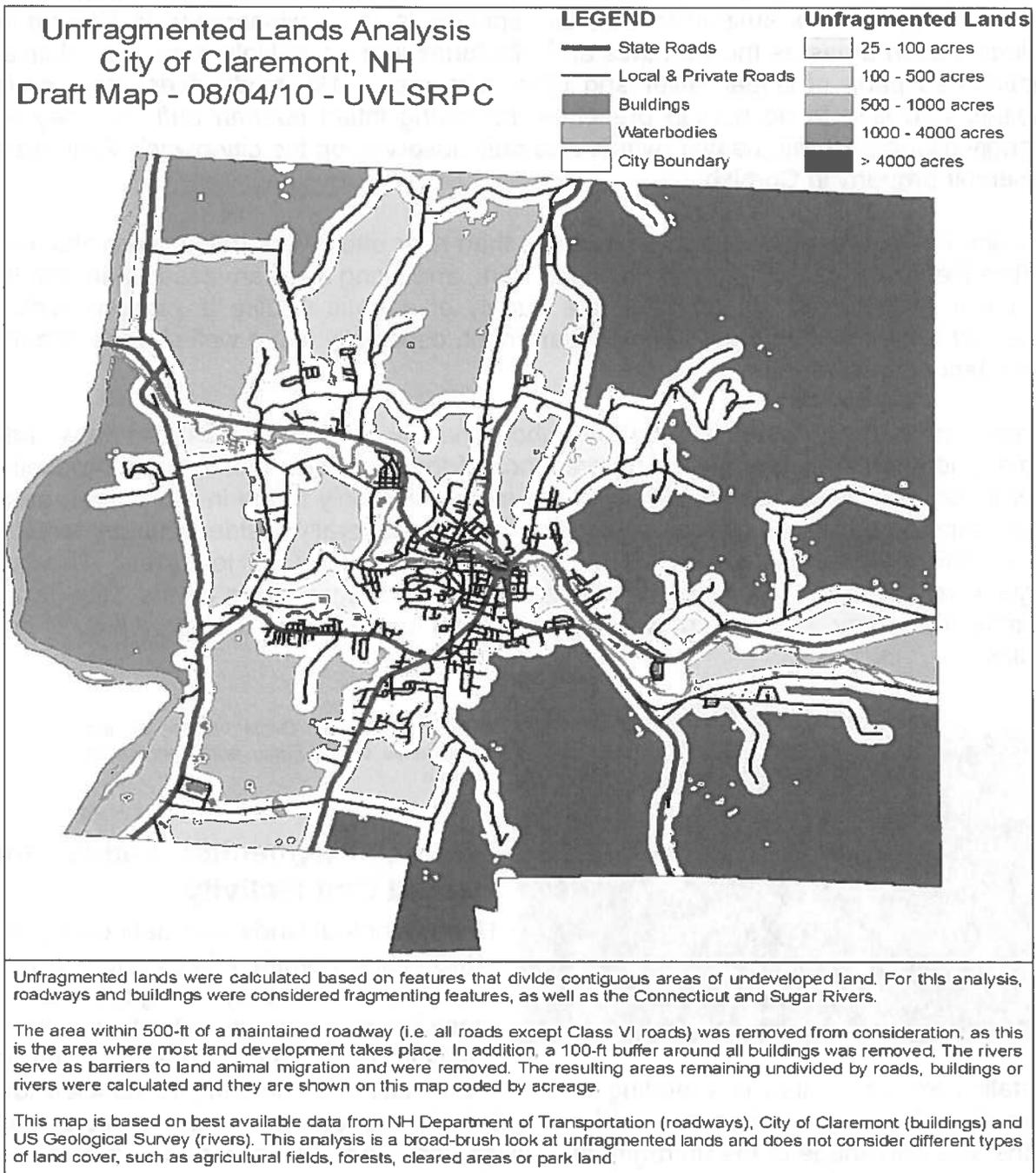
Three birds of prey were observed throughout the City, including red-tailed hawk, bald eagle, and sharp-shinned hawk. The presence of these species can indicate productive habitat for prey. While red-tailed hawks are more commonly found in more open areas sharp-shinned hawks (known as a woodland hawk) generally reside in larger forested areas. This species was located in the southeast and in the Cat Hole area. The bald eagle was observed scanning the dammed area of Sugar River at the City-owned Twistback property. This area provides good habitat for waterfowl, a favored prey of bald eagles.



Photo by Bruce Denis- taken at the confluence of the Sugar and Connecticut Rivers

5.3 Unfragmented Lands and Habitat Connectivity

Unfragmented lands are defined by the surrounding human infrastructure (roads and developed areas). Fragmentation of these blocks can negatively affect species survival rates by increasing outright mortality, lowering rates of breeding success, and ultimately leading to species loss altogether. The degree of severity of fragmentation depends upon many aspects, such as the size and shape of the unfragmented block, the species or community in question, the extent of loss of natural habitats, intensity of human use, and colonization of invasive species.



Map 7-8 Unfragmented Land

The NH Wildlife Action Plan (**WAP**) developed an unfragmented lands analysis. However, this data layer has inherent errors. Therefore, the unfragmented lands were revised for the NRI to more accurately reflect Claremont's landscape (Map 7-8). For the purposes of the Natural Resources Inventory, fragmenting features were defined as 500 feet on either side of existing roadways, including all state and town roads but excluding Class VI roads

and trails, as well as private driveways. It is within this 500-ft wide area that most development occurs.

Unfragmented blocks of land include a variety of natural habitats such as forests, wetlands, streams, and ponds but also can include human-modified areas such as agricultural lands and shrub lands.

Large blocks of unfragmented areas are widely known to support greater biodiversity than smaller blocks. As forest blocks become smaller due to the construction of roadways and developments their biodiversity will generally be reduced. This fragmentation affect has less immediate impact on generalist species or those with small home ranges (such as gray squirrels, raccoon, many amphibians, and small rodents) while affecting and potentially eliminating area-sensitive specialists that need large forested blocks in order to maintain their home ranges and for long-term survival (such as bear, bobcat, moose, some reptiles, wood thrush, and goshawk). Table 7-6 provides a general list for habitat block size requirements for wildlife to help illustrate this point.

Another function of large landscapes considers wildlife movement and habitat connectivity. By maintaining connectivity between critical habitats, it may be possible to provide permanent wildlife corridors within the built environment. Wildlife travel corridors function as areas that one or many species may use to move from one habitat to another. This movement can be based on traveling to various areas for feeding, breeding, nesting, or shelter.

Wildlife must be able to travel safely throughout the landscape in order to meet their biological needs. Many depend upon a variety of habitats for their survival and may utilize many natural features for travel. These may include features such as riparian zones of wetlands, ponds, and streams, ridgelines, utility right-of-ways, and forest patches acting as a safe route between two or more habitats. A variety of wildlife can be associated with these corridors, including otter, muskrat, fox, coyote, bobcat, deer, moose, fisher, mink, and bear.

