Town of Raymond Open Space Plan
Prepared For the Town of Raymond Planning Board and Board of Selectmen

Prepared by the Raymond Conservation Commission

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Cover Photo:
Onway Lake

Raymond Open Space Plan
This Report has been prepared for the Town of Raymond Planning Board and Board of Selectmen

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Executive Summary

The Raymond Open Space Plan was developed as a tool for future open space management planning and serves as an update to the Open Space Plan adopted in 2003. When the Town of Raymond moves forward to buy, make plans for existing open space within the town, or review parcels for future development, this plan will help determine the best parcels to be used for each situation. It will also act as a way to ensure that the open space within the town will be maintained so that it benefits the high quality of life for all residents.

Section 1, Introduction

Foreword

This Open Space Plan has been prepared by the Town of Raymond's Conservation Commission (RCC) with funding and technical assistance provided through the I-93 Community Technical Assistance Program (CTAP)[1] and the Southern New Hampshire Planning Commission (SNHPC).

This report should be considered and accepted by the Planning Board and Board of Selectmen as the Town of Raymond's official Open Space Plan. This plan can be adopted as a stand alone document, or as part of the Town's Master Plan.

An Open Space Plan contains policies and actions that will assist the town with future development, while also encouraging town leaders to promote open space protection. The plan is also an inventory of the environmental features in the community, including water, soil, habitat, forests, and a number of other elements. When these elements are layered over each other, the areas with the highest potential for open space protection become apparent. The plan helps identify and prioritize the town's natural resources and provides options in protecting these key properties.

The following quote from the 2009 Raymond Master Plan, ("Natural Resources") reinforces the importance of open space to the residents or Raymond:

> "Open space will be preserved strategically throughout Raymond to create wildlife corridors and nature paths for walkers and bikers by linking open space, woods, and park areas. Preservation and wise land use policies will also protect the Town of Raymond's water bodies and waterways, its public wells and aquifers."

The Town of Raymond, town officials, along with the Planning Board and Conservation Commission and other boards and committees, should look to this Open Space Plan to

[1] CTAP – The Community Technical Assistance Program (CTAP) is a New Hampshire Department of Transportation (NHDOT) 5 year initiative to assist 26 communities that will be affected by rebuilding and expansion of Interstate 93 by providing technical assistance and access to tools for innovative land-use planning. These 26 communities include Allenstown, Atkinson, Auburn, Bedford, Bow, Candia, Chester, Concord, Danville, Deerfield, Raymond, Dunbarton, Fremont, Goffstown, Hampstead, Hooksett, Hudson, Litchfield, LondonRaymond, Manchester, Pelham, Raymond, Salem, and Sandown. For more details, go to the CTAP website at www.nhctap.com.

guide the future open space planning and protection actions of the Town, particularly as various modes of protection, (voluntary, regulatory or land acquisition) are implemented.

In the development of this Open Space Plan, the charge to the Conservation Commission was:

> "The Raymond Conservation Commission shall identify and develop a prioritized list of agricultural, open, and undeveloped land that should be protected from residential, commercial and industrial growth to preserve the Town's natural and cultural resources and, agricultural character and quality of life. In subsequent efforts, the Conservation Commission shall, in collaboration with other Town Boards, Commissions and staff, undertake other tasks identified in the Raymond Master Plan aimed at implementing the protection of the lands identified."

Background

This open space plan can be viewed as a guide for the community to recognize the need for preservation of open lands. Open space planning in New Hampshire is an ongoing activity that is conducted mainly through the work of the Conservation Commission and Planning Board.

In preparing this plan, the Raymond Conservation Commission met six times during 2010 on the following dates: March 3rd, March 31st, April 21st, May 5th, June 2nd and August 4th. These meetings were part of the Conservation Commission regular meetings and were open to the public.

The first effort of the Raymond Conservation Commission was to identify the natural resources and important natural and cultural features of the town's landscape and to assign relative values to these various resources through the Delphi Process as explained further in Section 2. Mapping these resources throughout the community provides a delineation of the town's natural resource network or "green infrastructure". As key parcels are identified from this network, the Conservation Commission has suggested strategies and priorities to guide Raymond's future open space protection efforts. The estimated cost associated with protecting these lands is also determined.

This report is organized into the following five sections including this Introduction, Plan Development, Priorities, Financial Planning, and Recommendations. The entire list of parcels that contribute to Raymond's open space is available in electronic form from the Southern New Hampshire Planning Commission.

Raymond Forest Stewardship Plan

A forest stewardship plan addresses fish and wildlife habitat, water resources, recreation, forest protection, soils, timber, wetlands, aesthetic values, cultural features, and endangered species.

Besides giving management direction, a plan is necessary for certain current use assessment categories and for certified tree farm status.

During 2001, the Raymond Conservation Commission hired a licensed forester to develop a Forest Stewardship Plan. Raymond has three certified tree farms totaling 476 acres, or 3.8% of the open lands, that are part of the New Hampshire Tree Farm Program.

The forester reported in some instances that much of the older mature stands of trees had been cut, and it would take approximately 40 to 50 years for the younger trees to be ready for harvest. However, this could mean that the Town Forest would be best suited for wildlife habitat or recreation since it will not be economically productive to harvest wood for a number of years.

The following is a brief summary of the forester's report for the Town of Raymond:

1. Dearborn lot, 304 acres: Walking access is available to this lot, which makes it easier to utilize from an outdoor recreationist's point of view. Extensive sections are in-accessible for forest management, which represents a large block of public open space. This lot has excellent potential for backcountry recreational use.

2. Town ballfield and well, 104 acres: This area contains mediocre forest growth, along with an abundance of invasive species. The best use of this property would be as a conservation and recreation area.

3. Lamprey River Elementary School, town beach, and scenic forest area, 38 acres: The best use for this property would be as an educational opportunity for students.

4. Industrial Drive lots, 42 acres: Timber quality is high, with enough volume to manage with periodic improvement cuts. Preservation of these and adjacent parcels from development will help retain the integrity of the green space block. The town should consider purchasing or negotiating conservation easements on the adjacent properties to the east if possible.

5. Cassier lot, 371 acres: This lot holds considerable open space value and is an integral parcel in one of the largest open space blocks remaining in Town. A minor commercial harvest may be possible in 40-50 years.

6. Bald Hill Road lot, 50 acres: As part of a reasonably large block of open land, the parcel is worth protecting. Explore the possibility of working with landowners south and west of this parcel to establish conservation easements to protect lands in the Marden Brook area.

7. Chetague/Lane roads, four parcels (two large), 156 acres: This area has good long-term potential for forest management, has extensive wetland habitats, and is a highly valuable area to wildlife. These parcels represent a large block of open space that lies contiguous to an even larger open space area in Candia and Chester.

Thus, many of the forested areas are either: a number of years away from commercial management; contain good habitat for local and migrating wildlife; and serve well for

recreation and scenic value. Adjacent areas may be considered for either purchase or conservation easements to enhance the existing natural resource.

Population Growth, Sprawl and Smart Growth Choices: How They Affect Open Space Protection

Population Growth in New Hampshire and Raymond

Since 1950, the population of New Hampshire has grown from 533,110 persons to 1,316,470 (2010 Census), an increase of over 100%. Raymond's population growth between 1950 and 2000 has grown from 1,428 persons to 9,674, an increase of *over 550%*.[2] The Office of State Planning has projected additional population increases for Raymond of approximately 29% from 2000 to 2010, and 21% from 2010 to 2020, with expected populations of 12,490 and 15,059 respectively during those years.

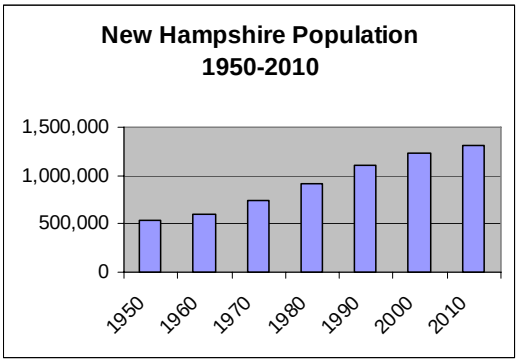


Table 1 – Population Growth in New Hampshire

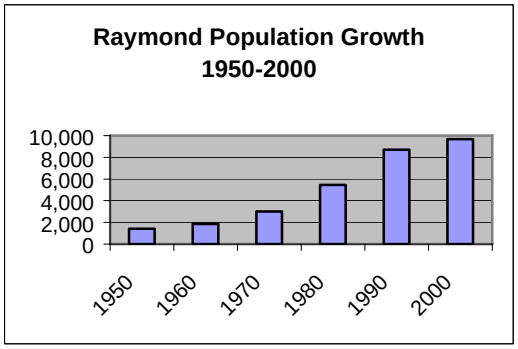


Table 2 – Population Growth in Raymond, NH

Planning for future growth is not an easy task, since open space conservation must be balanced with inevitable population increases. Changes in allowable population densities, zoning and subdivision regulations may be needed in order to allow for growth that will be here in the future.

[2] U.S. Census, 1950-2010.

Sprawl: The Number One Enemy of Open Space

In the document titled *Sprawl and Smart Growth Choices for Southern New Hampshire Communities,* produced by SNHPC, it is estimated that the consumption of residential land within the 13 communities in the SNHPC region exceeded what was needed for population growth. From 1986 to 2000, residential acreage was consumed at *twice* the population growth rate, and commercial acreage was consumed at *three times* the population growth rate. In 1982, New Hampshire had 0.41 developed acres per person, and by 1997, that figure had increased to 0.55 developed acres per person. These figures are higher than those for New England as well as those for the United States as a whole.[3]

During the past 20 years, many communities in New England required larger lots in their zoning ordinances for single family homes than were really necessary. The logic at that time was that if larger lots were required, fewer homes would be built, which would decrease sprawl and its accompanying traffic problems. However, municipalities have since learned that large lot zoning resulted in the development of tracts of land that would never again be useful for open space or other common public areas.