Wildlife corridors are not only significant for mammals but are equally as important for amphibians, reptiles and migratory birds. Both amphibians and reptiles begin to move from their wintering habitats to their respective breeding and nesting grounds in the spring. This is the time of year that most mortality can be noticed as these species travel across roadways in search of suitable habitats. This affect can often be exacerbated as the same individuals must return back to their wintering habitats. Thus, there is a great significance in maintaining habitat connectivity, as well as understanding where these patterns of movement are taking place.

This latter point can be a very important educational tool for community education and awareness about corridors across road ways. It can provide a means to adjust transportation patterns to help eliminate potential road mortality.

Based on the assessment of focal species and unfragmented lands in Claremont the Cat Hole area provides the most impressive, high quality habitats to support a wide diversity of wildlife. The presence of bear and moose points to this fact. It is suspected that many other focal species are likely present in this area, including beaver, otter, mink, and wood turtle. Winter mammal tracking can also be used to develop an even better understanding of habitat connectivity and quality, especially when assessing roadway crossings.

Land uses that continue to fragment Claremont's landscape, especially those on the outskirts of the city decreases quality, connectivity and long term viability of wildlife habitats and natural communities. Concentrating developments within the built environment and maintaining large unfragmented blocks can help to maintain connectivity, allowing species to continue to travel from habitat to habitat to meet their life cycle needs. Likewise, the use of appropriate culverts at stream crossings can help to maintain connectivity for aquatic-related species such as otter, mink, turtles, and fish.

The urban area of Claremont and various developments along NH Route 103 act as a major barrier for wildlife movement, inhibiting connectivity for many species. Routes 120, 11/12, and 12A also act as fragmenting features that can disrupt wildlife movement. However, the more rural areas of these roads most likely allow for habitat connectivity although they also contribute to road mortality. Moose and bear associated with the Cat Hole area are most likely moving north and east through the landscape, avoiding the more disturbed parts of Claremont to the south and west. Similarly, wildlife movement in the southeast quadrant of Claremont most likely flows south and east, whereas wide-ranging wildlife most likely will avoid the disturbed areas to the west and north. This does not suggest that you will not see these wide-ranging mammals near more disturbed sites but these areas do not provide for their long-term viability.

In general, the western part of Claremont, particularly between Route 12A and Routes 120 and 11/12 are prohibitive for wildlife movement due to the sheer number of roadways and smaller unfragmented blocks. Thus, habitat connectivity in this area has been negatively impacted. As noted above, this does not suggest that wildlife can't travel through parts of this portion of the City but the long-term viability and quality of habitats have been degraded. Clearly, moose and mink are moving through the Industrial Area Forest but it does not provide habitat to sustain productive populations.

The Connecticut River and Sugar River most likely function as corridors for various species, including mink and river otter. However, sign of river otter is likely much less frequently observed along the more heavily disturbed riparian areas of the Sugar River. The eastern and western sections of the river provide good habitat for aquatic-related wildlife.

The presence and rampant spread of invasive plants also has a major negative effect on habitats and communities. Invasive plants displace native species and decrease the ecological integrity of the landscape. Invasive plants are widespread in Claremont and were observed on all properties visited (during development of the NRI), as well as many locations along roads. Disturbance associated with developments, previous agricultural

lands that have since become reforested, and forestry activities can exacerbate the spread of invasive plants unless managed properly.

5.4 Long-term Protection of Wildlife Habitat

Important benefits of protecting wildlife habitat and maintaining biological diversity are:

- Wildlife and its habitat enhance our quality of life and enrich our community.
- Wildlife related activities, such as fishing, hunting and wildlife watching, generate significant economic activity.
- Wildlife and its habitats cannot be supported solely through public acquisition of lands for protection, so local communities and private landowners are critical partners in wildlife conservation.

5.5 Future Challenges and Opportunities



Photo by Gary Dickerman

The Conservation Commission's 2016 Conservation Plan commits to long-term stewardship of the City's wildlife resources in a variety of ways. The City should lend whatever support will be required to assist in the achievement of the Plan's goals. There is ample opportunity to preserve and/or improve wildlife habitat and populations in the City through both regulation and education. In a 2016 survey, 64% of respondents felt that creation and/or protection of wildlife corridors is important for the Conservation Commission to pursue.

Table 7-6 Habitat Block Size Requirements for Wildlife

1-19 Acres	20-99 Acres	100-499 Acres	500-2,500 Acres	>2,500 Acres
raccoon	raccoon hare	raccoon hare	raccoon hare	raccoon hare coyote
small rodent	small rodent porcupine	small rodent porcupine	small rodent porcupine	small rodent porcupine bobcat
cottontail	cottontail beaver	cottontail beaver	cottontail beaver	cottontail beaver black bear
squirrel	squirrel weasel	squirrel weasel mink	squirrel weasel mink	squirrel weasel mink fisher woodchuck
	woodchuck	woodchuck deer	woodchuck deer	woodchuck deer
muskrat	muskrat	muskrat	muskrat moose	muskrat moose
red fox	red fox	red fox	red fox	red fox
songbirds	songbirds	songbirds sharp-shinned hawk	songbirds sharp-shinned hawk bald eagle	songbirds sharp-shinned hawk bald eagle
skunk	skunk	skunk Cooper's hawk harrier broad-winged hawk	skunk Cooper's hawk harrier broad winged hawk goshawk kestrel red-tailed hawk great-horned owl raven barred owl osprey turkey vulture turkey	skunk Cooper's hawk harrier broad-winged hawk goshawk kestrel red-tailed hawk great-horned owl raven barred owl osprey turkey vulture turkey
most reptiles	most reptiles garter snake ring-necked snake	reptiles garter snake ring-necked snake	reptiles garter snake ring-necked snake	reptiles garter snake ring-necked snake
most amphibians	most amphibians	most amphibians wood frog	amphibians wood frog	amphibians wood frog

WILDLIFE RESOURCES

Goal #1 Recognize the value of wildlife resources in the character and quality of life in the City.

Objective 1.1: Adopt a holistic view of natural systems which places human activity within rather than apart from the natural environment.

Actions

1. Wildlife Habitats
 - a. Map vernal Pools and shrub lands
 - b. Work to reduce riparian buffer disturbance to enhance river otter habitat.

2. Long-Term Protection of Wildlife Habitat
 - a. Enhance the natural biological diversity of wildlife habitat in forest, wetland, and open land settings
 - b. Manage with respect to Natural Community type
 - c. Maintain the stability and integrity of the ecosystems within our control
 - d. Develop conservation plan unique to the Cat Hole property
 - e. Assess current level of wildlife resource protection in zoning, subdivision and site plan regulations

Objective 1.2: Adopt management practices that support indigenous habitats and prevent fragmentation so that wildlife can migrate for seasonal food and reproductive needs.

Actions

1. Unfragmented Lands and Habitat Connectivity
 - a. Include protection and/or creation of wildlife corridors in development regulations and in City highway policy
 - b. Work to understand wildlife travel patterns when creating wildlife corridors; adjust transportation patterns to reduce road mortality
 - c. Protect against fragmentation of existing large blocks of undeveloped lands.
 - d. Work with DPW to ensure appropriate culverts are installed where aquatic travel patterns are known.

6 Invasive Species



Norway Maple

An **invasive species** can be any kind of living organism—an amphibian, plant, insect, fish, fungus, bacteria, or even an organism's seeds or eggs—that is not native to an ecosystem and which causes harm. They can harm the environment, the economy or even, human health. (National Wildlife Federation)

A species is invasive when it is **both** nonnative to the ecosystem in which it is found and capable of causing environmental, economic, or human harm. Invasive species often compete so successfully in new ecosystems that they displace native species and disrupt important ecosystem processes. Plants, fish, insects, mammals, birds, and diseases all can be invasive.

6.1 How Species Become Invasive

Often, invasive species owe their success in colonizing new ecosystems to one or more of the following characteristics:

- They tolerate a variety of habitat conditions;
- They grow and reproduce rapidly;
- They compete aggressively for resources (like food, water, and nesting sites)
- They lack natural enemies or pests in the new ecosystem.

Like invasive species in general, invasive plants possess characteristics that make them especially suited for colonizing new ecosystems. Plant-specific characteristics can include invasive plants' ability to:

- Produce abundant, easily dispersed seeds that can withstand adverse conditions
- Reproduce via multiple pathways: roots, stems, and seeds
- Release chemicals that inhibit the growth of or kill surrounding native plants. (US Forest Service)

6.2 Ecological Harm

Invasive plants can reduce biodiversity, imperil rare species, reduce wildlife habitat by eliminating native foods or changing cover or nest sites, degrade water quality, reduce forest and farm crop production, and cause human health problems. They can:

- Displace native species;
- Reduce native wildlife habitat;
- Reduce forest health and productivity;
- Alter ecosystem processes;
- Degrade recreation areas.



Japanese Knotweed

6.3 Invasives in New Hampshire

(From “New Hampshire Guide to Upland Invasive Species”; New Hampshire Department of Agriculture, Markets and Food, Plant Industry Division, 3rd Edition, 2011, Douglas Cygan)

Invasive Upland Plant Species

<u>Common Name</u>	<u>Scientific Name</u>
• Norway Maple	<i>Acer platanoides</i>
• Tree of Heaven	<i>Ailanthus altissima</i>
• Garlic Mustard	<i>Alliaria petiolata</i>
• Japanese Barberry	<i>Berberis thunbergii</i>
• European Barberry	<i>Berberis vulgaris</i>
• Oriental Bittersweet	<i>Celastrus orbiculatus</i>
• Spotted Knapweed	<i>Centaurea biebersteinii</i>
• Black Swallow-Wort	<i>Cynanchum nigrum</i>
• Pale Swallow-Wort	<i>Cynanchum rosicum</i>
• Autumn Olive	<i>Elaeagnus umbellata</i>
• Burning Bush	<i>Euonymus alatus</i>
• Giant Hogweed	<i>Heracleum mantegazzianum</i>
• Dame’s Rocket	<i>Hesperis matronalis</i>
• Perennial Pepperweed	<i>Lepidium latifolium</i>
• Blunt-Leaved Privet	<i>Ligustrum obtusifolium</i>
• Showy Bush Honeysuckle	<i>Lonicera x bella</i>
• Japanese Honeysuckle	<i>Lonicera japonica</i>
• Morrow’s Honeysuckle	<i>Lonicera morrowii</i>
• Tatarian Honeysuckle	<i>Lonicera tatarica</i>
• Japanese Stilt-grass	<i>Microstegium vimineum</i>
• Japanese Knotweed	<i>Polygonum cuspidatum</i>
• Mile-a-Minute Vine	<i>Polygonum perfoliatum</i>
• Bohemian Knotweed	<i>Reynoutria japonica</i>
• Common Buckthorn	<i>Rhamnus cathartica</i>
• Glossy Buckthorn	<i>Rhamnus frangula</i>
• Multiflora Rose	<i>Rosa multiflora</i>

Invasive Insect Species

- Hemlock Woolly Adelgid Adelges tsugae
- Emerald Ash Borer Agrilus planipennis
- Asian Longhorned Beetle Anoplothora glabripennis

Invasive Aquatic Plant Species

- Variable Milfoil Myriophyllum heterophyllum
- Purple Loosestrife Lythrum salicaria
- Common Reed Phragmites australis



Damage caused by Emerald Ash Borer

The State of New Hampshire has 27 plant species on a prohibited list. Some of these are already widespread in our environment, such as burning bush, buckthorns, multiflora rose, bittersweet, and Japanese barberry. For all the plants on this list the rule states: No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties. New Hampshire lists another 24-plant species as restricted. These plants are not yet prohibited, but are exhibiting many of the invasive

plant characteristics. Some of these are also familiar in our landscape including black locust and reed canary grass. The NH Department of Agriculture, Markets & Food¹ regulates the plant industry including invasive species.

¹ Photographs of the invasive species can be found at this site.



Purple Loosestrife

6.4 Invasives in Claremont

Invasive plants are widespread in Claremont and were observed on all properties visited in the making of the NRI, as well as many locations along roads. Disturbance associated with developments, previous agricultural lands that have since become reforested, and forestry activities can exacerbate the spread of invasive plants unless managed properly.

6.5 What Can Be Done

74% of survey respondents think that the City should take a more aggressive role in controlling invasive species on publicly owned lands and roadsides. There are many things that can be done – individually and by the City - to help control the spread of invasive species and preserve native flora and fauna:

- Minimize impacts to natural vegetation, soils, and drainage.
- Learn how to identify invasive plants and know how to tell them apart from native species.
- Control invasives by following recommended practices in all development activities.
- Consult with the County Extension Service about alternative plantings for landscaping projects.
- Become active in local or regional initiatives to control invasives.
- After working in an area with invasive species remove any soil, or propagules that may have adhered to clothing, shoes, vehicle tires, etc.
- Do not collect invasive plants, their seeds, or reproductive bodies
- Control invasive plants in the City
- Manage the growth of ornamental plants on City property
- Avoid driving or recreating in areas where invasive plants grow
- Report invasive plant infestations to your local land management agency (US Forest Service)
- Prevent spread of road-side invasives during routine road maintenance activities.

Glossy Buckthorn



INVASIVE SPECIES

Goal #1 Recognize the harm that invasive species have to indigenous habitats and species in the City.

Objective: Work to reduce the spread of invasive species throughout the City.

Actions

1. Educate the public about invasive species and the damage they cause.
2. Work with DPW to reduce the spread of invasives along roads during routine road maintenance work.
3. Control invasive species on City-owned lands.

7 ECOLOGICALLY SIGNIFICANT AREAS

The final outcome of the NRI was the identification of ecologically significant areas (ESAs) within the community. ESAs are those areas in the City that exhibit unique ecological characteristics that deserve special attention in terms of land use. This further provides a basis for informed land use planning, recognizing that some areas have high ecological value based on the various attributes present.

ESAs were identified using a multitude of factors, including landscape-level and site-specific attributes. These included a combination of unfragmented lands, wildlife movement and habitat connectivity, clustering effect of significant habitats that occur in close proximity to one another, presence and distribution of focal species, wetlands of high value, presence and distribution of rare elemental occurrences and priorities for conservation developed by the Wildlife Action Plan (WAP). These landscape-level considerations aid in a more comprehensive approach that recognizes large-scale habitats and ecological processes within the built and natural environments.