Sprawl has been and will continue to be a problem for most communities. Many towns have developed both regulatory and non-regulatory answers to encourage more compact, less sprawling development.

Smart Growth

During the past ten years, a number of books and articles have been written on the topic of "smart growth." Many communities throughout New Hampshire have begun to embrace this concept, with promising results.

Getting to Smart Growth: 100 Policies for Implementation[4] presents a series of ten smart growth principles along with ten policies for each principle.

1. Mix land uses
2. Take advantage of compact building design
3. Create a range of housing opportunities and choices
4. Create walkable neighborhoods
5. Foster distinctive, attractive communities with a strong sense of place
6. Preserve open space, farmland, natural beauty, and critical environmental areas
7. Strengthen and direct development towards existing communities
8. Provide a variety of transportation choices
9. Make development decisions predictable, fair, and cost effective
10. Encourage community and stakeholder collaboration in development decisions

[3] State of New Hampshire, Environment 2000.
[4] Smart Growth Network available at www.smartgrowth.org

While some of these principles may not work for Raymond at this time, several have been tried in other communities in this area with great success. The following are a few principles that could be applied in Raymond:

Principle 1: Mix land uses. This principle has worked for a number of years in the village area, with residential, commercial and government uses working together. Places that are accessible by bike and foot can create vibrant and diverse communities. Separate uses tend to exact social costs by fundamentally changing the character of communities and undermining the viability of opportunities for people who walk to shops or work, and to meet and chat with their neighbors on the way. Smart growth supports the integration of mixed land uses into communities as a critical component of achieving better places to live.

Principle 3: Create a range of housing opportunities and choices. Raymond has a good head start in this area with its mix of lower-income units within the community. By creating a wider range of housing choices, communities can begin to use their infrastructure resources more efficiently, better accommodate the housing needs of all residents, and help aging residents remain in their homes. Zoning codes can be revised to permit a wider variety of housing types.

Principle 5: Foster distinctive, attractive communities with a strong sense of place. Raymond has a strong history of preserving its community character. Smart growth seeks to foster the type of physical environment that creates a sense of civic pride, and supports a more cohesive community fabric. For example, planting trees is a simple yet fundamental way of adding to the beauty, distinctiveness and material value of an area by incorporating the natural environment into the built environment.

Principle 6: Preserve open space, farmland, natural beauty and critical environmental areas. Raymond is already doing this through the development of this open space plan. Open space supports smart growth goals by bolstering local economies, preserving critical environmental areas, providing recreational opportunities, and guiding new growth into existing villages. Networks of preserved open space and waterways can shape and direct urban form while preventing haphazard conservation (conservation that is reactive and small in scale). Open space can increase local property values, provide tourism dollars, and reduce the need for local tax increases.

Principle 9: Make development decisions predictable, fair and cost effective. Most conventional zoning codes offer relatively broad guidelines to define the size and use of buildings. A point-based performance evaluation system helps communities to evaluate projects in terms of the smart growth benefits they provide. Projects that fail to meet a desired point level can be redesigned during negotiations with planning staff to achieve a higher score. Reduction of development fees, support for infrastructure financing, or density bonuses may be used as incentives to encourage smart growth projects.

Section 2, Plan Development

Step 1

The first step in the development of this Open Space Plan is the identification of "high value" natural resources within the town.[5] The SNHPC suggested and presented a series of Geographic Information Systems (GIS) maps of various natural and scenic resource data, including hydric soils and wetlands, aquifers, floodplains, prime agricultural soils, steep slopes, forested lands, wildlife habitats, scenic views, ridgelines and hilltops, and unfragmented lands. The data source of these maps is located in the Appendix B, the Technical Supplement. The Raymond Conservation Commission (RCC) then reviewed these maps and selected as shown in Table 1 below the most important natural resources and features within Raymond. These natural resources and features are grouped into the five broad categories as shown in yellow highlight in Table 1.

Step 2

The second step was to assign relative weights to the various natural resources to establish their suitability for protection. Weights were assigned through a "Delphi" process during which each individual RCC member suggested a weighting scheme by dividing 100 points up between each natural resource. The members then compared each of their individual results to the group average, discussed differences and revised their weighting schemes. After the second iteration of this process the RCC members reached a consensus. Table 3 on the next page shows the relative weight, on a percentage basis, placed on each of the resources.

SNHPC staff then computed resource values across the entire town based on the weighting scheme shown in Table 1. Map 1 is a co-occurrence map that shows where multiple resources occur in the same area. The inset maps on Map 1 show, respectively, where areas of productive soils, open space continuity, water quality, views/quality of life and slopes occur. Each map is graduated by standard deviation to highlight areas of exceptional resource value. These maps provide the basis for all subsequent work by locating, in a spatial context, the highest value natural resource areas and therefore those areas of town most in need of protection.

[5] High value natural resources are defined by the town as the most important natural features to conserve.