As a result of the **NRI**, **11** ESAs have been identified (Map 10). The map shows the general location of each. These ESAs can serve as a starting point for identifying conservation priorities within Claremont. Below is a brief explanation of the special ecological attributes.

ESA 1 - Cat Hole area (ranked 2nd most important area in City in recent survey¹)

- Largest intact forest associated with a large unfragmented block (48,723 acres) extending beyond Claremont boundary
- Most diverse wildlife habitat aggregation providing excellent habitat connectivity
- Largest high ranked wetland complex (high functionality for ecological integrity and wildlife habitat, maintaining water quality, high flood storage value)
- Largest aggregation of high ranked wetlands

- High quality headwater streams to Redwater Brook
- Numerous sign of multiple focal species (moose, bear, mink, red-tailed hawk, sharp-shinned hawk, grouse)
- Largest intact hardwood forest
- Identified in WAP as containing highest ranked habitat

ESA 2 - Grissom Lane wetland complex (ranked third most important area in the City in a recent survey¹)

- 2nd largest high ranked wetland complex (high functionality for sediment and nutrient trapping)
- Exemplary natural community: red maple-black ash swamp
- Wetland complex provides habitat connectivity to lands to the north where focal species (moose and mink) were observed

ESA 3 - Unity Road wetland complex

- 3rd largest high ranked wetland complex (high value for maintaining water quality and flood storage)
- Large aggregation of grasslands
- Identified in WAP as containing highest ranked habitat
- Located in association with highest yield aquifer for potential water supply

ESA 4 - Sugar River east

- Largest intact wetland complex
- Large aggregation of grasslands adjacent to floodplains
- Identified in WAP as containing highest ranked habitat
- Located in association with highest yield aquifer for potential water supply

ESA 5 - Southeast comer

- Large intact forest associated with a large unfragmented block (13,471 acres) extending beyond Claremont boundary
- Diverse forested habitats providing habitat connectivity to the south and east
- High quality headwater streams
- Focal species present (sharp-shinned hawk)

ESA 6 - Arrowhead Forest area (ranked the most important area in the City in a recent survey¹)

- Large intact forest associated with a large unfragmented block (5,490 acres) extending beyond Claremont boundary
- Presence of focal species
- Diverse habitats providing habitat connectivity to the south
- Presence of 3 high ranked wetlands

ESA 7 - Connecticut River north

- Large aggregation of grasslands adjacent to Connecticut River
- Identified in WAP as containing highest ranked habitat
- Prime agricultural soils currently being farmed

ESA 8 -Twistback area

- Presence of focal species (bald eagle)
- Waterfowl migratory stopover area
- Intact forest buffer along Sugar River
- Diverse wildlife habitats providing habitat connectivity along Sugar River
- High ranked wetland with high value for maintaining water quality and flood storage
- Identified in WAP as containing highest ranked habitat

ESA 9 - Sugar River west

- Intact forest buffer along Sugar River
- Diverse wildlife habitats providing habitat connectivity along Sugar River
- Identified in **WAP** as containing highest ranked habitat
- Exemplary natural community - sycamore floodplain forest

ESA 10 - Connecticut River south

- Largest intact forest buffer along Connecticut River
- Large unfragmented block
- Diverse wildlife habitats providing habitat connectivity along Connecticut River
- Large aggregations of grasslands
- Identified in **WAP** as containing highest ranked habitat
- Presence of 40 known rare species and exemplary natural communities

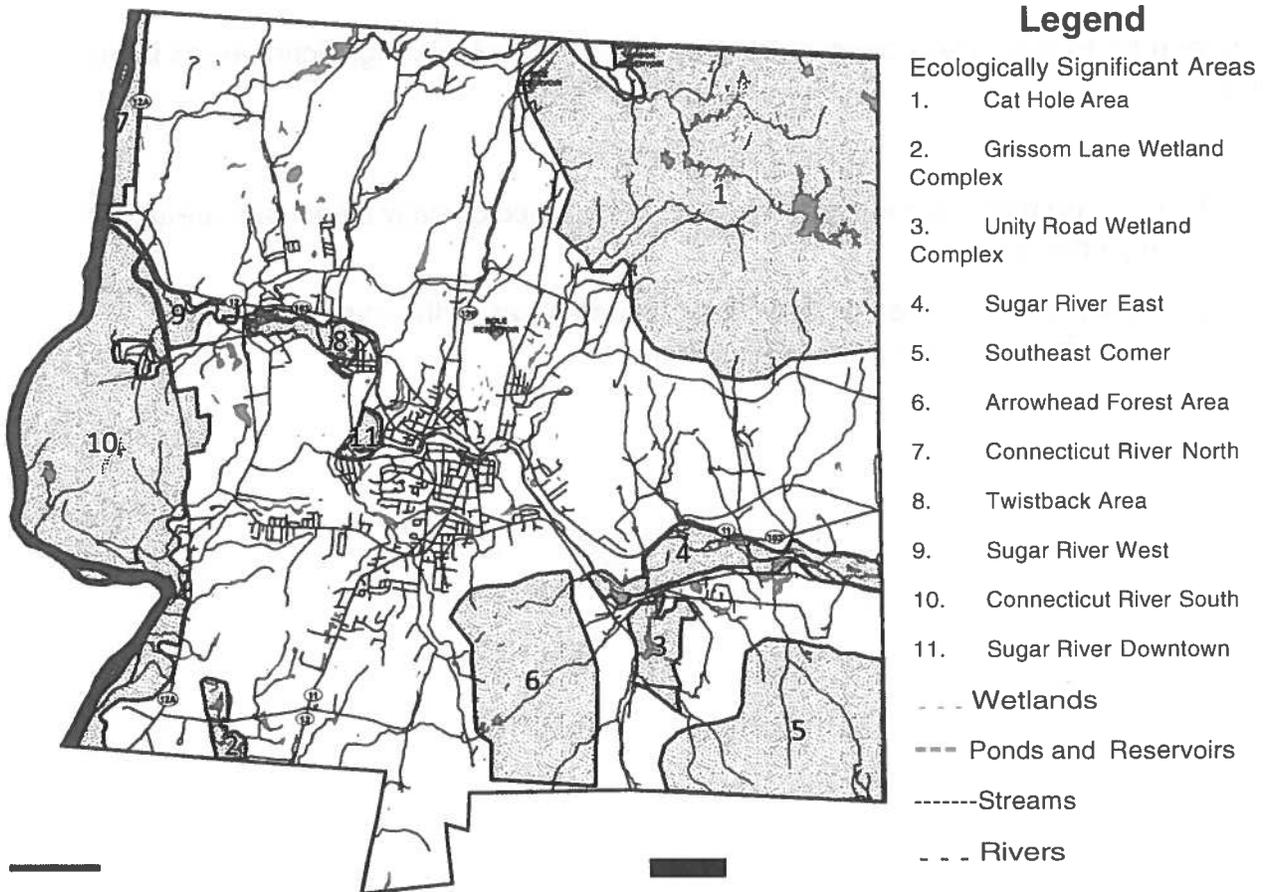
- Presence of 2 high ranked wetlands (both exhibiting excellent ecological integrity and wildlife habitat; one with high flood storage function)