ROUND 2 TALLY SHEET

	Round 1	Round 2
Enter # of Participants:	9	
Soil Conditions		
Important Forest Soil Group I	12.8	13.9
Important Forest Soil Group II	3.3	2.2
Local Agricultural Soils	1.6	1.6
Prime Agricultural Soils	5.7	6.1
State Agricultural Soils	1.3	1.3
Soil Condition Total Score	24.7	25.1
Open Space Continuity		
Unfragmented Areas > 50 acres	1.1	2.6
Unfragmented Areas > 100 acres	11.8	9.6
Unfragmented Areas > 500 acres	11.7	13.3
NH WAP	7.2	9.4
Open Space Continuity Total Score	31.8	34.9
Water Quality		
Aquifer Transmissivity 0 - 2,000 ft3/day	4.6	10.1
Aquifer Transmissivity > 2,000 ft3/day	6.4	3.1
Named wetlands and perennial streams & 250' buffer	13.8	12.6
Unnamed wetlands and intermittent streams & 100' buffer	5.9	5.3
Water Quality Total Score	30.7	31.1
Views / Quality of Life	0.0	
Scenic Views/Ridgelines & Hilltops	4.6	4.0
Water Views (Lakes, Ponds, Rivers)	3.3	3.3
Classic Roads	1.0	1.0
Views / Quality of Life Total Score	8.9	8.3
Slopes		
Slopes > 25%	4.0	0.6
	100.0	100.0

Table 3 - Resource Data and Weighting Scheme

Step 3

The third step is to define the "green infrastructure". The green infrastructure is the overall network of all the highest ranked natural resources within the community as determined by the RCC. It is an open space corridor that if protected from development, should ensure that the services provided by nature to the town's residents will continue for future generations.

RCC members worked on maps with clear overlays. The RCC drew out open space corridors that they felt were important for the town to concentrate on protecting. This is the area that, if protected from development, should ensure that the services provided by nature to the town's residents will continue for future generations. These services include:

- Maintaining the quality and quantity of ground and surface water.
- Improving air quality.

- Providing sufficient habitat for plant and animal species now in Raymond to remain in Raymond, even in the face of a significant disturbance such as fire or insect infestation.
- Providing an opportunity for outdoor recreation activities for all Raymond residents at a reasonable distance from their homes.
- Creating a pleasant and scenic environment in which to live.
- Creating interconnected green spaces that allow for trails connecting the various parts of town and allow for the movement of wildlife.

In defining the green infrastructure (Map 2), the Conservation Commission followed these general guidelines and constraints:

- Include areas of exceptionally high resource value for a particular category.
- Include areas where multiple resource values occur in the same place.
- Give added consideration to lands near existing conservation lands.
- Give added consideration to lands that allow each Raymond resident reasonable access to open space.
- Avoid areas slated for industrial or commercial development, unless they contain exceptionally high quality resources.
- The total land area of the infrastructure should include at least 25 percent of the town's land area to maintain sustainability, but not more than 50 percent, to allow for future development.

As defined by the work of the RCC members under this step, the Green Infrastructure in Raymond includes approximately 9576.3 acres within the Town or about 50.5 percent of the town. This includes a wide diversity of land uses, including vacant properties and already developed or protected lands**.**

It is extremely important to note that landowners whose land falls within the green infrastructure are free to dispose of their land as they see fit, consistent with applicable laws and regulations. Inclusion of land within the green infrastructure is NOT an indication that the Town of Raymond has any legal interest in the land or has any intention of acquiring or protecting the land for a public purpose.

Step 4

In this step the green infrastructure was superimposed over the town's tax maps to determine which ownerships or parts of ownerships were included in the green infrastructure. Staff computed the natural resource value of each parcel or partial parcel lying within the green infrastructure.

From the large set of parcels in the green infrastructure (approximately 1,260 parcels), the GIS Analyst, took out parcels that were already in conservation according GRANIT[6]

[6] The New Hampshire Geographically Referenced Analysis and Information Transfer System (NH GRANIT) is a cooperative project to create, maintain, and make available a statewide geographic data base serving the information needs of state, regional, and local decision-makers. (http://www.granit.unh.edu/)

data. From those remaining parcels, the top 52 parcels of the highest adjusted resource value score were selected for consideration. The Conservation Commission worked their way through the list and determined parcels that should be included or excluded from consideration. Parcels that were dropped from the list included town or state property, conserved or developed land, or undevelopable land (i.e. steep slopes, wetlands, etc.).

The strategies were further grouped into "high cost" and "low/no cost" protection strategies. These strategies included:

- Purchase by the town to be held as town-owned conservation land (high cost).
- Purchase of a conservation easement by the town over part or all of the property (high cost).
- Protection by regulation, such as state wetland regulations/mitigation (low/no cost).
- Establishment of a management agreement that would ensure the land was managed in a way compatible with maintaining the green infrastructure (low/no cost).
- Landowner education by partnering with organizations such as UNH Cooperative Extension, Society for the Protection of NH Forests, etc. (low/no cost).