ESA 11 - Sugar River downtown

- Floodplains present providing habitat connectivity along Sugar River
- High quality ranked wetland with moderate flood storage value

¹ Survey conducted at Master Plan Public Forum on March 4, 2016

Map 7-9 Ecologically Significant Areas



Data Sources:

Ecologically significant areas developed by Moosewood Ecological, 2013, based on 2010 aerial photography and site assessments. Unfragmented blocks refined by Moosewood Ecological, sourced from NH Wildlife Action Plan. Refined wetlands developed by Moosewood Ecological, 2013, based on 2010 aerial photography. Streams and rivers from New Hampshire Hydrography Dataset, 2006, US Geological Survey, distributed by NH GRANIT. Roadways from the City of Claremont. Town boundary adjusted to Claremont tax map by UVLSRPC, original data from NH GRANIT.

Disclaimer: Map to be used for planning purposes only. Map not intended for survey purposes. Accuracy of data to be verified by end user. UVLSRPC, Moosewood Ecological, the City of Claremont, NH GRANIT and other data originators or distributors make no claim as to the validity or reliability or to any implied uses of these data.

UPPER VALLEY " SUNAPEE REGIONAL PLA "--1COMMISSION

68% of survey respondents said that these ecologically significant areas should be protected with a combination of outright purchase by the City, landowner education, conservation easements, and zoning/subdivision regulations. The City should consider developing individual management plans for each of the significant areas to ensure their long-term health and preservation.

ECOLOGICALLY SIGNIFICANT AREAS

Goal #1 Recognize the ecological and community significance of each of the ecologically significant areas in the City.

Objective: Protect the ecological integrity of the ecologically significant areas in the City.

Actions:

1. Develop management plans for each of the ecologically significant areas and implement them.
2. Assess current level of protection of these areas in the current zoning, subdivision and site plan regulations.

Chapter VI: Recreation

Vision:

Recreation and culture in Claremont, NH will fill the vital role of improving community health, enhancing quality of life, promoting personal enrichment, preserving natural resources, providing access for all socio-economic groups, and encouraging economic growth. At the heart of recreation in Claremont is the Claremont Parks and Recreation Department, including an expansive offering of programs, facilities, parks, and amenities. The community has repeatedly expressed how vitally important it is to maintain and expand our assets: natural resources and park system, rail trail, Claremont Savings Bank Community Center, Parks and Recreation programs, cultural activities, public art, and athletic courts and fields,

Our Recreation Goals:

- **Promote Health and Wellness**
- **Expand and enhance recreational facilities, parks, trails, and bike paths**
- **Create and implement improved maintenance plans with adequate funding**
- **Enhance recreational and cultural programming**
- **Build strong and effective community partnerships**

Facilities Inventory:

Broad Street Park

The Broad Street Park, located on Broad Street adjacent to City Hall, provides an attractive 0.65-acre of green space adjacent to the central business district. The park facility also stretches up Broad Street to South Street and includes all the green space between the sidewalk and roadway curbing. The park includes historic community structures like the Bandstand, War Monuments for Veterans, and the Freedom Garden Memorial dedicated to the victims and families of September 11th. The park also features seasonal decorations, serves as a community green near City Hall, and is the site of various community events.

Community survey analysis: It is recommended that the City allocate sufficient resources to properly maintain and improve this park, including installation of suitable lighting, fencing and landscaping. Prevention of vandalism and promoting safety should be priorities. The process of reconfiguring and improving the park initiated by the Parks Dept. should be encouraged and continued. The city owned parcel on Barber St., formerly part of the Goodwin Community Center parcel, should be incorporated into the parks system and utilized more extensively for recreational purposes. Various city owned parcels in and around the downtown core should be considered for development as "pocket parks".

Factory Street Park

This small neighborhood park is open to the public with green space and a view of the Sugar River. The Factory Street Park was established in 1978 and is now a 0.35-acre parcel at the corner South Main Street and Factory Street. This park contains benches and landscaping and is located at one of the main gateways into the city.

Community survey analysis: The Parks Dept should initiate and guide a community driven planning process to envision and realize the optimal use of this park. The city owned parcel across Factory St. from this park should be incorporated.

Veterans Park

Veterans Park consists of 18 acres situated along Veterans Park Road and is the site of greenspace, the lighted and newly renovated Bill Baril Memorial Softball Field, playground, and horseshoe pits. It formerly was the home of the John McLane Clark outdoor pool and related facilities.

Community survey analysis: The city owned parcel immediately east of the park should be incorporated and developed, including trail creation and improvement. Pedestrian and bicycle access to the park should be improved. Sufficient resources to properly maintain and improve this park must be allocated. Restroom facilities, expanded and improved parking and a connection to the existing trail network should be constructed. It is recommended that "splash pads" and other similar outdoor water features be installed here and at other appropriate neighborhood park locations. Review the financial and staffing relationship between the Parks Dept and the school system.

LaCasse Park

LaCasse Park was dedicated to the memory of local veteran Oliver LaCasse and the soldiers who fought and died in World War I. This small neighborhood park was originally located on the Sugar River at the end of Lower Cul de Sac Pl off the intersection of Broad and North Sts. It is now located at the corner of North Street and Lincoln Heights. The Memorial Anti Tank Gun is in need of restoration. The PAK-40 75MM Anti Tank Gun was made by Panzer Abwehr Kanor and has been determined to be a historical

piece of armor built in Germany and was captured by American forces and returned to the United States. Date and time is unknown.

Community survey analysis: The original location should be redeveloped and incorporated into the Visitor Center parcel. The area around the cannon should be enhanced with seating, lighting, shelter, signage and landscaping.

Visitor Center Green

Visitor Center Green is located along the Sugar River near the Claremont Visitor Center at 14 North Street. This property is approximately 7 acres with nearly 1,400 feet of Sugar River shoreline and ample parking. Included are an expansive river overlook, pedestrian facilities, open space, and pedestrian connections across the Sugar River to the Mill District and downtown, North Street, and Spring Street. The green space is currently used for passive recreation, hosts many special community events and functions and is the home of Our Hands-Then and Now, a sculpture commemorating the 250th anniversary of Claremont. The city obtained an exemption for this stretch of river from the provisions of the Shoreland Water Quality Protection Act (NH RSA 483-B), allowing for more efficient development of the Sugar River water front in the down town core.

Community survey analysis: Improved lighting, electrical power, restrooms and a water supply should be provided. This area is becoming a venue for public art, concerts, community festivals and cultural events. This "identity" should be encouraged and supported with proper planning, improvements, maintenance and allocation of resources. It is recommended that a partnership with the library be initiated regarding this park. Administrative jurisdiction over the Green and the Visitors Center should be clarified. Safety and security must be priorities for improvements. The adjacent "gas company" and original Lacasse Park properties should be incorporated into the Green. A permanent bandshell and/or stage should be constructed at an appropriate location within the expanded Green. Construct walking/bicycle paths throughout the parcel. Create an advisory committee to oversee and direct the use, maintenance and improvement of this park. This committee would consist of citizens with particular interest in this facility and would be directed and overseen by the Director. Address invasive plant species throughout this parcel.