Section 3, Priorities

As part of the development of this plan, the Conservation Commission recommends a prioritized list of land to be protected. This list is provided in Appendix C. It features the 51 high priority parcels in Raymond. The 51 highest priority parcels were chosen from a list of all the parcels that were included within the green infrastructure. The total number of parcels within the green infrastructure came to over 1,260. The top 100 parcels, which had the highest co-occurrence ranking (as determined from the Delphi process) were the final list that the top 51 were chosen from. The committee selected the top 51. These final 51 parcels were separated into two categories, high and low cost depending on the possibility and cost that would be required to preserve the parcel for open space.

The Conservation Commission believes that every parcel in Appendix B is worthy of protection as each is an important link in the green infrastructure that should be protected using appropriate, site specific means. Further, the Conservation Commission believes protection priorities should be based on three broad criteria:

1. The "threshold" criterion of being within the green infrastructure.
2. The "competitive" criterion of cost per resource value, computed at the time a purchase is considered.
3. The "qualitative" set of criteria that includes: geography (key links, abutting land); threat of development; ability to get outside money; sales price; possible bargain sale; cost avoidance if no development (self-paying).

The "threshold" criterion acts as a broad filter that identifies both parcels of interest to the town and parcels that are best dedicated to further development.

The competitive criterion is a strictly computational criterion that *assumes that all other factors are equal.* The Conservation Commission has recommended this competitive criterion over total parcel resource value, because financial resources are the limiting constraint in executing the open space plan. This criterion promotes the greatest amount of conservation value for the least amount of dollars. Unfortunately, the competitive criterion can only be applied to a specific parcel at a specific sale price. This means that the cost per resource value cannot be used to compare a large number of parcels, such as the top 51 parcels recommended for protection at Appendix D. Nonetheless, this criterion can be used to evaluate specific offers from willing sellers of land or conservation easements, and these offers can then be compared to the cost effectiveness of other open space purchases made in the past and adjusted for inflation.

The qualitative factors provide for the intervention of human judgment on a case-by-case basis. This judgment must be exercised by the Conservation Commission, as they recommend parcels for protection, all subject to input from the public.

In reality, it is these "qualitative" criteria that will play the most important role, for the simple reason that the town can only acquire interests in open space from *willing sellers.* At any given point in time the number of willing sellers is likely to be few in number.

Section 4, Financial Planning

Current Situation

In one sense the time horizon of this plan is indefinite: it looks forward to the day when Raymond is both "conserved out" and "built out". In reality, given the pace of development in southern New Hampshire (exclusive of today's current economic conditions), it is difficult to estimate the number of years before the town is built out. As a result of this unknown timeframe, predicting the rate of inflation and the level of real estate values even 10 years into the future would be highly speculative. Instead, the Raymond Conservation Commission believes the town should take an adaptive approach to financial planning: the recommendations of this plan represent a "best guess" as to what the Town of Raymond will need to do in the near term to execute the Open Space Plan. However, since our ability to predict costs beyond the near term is very limited, the Conservation Commission recommends reviewing the open space financial plan on an annual basis, in conjunction with the Capital Improvement Plan process.

In the past, the Town of Raymond has used 100 percent of its Land Use Change Tax (LUCT) for open space conservation. However, the chart below features the LUCT totals from the past six fiscal years. The year 2008 shows evidence of the economic downturn.

Year	Conservation Funding (from LUCT)		
	Current Use	Yield Tax	
2004	$ 90,300.00	$ 1,137.36	(100%)
2005	$ 195,600.00	$ 8,209.00	(100%)
2006	$ 12,122.50	$ 3,038	(100%)
2007	$ 44,790.00	$ 6,650	(100%)
2008	$ 22,225.00	$ 627.00	(30%)
2009	$ -	$ 2,211.00	(50%)
Total	$ 369,837.50	$ 22,688.36	
Average	$ 61,639.58	$ 3,781.39	

Table 4 - Raymond Conservation Funding from years 2004 to 2009

For the period of fiscal years 2004 through 2009 Raymond voters have authorized $22,688.36 from yield tax and $369,837.50 from current use money in open space funding, for an annual average of $3,781.39 and $61,639.58.

Since the Conservation Commission has assumed an equal level of effort over the period of open space protection, and since, as discussed above, it is not possible to predict how much time is left before the town is essentially built out, the question of how much funding to dedicate on an annual basis is largely a question of risk. The risk is that the point of build out will be reached before the Open Space Plan acquisition effort is complete. At too low a level of annual funding, the town may not be able to protect the parcels recommended for protection in this report, because they will be developed before the town has raised sufficient funds to protect them. At too high a level of annual

funding, taxpayers may feel they simply cannot afford to support open space acquisition, even though they support the concept of open space protection.

The solution to this dilemma is to follow the adaptive financial management approach discussed above. The Conservation Commission recommends that the town consider annual funding but also that the town commit to annual reviews of this level of funding to ensure the risk of not completing the planned open space acquisitions does not become too high.

Financial Strategy

By assuming an equal level of effort over the period of open space protection, and since it is not possible to exactly predict how much time is left before the town is essentially built out, the question of how much funding to dedicate on an annual basis is largely a question of risk. The risk is that the point of build out will be reached before the open space plan acquisition effort is complete. At too low a level of annual funding, the town may not be able to protect the parcels recommended for protection in this report, because they will be developed before the town has raised sufficient funds to protect them. At too high a level of annual funding, taxpayers may feel they simply cannot afford to support open space acquisition, even if they support the concept of open space protection.

The solution to this dilemma is to follow the adaptive financial management approach discussed above. The OSTF recommends that the town consider annual funding levels that voters have supported in the past and that the town commits to annual reviews of this level of funding. This will ensure the risk of not completing the planned open space acquisitions does not become too high.

Current Build-Out Conditions

According to the 2009 Raymond Master Plan Existing Land Use Analysis, about 27% or 4,769 acres of land are developed in some way within Raymond. The most prominent type of development is single family housing, which makes up about 15% of the developed land. About 73% or 12,628 acres of the town's total land area remains in vacant and developable parcels. Under current zoning, Raymond has the capacity for an additional 3,857 new housing units in addition to the 13,000 units now existing within the community.

Over the past few years, Raymond has been averaging about 75 new building permits per year. There is apparently land capacity available under current zoning for about four decade's worth of growth at that rate. That potential increase of about one-quarter in the number of dwelling units at build-out probably would mean an increase of less than a quarter in total population, given continuing reductions in the average household size. Under current regulations, growth will approach build-out condition at an increasingly moderate rate over the next few decades.

The SNHPC has conducted a build-out analysis for the Town of Raymond. The build-out is being done for the CTAP program which was developed in conjunction with the expansion of I-93. It is predicted that towns along the I-93 corridor will significantly

grow and develop due to easier travel and frequent use of the newly expended highway. The build-outs are conducted by SNHPC along with other regional planning commissions in New Hampshire to estimate how long and the amount of development it would take until a town had reached its maximum capacity for structures and residents. As the build-out for Raymond is complete it is recommended that the charts and data created be referenced or incorporated into this plan. The data used for current numbers and to complete the build-outs was taken from the town's zoning, land use, and current data.

Funding Sources

Below are a list of grants and funding opportunities that the Town of Raymond has utilized in the past to fund open space acquisitions. This list also contains new options for funding that would suit Raymond's specific needs. A complete listing of available funding options is listed in Appendix D - Funding Sources.

- ❑ The Conservation License Plate Program; "Moose Plate Program"

"The Conservation License Plate program supports the protection of critical resources in New Hampshire, including scenic lands, historic sites and artifacts, and plants and wildlife. Revenues from the sale of Conservation License Plates are distributed to designated state agencies for the purpose of:

- Preserving and/or purchasing significant, publicly owned historic properties, works of art, artifacts and archaeological sites
- Researching and managing non-game wildlife species and native plant species, and educating the public about these species
- Providing grants to counties, municipalities and non-profits for resource conservation projects
- Expanding roadside wildflower and lilac plantings
- Administering the Land and Community Heritage Investment Program (LCHIP)

The New Hampshire Conservation Number Plate Advisory Committee, a committee of legislators and staff from state agencies, oversees the design of the plate and the distribution of the plate's revenues. The Committee reports annually to the General Court, summarizing the number of plates issued, revenues collected, and program accomplishments."[7]

- ❑ Wetlands Reserve Programs (WRP)
    - WRP is a voluntary program that provides technical and financial assistance for private landowners and Tribes to restore, protect, and enhance wetlands."

This program would assist land owners, who have wetlands on their properties, with maintaining the integrity of the wetlands. This is especially relevant to Raymond since many private properties in Raymond have wetlands on them.

[7] The Conservation License Plate Program. http://www.mooseplate.com/index.php?page=about-the-program

- Natural Resources Outreach Coalition (NROC)
  - NROC is part of the University of New Hampshire's Cooperative Extension Program. "NROC is a multi-organizational initiative offering coordinated assistance to communities wishing to protect their natural resources while accommodating growth. The NROC Team includes natural resources and planning professionals, and works with each community to provide the educational assistance and guidance necessary for them to meet their land use and natural resource protection goals."[8] NROC assisted Raymond in completing their Natural Resources Inventory and is a good resource for progressing forward with new funding opportunities.

- Wildlife Habitat Incentives Program (WHIP)
  - "WHIP is a voluntary program that provides technical and financial assistance for private landowners to develop and improve high quality habitat that supports wildlife populations of National, State, Tribal, and local significance".

- Piscataqua Region Estuaries Partnership (PREP)
  - "The Piscataqua Region Estuaries Partnership's (PREP's) *Comprehensive Conservation and Management Plan* presents a series of goals, objectives, and Action Items designed to improve, protect, and enhance the environmental quality of the state's estuaries. The PREP has developed an environmental monitoring program, an annual grants program, and several partnership projects to help achieve its objectives. These programs involve a broad range of coastal watershed organizations, including federal, state, and municipal government bodies as well as non-governmental entities."[9]

[8] UNH Cooperative Extension, Community Assistance. http://extension.unh.edu/CommDev/NROC/CANROC.cfm#TOP
[9] Piscataqua Region Estuaries Partnership. http://www.prep.unh.edu/programs/index.htm

Does Open Space Pay?