Sarah B.H. Smith Riverside Park

The Sara B.H. Smith Riverside Park is located adjacent to the Washington Street/North Street intersection near the downtown. This park is approximately 2.6 acres in size with 470 linear feet of Sugar River shoreline. The park facilities include a skate park, the Jason W. Hagerman Memorial Pavilion and open space for passive recreation.

Community survey analysis: It is recommended that the City allocate sufficient resources to properly maintain and improve this park. Create better pedestrian and bicycle access to the park.

Moody Park

In March of 1916, William H.H. Moody, a retired Claremont Businessman, donated the land known as Moody Park. Moody's gift to the City was described at the time as "a donation, for use as a public park and recreation ground, to be [enjoyed] for free by the people of Claremont." The Moody Park property offers spectacular views, picnic areas and a pavilion, a playground, tennis courts, a seasonal ice skating rink, a paved road, and an extensive hiking, running and biking trail network as illustrated in Figure []. The park is open to vehicular traffic Memorial Day to Columbus Day (only on weekends after Labor Day) and is open only to hiking, biking, and skiing during the winter. In the late 1800's, Mr. Moody built and operated a horse racing facility adjacent to Moody Park on land which now contains Maple Avenue School and surrounding housing. This facility hosted Stevens High School track meets as well as motorcycle and automobile racing.

With the recent inclusion of an adjacent city owned parcel, Moody Park is approximately 229 acres and abuts another city owned parcel of 81 acres. Figure []). This aggregated collection of City properties results in a 310-acre, City-owned open space available for outdoor recreation opportunities.

Extensive forest management has been conducted throughout the park resulting in a much healthier forest and improved visitor experience. The funds generated by the logging allowed for the construction of the initial phase of a comprehensive trail network.

Figure []: Overall Facilities Map for Moody Park and Adjacent City Land

Community survey analysis: Continue to create, improve and maintain the pedestrian/bicycle trail network. Address invasive plant species throughout this parcel. It is recommended that the City allocate sufficient resources to properly maintain and improve this park. Create an advisory committee to oversee and direct the use, maintenance and improvement of this park. This committee would consist of citizens with particular interest in this facility and would be directed and overseen by the Director. Address any issues necessary to allow year-round vehicular access to the park.

Arrowhead Recreation Area

The Arrowhead Recreation Area is a 204-acre parcel with access from South Street along Robert Easter Way. This parcel is the site for many Parks & Recreation Department programs. This site abuts the Claremont Middle School and the Sugar River Valley Regional Technical Center and is across the street from the Community Center.

The Arrowhead Recreation Area also hosts ski, snowboard, and snowtube slopes with rope tow service and snow making capacity. The Arrowhead Recreation Club (<http://www.arrowheadnh.com/>) manages these winter operations. The ski slopes opened in 1962 named King's Arrow, in association with a local hotel. From approximately 1979 to 1990 the facility was leased to and operated by the Kiwanis Club. In 2001 the Arrowhead Recreation Club was founded and the facility has been operational in many forms since that time. Figure [] illustrates the current open and out of bounds trails for the ski area.

Figure []: Trail Map for Arrowhead Recreation Area

Community survey analysis: Create an advisory committee to oversee and direct the use, maintenance and improvement of this park. This committee would consist of citizens with particular interest in this facility and would be directed and overseen by the Director. Encourage and support a strong volunteer effort. Improve marketing, promotion and community awareness of the facility. Create and support year-round, sustainable programming. It is recommended that the City allocate sufficient resources to properly maintain and improve this park.

Barnes Park

Barnes Park is located on North Street near the intersection of Elm St. It is home to many high school and other sporting events. The parcel is approximately 7.4 acres including lighted playing fields, a playground, two lighted basketball courts, and bleachers that also house the existing Parks & Recreation Department equipment. During winter months there is a skating rink and warming hut in the park. This facility serves as a neighborhood park and a significant community recreation resource for year-round activities.

Community survey analysis: Improve and construct restroom facilities. Review the financial and staffing relationship between the Parks Dept and the school system. Install bleachers on “the Hill”. Incorporate surrounding city owned parcels into accessory use for Barnes Park. Consider this park as a location for a splash pad or other water feature. Address the need for repair and improvement to the grandstand, including the need for team dressing rooms and related facilities. Improve the parking lot. Create an advisory committee to oversee and direct the use, maintenance and improvement of this park. This committee would consist of citizens with particular interest in this facility and would be directed and overseen by the Director.

Monadnock Park

Monadnock Park is located close to downtown with access from Broad Street and Chestnut Street. The parcel is approximately 21 acres with 2.75 acres of city-owned wetlands abutting the parcel. The Monadnock Park abuts the city-owned rail trail that connects with other local and regional trail systems. The park facilities include playground equipment, tennis courts, a storage building, and a wide range of playing fields including football, regulation and little league baseball fields, a rubberized surface track and field complex (constructed through private donations), a multi-purpose field, and a softball field. Like other City Parks, Monadnock Park is the site of Claremont School District athletic program practices and competitions.

Community survey analysis: Review the financial and staffing relationship between the Parks Dept and the school system. Improve and construct restroom facilities. It is recommended that the City allocate sufficient resources to properly maintain and improve this park. Complete the process of incorporating

a portion of the adjacent farm field into the park and developing connections to the rail trail. Demolish and either reconstruct or relocate the tennis courts. Replace and relocate the play structure. Address invasive plant species throughout this parcel. The rubberized track surface is in need of replacement. Consider this park as a location for a splash pad or other water feature.

Ashley's Landing

The Col. Ashley Ferry Boat Landing, at the end of Ferry Landing Road, which is off of River Road in western Claremont, provides the only public access to the Connecticut River in the City. Facilities on the 2.1-acre site include a boat ramp, parking area, and opportunities for passive recreation. The parcel has approximately 940 linear feet of Connecticut River shoreline.

Community survey analysis: The Parks Department should establish a comprehensive relationship of collaboration regarding this venue with the relevant state or federal agencies having jurisdiction over this area.

Claremont Savings Bank Community Center

The Claremont Savings Bank Community Center (CSBCC) opened its doors in March of 2013 to replace the aging Goodwin Community Center that was established in 1942. The CSBCC is located at 152 South Street across the street from the Claremont Middle School, the Sugar River Technical Center and Arrowhead Recreation Area. The property abuts the rail trail that runs behind the building and connects to Monadnock Park, which is just a short walk from the building. The CSBCC supports itself primarily with revenue from facility rentals and program and user fees supplemented by taxpayer funds.