A study conducted during the mid 1990s by Philip A. Auger, Extension Educator, Forest Resources, University of New Hampshire Cooperative Extension, looked at the cost of community service for residential, commercial, industrial, and open space land uses within the communities of Stratham, Dover, Fremont, and Deerfield. In each community, residential land use expenditures *exceeded* revenues by an average of approximately 12 percent. Conversely, for open space land use, revenues *exceeded* expenditures. The results of this study, published in 1996, still ring true today as evidenced by a similar study for the Town of Candia, NH conducted in 2009 by the Southern New Hampshire Planning Commission.

The results of the study show that, in Candia, based upon the town's financial data from 2008 for every $1.00 in revenue collected by the Town for the particular land use:

- $1.03 was spent in services to residential properties
- $0.69 was spent in services to commercial/industrial properties
- **$0.19 was spent in services to open space lands.**

While each town in New Hampshire has a unique blend of land uses, revenues and expenditures, these studies point out some fiscal consistencies that are likely to apply in most circumstances. One of these is that *residential land use very often costs communities more than they generate in revenues.* Traditional residential housing brings with it a tremendous cost load for community services, roads, landfills and schools. Open space lands contribute to the stability of community tax rates. This has been supported by other well-documented fiscal impact studies in New Hampshire communities, including Milford and Londonderry.

The publication, *Managing Growth in NH* [2], notes that, on average, taxes on the median value home in New Hampshire communities are:

- Higher in more developed towns,
- Higher in towns with more year-round residents, and
- Higher in towns with more buildings (more value of buildings)

Brentwood Open Space Task Force. *Does Open Space Pay in Brentwood? Part 1: Housing Growth and Taxes.*

Section 5, Recommendations

Past Protection

In the last Raymond Open Space Plan (2003), a list of key priority parcels for open space protection was identified. These are listed below. The Conservation Commission, in coordination with other town boards, has been successful protecting a number of these properties for open space and conservation.

Name: Norris Farms/Flint Hill
Owner: Town of Raymond
Old Tax Map/Lot #: 9/20-4
New Tax Map/Lot #: 35/4
Acres: 215 southern
Current Status: The town voted in 2009 to have conservation easement on the northern 145 acres. The remaining 70 acres are reserved for development along route 27.

Name: Dearborn Estates
Owner: Town of Raymond
Old Tax Map/Lot #: 4/48
New Tax Map/Lot #: 25/11
Acres: 305
Current Status: In 2006, voters approved a conservation easement but it is linked with the development of Exit 4 that has not occurred yet.

Name: Cammett Fields and Riverside Park (named Manchester-Portsmouth RR Bed in the 2003 plan)
Owner:NHDOT USGS, DRED
Acres: 258.3
Current Status: The NH DES has an executory interest because of the Water Protection Grant awarded to the town.

Name: - Lillian Cassier Memorial Forest (named Cassier property in the 2003 plan)
Owner:Town of Raymond
Old Tax Map/Lot #: 8/41
New Tax Map/Lot #: 39/6
Acres: 370
Current Status: The conservation easement was completed in 12/2010.

Name: Cassier-Eames Estates
Owner: Town of Raymond
Old Tax Map #: 8
Acres: 26 acres
Current Status: Land donated to the town with a conservation easement in 12/2008.

Name: Bald Hill Road
Owner: Town of Raymond

Old Tax Map/Lot #: 8/6
Acres: 50 acres
Current Status: A conservation easement has not been placed on this property to date.

Name: Chandler's Mine
Acres: 10
Resource: REPP 1998 Inventory

Name: Watershed Protection
Acres: 335
Resource: REPP 1998 Inventory

Name: Onway Lake Village
Acres: 175
Resource: REPP 1998 Inventory
Current Status: This is privately owned property, no action has been taken on this property.

Name: Various small properties (named Map ID# 1,2,3,5,6,8,9 in 2003 plan)
Acres: 800 (approximate)
Current Status: Detailed information about these properties is available through the Raymond Conservation Commission.

The following are additional properties that have been identified by the Raymond Conservation Commission to protect for open space.

Name: Robinson Hill
Owner: Town of Raymond
Tax Map/Lot #: 44/26 & 29
Acres: 56 acres
Current Status: The town purchased the property in 2008 and placed a conservation easement in 2009

Name: Bond Property along Pawtuckaway River
Owner: Southeast Land Trust of NH
Tax Map/Lot #: 42/1
Acres: 56.9 acres
Current Status: A conservation easement was placed in 2008

Name: Colonial Drive property
Owner: Town of Raymond
Tax Map #: 29 & 35
Acres: 75 acres
Current Status: A conservation easement has not been placed on this property to date.