The CSBCC is a 52,000 square foot, state of the art building. It houses a gymnasium with 1 full size basketball/futsal court that divides into 2 small sided basketball courts, has 6 adjustable hoops, 2 volleyball and 3 pickle ball courts. The Fitness/Wellness center has a full line of cardiovascular machines and free weights in addition to specialized equipment with total access features. The aerobics room is part of the grand function community room space with a rubber sports flooring. The indoor walking/jogging track has 3 lanes for exercise where 14 laps equal one mile. The aquatic center includes an 8-lane, 25-yard competition pool and a small lesson/exercise pool that goes from 2 feet deep to 4 feet deep. This facility includes both a men's and women's locker room facility that includes lockers and showers. The CSBCC also has multi-function rooms. The one on the main floor can either be 2 smaller rooms or one large room and there is a room off of the pool that hosts a number of various activities. Since its opening, usage has steadily increased each year.

Community survey analysis: Continue to develop non-sports related programming for all ages. Improve access to expanded parking, including lighting, crosswalks and safety measures. The City should consider adding staff positions at the CSBCC to properly respond to the growing demand for programming and activities. It is recommended that the City allocate sufficient resources to properly maintain and improve this facility. Create a formal connection to the rail trail from the rear of the building. Expand and encourage the volunteer base. Create, enhance and develop promotional activities, marketing and a social media presence, including the creation of a paid staff position for this

purpose. Develop and expand after school activities and a formal programming relationship with the school district. Develop programming and initiatives to attract and include economically disadvantaged residents. It is recommended that a formal partnership with the library be developed focusing on shared recreational opportunities.

Rail Trail

The City of Claremont acquired a portion of the abandoned Boston and Maine railroad bed in 1998, running from Pleasant St. across from Lavalley's Building Supply to Broad St. to Chestnut St. to Washington St. and ending at the metal gate approximately one quarter mile east of Home Depot. The Rail Trail from that point east to Newport is owned and maintained by the state. The city owned corridor is approximately 70 to 80 feet wide according to the railroad valuation survey map. The Federal Highway Administration has confirmed that the funding source for the purchase (ISTEA) prohibits motorized wheeled vehicles on any trail acquired with those funds. It is recognized that rail trail assets should be considered and utilized to be long, narrow parks.

Community survey analysis: Transfer "jurisdiction" over the rail trail from the Conservation Commission to the Parks and Rec Dept. Continue with the rail trail enhancements and improvements included in the East St reconstruction. Pave the entire trail. Install and maintain amenities such as seating, lighting, signage, shelters, crossing safety and landscaping. It is recommended that the City allocate sufficient resources to properly maintain and improve this facility. Safety and security should be priorities.

Community Attitudes:

The Recreation Department conducted a Needs Assessment Study for its facility planning in 2001 and the City of Claremont conducted a broader Community Attitude Survey in 2008 as part of the master planning effort. The following tables summarize the community responses to these surveys.

2001 Recreation Needs Assessment Study

The City Recreation Department conducted this survey to help determine citizen usage, needs, and priorities for the parks and recreation system. The scope of this survey ranged from perceived quality of recreation facilities in the City to stated needs and preferences for new or renovated facilities. The following bullets summarize community attitudes about existing facilities at the time of the survey.

- Half of the responding households participating in recreational programs. 89% of the participating programs responded that the programs were Excellent (32%) or Good (57%).
- 78% of responding households stated that they had visited a park in the last year. 75% of those respondents rated parks as Excellent (20%) or Good (55%).
- The most popular programs included Art/Theater/Outdoor Concerts, Recreational Swimming, Special Events, Youth Basketball & Baseball, Youth Swim Lessons, and Walking Programs.
- The most popular facilities included trails, neighborhood parks, playgrounds, and indoor facilities.

2008 Community Attitude Survey

The City's Community Attitude Survey addressed a broad range of City services, facilities, and regulations. The survey also requested opinions regarding future land use and funding options. The following tables summarize survey responses relevant to recreational facilities.

Table []: Public Opinion - Importance of City Attributes

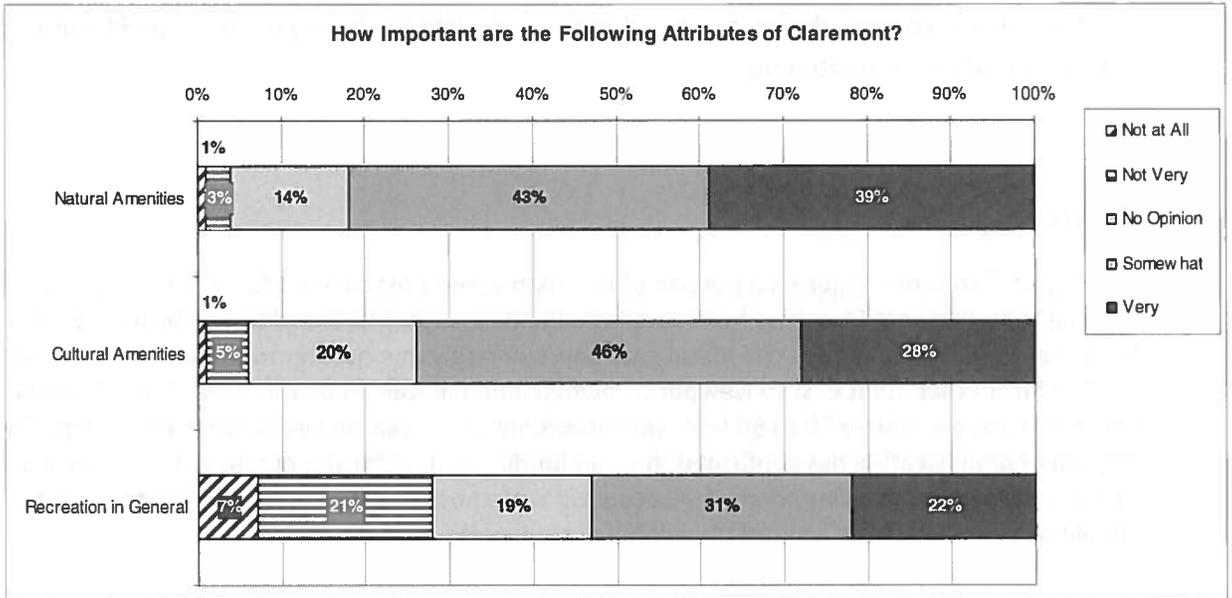
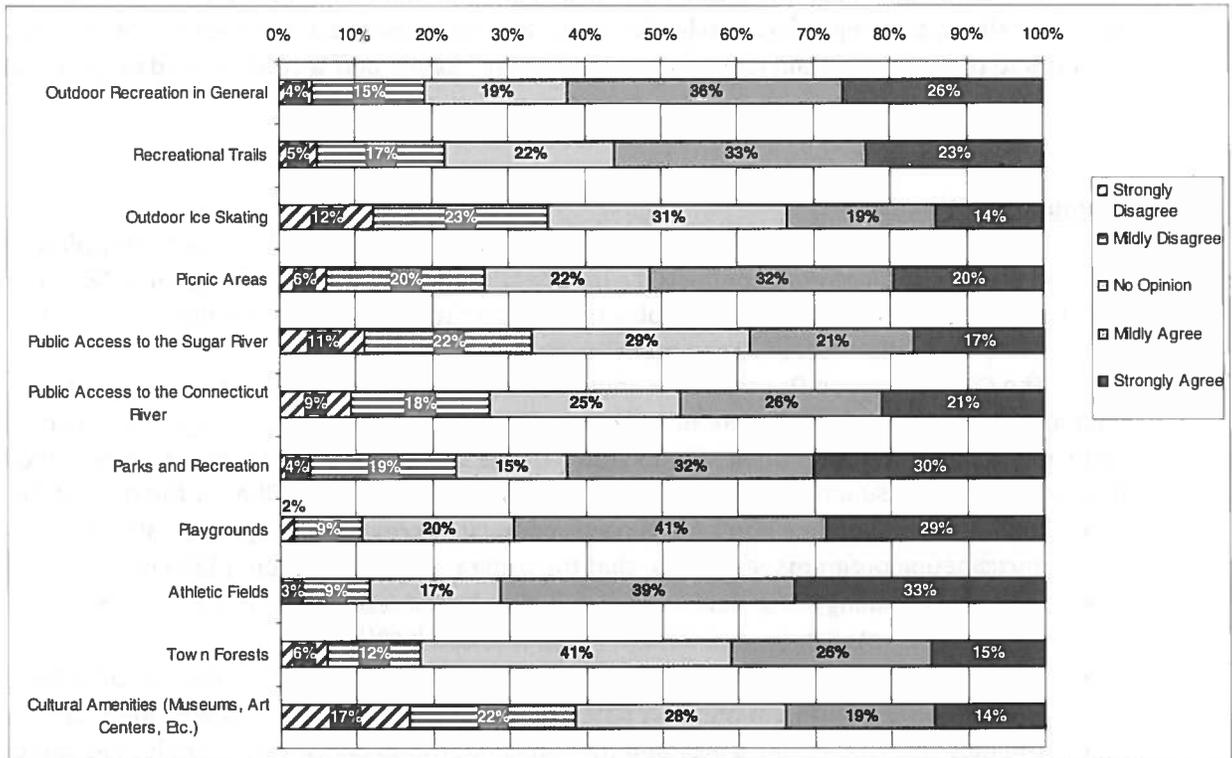


Table []: Public Opinion - Sufficiency of Funding for Recreational Facilities and Programs



2016 master plan survey:

Survey work conducted in connection with the 2016/17 master plan revisions reaffirmed the strong community support in Claremont for recreation and culture.

1. The Claremont Savings Bank Community Center was identified as one of the top reasons citizens “like living in Claremont.”
2. Enhancing arts and culture was identified as one of the top areas citizens “would like to change about Claremont.”
3. The vast majority of respondents have personally utilized park facilities and rate the condition as either fair, good or excellent. Security and restroom facilities were identified as priorities for improvement.
4. Pedestrian and bike access and safety were identified as areas needing improvement.

GOALS, OBJECTIVES AND RECOMMENDATIONS:

Goal 1: Promote Health and Wellness in our community

1. Take the steps necessary to again become a Tree City.
<https://www.arboday.org/programs/treecityusa/about.cfm>
2. Take the steps necessary to make Claremont, especially the downtown core, a pedestrian and bicycle friendly community, including the maintenance, improvement and creation of biking and walking trails.
3. Prevention of vandalism and promoting safety should be priorities.
4. Maintain and improve pedestrian and bicycle access to all parks and facilities.
5. Address invasive plant species throughout the park system.
6. Enhance public spaces with public art that will delight, engage, and inspire

Goal 2: Expand and enhance recreational facilities, parks, trails, and bike paths to encourage additional use opportunities

1. Develop “pocket parks” in appropriate city owned lots.
2. Construct and properly maintain splash pads and other water features at appropriate venues around the city.
3. install suitable lighting, fencing, landscaping and comfort facilities as appropriate throughout the parks system.
4. The process of reconfiguring and improving Broad St. park initiated by the Parks Dept. should be encouraged and continued.

5. Any available property adjacent to any park should be considered for addition to the park system.
6. Visitor Center Green
 - a. Installation of lighting, electrical power, restrooms and a water supply.
 - b. This area is becoming a venue for public art, concerts, community festivals and cultural events. This “identity” should be encouraged and supported with proper planning, improvements, maintenance and allocation of resources.
 - c. Clarify administrative jurisdiction over the Green and the Visitors Center.
 - d. Improve safety and security.
 - e. Construct a permanent bandshell and/or stage at an appropriate location within the expanded Green.
 - f. Incorporate the adjacent “gas company” property and the original Lacasse Park into the Green.
 - g. Construct walking/bicycle paths throughout the parcel.
7. Improve the access to parking throughout the parks system, including lighting, crosswalks and safety measures.
8. Rail Trail
 - a. Create a formal connection to the rail trail from the rear of the CSBCC.
 - b. Transfer “jurisdiction” over the rail trail from the Conservation Commission to the Parks and Rec Dept.
 - c. Continue with the rail trail enhancements and improvements included in the East St reconstruction.
 - d. Pave the entire trail.
 - e. Install and maintain amenities such as seating, lighting, signage, shelters, crossing safety and landscaping.
 - f. Develop any necessary improvements so that the trail is safe and secure, and is perceived to be so, for all users.

Goal 3: Create and implement improved maintenance plans with adequate funding that will protect our assets for long term community use

1. It is recommended that the City allocate sufficient staff and resources to properly maintain and improve recreational programming, facilities, parks and the community center.
2. Replace the rubberized track surface in Monadnock Park.

Goal 4: Enhance recreation and cultural programming to meet the needs of the residents of Claremont and surrounding communities

1. Create, develop and support year-round, sustainable programming for all ages, including non-sports related programming.
2. Develop and expand after school activities and a formal programming relationship with the school district.
3. Develop programming and initiatives to attract and include economically disadvantaged residents.

4. Allocate sufficient staffing and resources to meet this programming goal.
5. Recognize and develop the role culture(especially art, music and literacy) has within the larger recreational context through programming and activities.
6. Fund, develop and properly staff a marketing, promotional and public awareness strategy, including the use of social media.

Goal 5: Build strong partnerships that further the high standards needed for Claremont programs and facilities

1. The Parks Dept should initiate and guide a community driven planning process to envision and realize the optimal use of Moody Park, Visitors Center Green, Factory St. Park and the city owned parcel behind the old community center.
2. Create separate advisory committees to promote, oversee and direct the use, maintenance and improvement of Moody Park, Arrowhead, Barnes park and the Visitor Center Green. These committees would consist of members of the Parks and Recreation Advisory Committee along with citizens with particular interest in the facility and would be directed and overseen by the Director.
3. Develop, encourage and support a strong volunteer effort throughout the entire parks and recreation system.
4. Review the financial and staffing relationship between the Parks Dept and the school system.
5. Develop a formal, collaborative relationship with the library focused on co-developing suitable programming within the larger recreational context.
6. The Parks Department should establish a comprehensive relationship of collaboration regarding Ashley's Landing with the relevant state or federal agencies having jurisdiction over this area.
7. The Parks Dept. and the Claremont School system should develop a comprehensive, formal relationship regarding programming, facilities, staffing and shared resources.