Summary of Recommendations

The Raymond Conservation Commission recommends:

1. The green infrastructure identified in this plan should be adopted as the town's goal for open space preservation.
2. The parcels identified in Appendix D should be pursued for protection using the strategies indicated.
3. The town work expeditiously and cooperatively with owners of developed parcels within the recommended green infrastructure to ensure their appropriate management.
4. The Town re-examine the recommendations of this open space plan at no more than three year intervals and review the open space financing plan annually.

Implementation

There are several approaches to protect open space. Both regulatory controls and voluntary options need to be examined to find what would be the best way for Raymond to protect its most highly valued natural resources. By using a variety of these protection methods, Raymond will be able to achieve their conservation goals.

Regulatory Land Protection

One approach to land protection involves the use of zoning or municipal regulations to prohibit unnatural disturbance or total development of each parcel. Regulatory measures are perhaps the most cost-efficient means of land preservation, and if implemented according to the open space priorities of the town, can be extremely effective in curbing sprawl and protecting land. The two primary methods of regulatory land preservation are Conservation Subdivisions and growth management ordinances. Additionally other subdivision ordinances may be added to zoning regulations in order to reflect priorities on smaller scales.

Conservation Subdivision

A Conservation Subdivision *requirement* has the same result as conservation subdivision option but the requirement regulates that qualified development *must* be in conservation subdivisions. This ordinance would lower the lot size of houses built in new subdivision developments in Raymond. However, it would also significantly increase the amount of conserved open space.

Growth Management Ordinances

Growth Management Ordinances are often used by municipalities experiencing population growth at a rapid pace whose public facilities and services cannot keep up. They function by placing short or long-term caps on new residences or population numbers. Under certain circumstances, a town can adopt regulations to control the rate of development. In New Hampshire, a town must have both a Master Plan and a Capital Improvement Plan before it can adopt any ordinances controlling the timing of development. In certain rapid growth situations, slowing the rate of development can give a community time to update its Master Plan, develop infrastructure, and consider ways to conserve open space. Methods include limiting the number of building permits, or an

interim growth moratorium allowing the planning board to halt or severely limit development for up to one year.

Non Regulatory Strategies

There are other approaches to land protection that does not involve regulation. This includes landowner education, Transfer of Development Rights (TDR) and voluntary land protection.

Landowner Education

By educating landowners about the benefits of open space and the economic and tax implications, they are more likely to want to conserve their open space. Therefore, offering this information and making it readily available can be one of the most effective ways to conserve open space. Establishing a good working relationship between the landowner and the Conservation Commission is an essential step in protecting open space.

Transfer of Development Rights

Transfer of development rights (TDR) is a market based technique that encourages the voluntary transfer of growth from places where a community would like to see less development (called sending areas) to places where a community would like to see more development (called receiving areas). The sending areas can be environmentally-sensitive properties, open space, agricultural land, wildlife habitat, historic landmarks or any other places that are important to a community. The receiving areas should be places that the general public has agreed are appropriate for extra development because they are close to jobs, shopping, schools, transportation and other urban services.

TDR is driven by the profit motive. Sending site owners permanently deed-restrict their properties because the TDR program makes it more profitable for them to sell their unused development rights than develop their land. Developers buy the development rights and use them to increase the density of receiving site projects; they do that because these larger projects are more profitable than the smaller projects allowed when development rights are not transferred. In addition to making property owners and developers happy, TDR solves a seemingly intractable dilemma for communities: it gives them a way to achieve critical land use goals using little or no public funding. (1999 "Transfer of Development Rights Update", American Planning Association National Planning Conference, http://design.asu.edu/apa/proceedings99/PRUETZ/PRUETZ.HTM)

Voluntary Land Conservation

A voluntary conservation easement involves the donation or sale of the development rights over the land. The landowner makes the decision that they wish to prohibit development on their land and preserve the natural state. They donate or sell the development rights to the town or a land trust as the easement holder; this group is then responsible for easement stewardship. The owners continue to use their land and pay property taxes on it. However, some or all of the value of any donation can be deducted from federal income taxes.

Appendix A - Maps

Map 1

Raymond Open Space Plan

Natural Resources Co-Occurrence Analysis

Co-Occurrence Score

Total Natural Resource Score

- 0 - 25.9 Points
- 26.0 - 32.4 Points
- 32.5 - 38.9 Points
- 39.0 - 45.9 Points
- > 46 Points
- Town Boundary
- Rivers and Streams
- Lakes and Ponds

Roads

- Interstate & State Routes
- Major Roads
- Local Roads
- Class VI Roads

Data Sources:
NH GRANIT Digital Data (1:24,000)
Town of Raymond
Southern New Hampshire Planning Commission
New Hampshire Department of Transportation

The Town of Raymond and the SNHPC make no representations or guarantees to the accuracy of the features and designations of this map. This map is for planning purposes only. It is not to be used for legal boundary determinations or for regulatory purposes.

Map produced by: GIS Service SNHPC 2010. Contact: gis@snhpc.org.

0 0.4 0.8 1.6 Miles

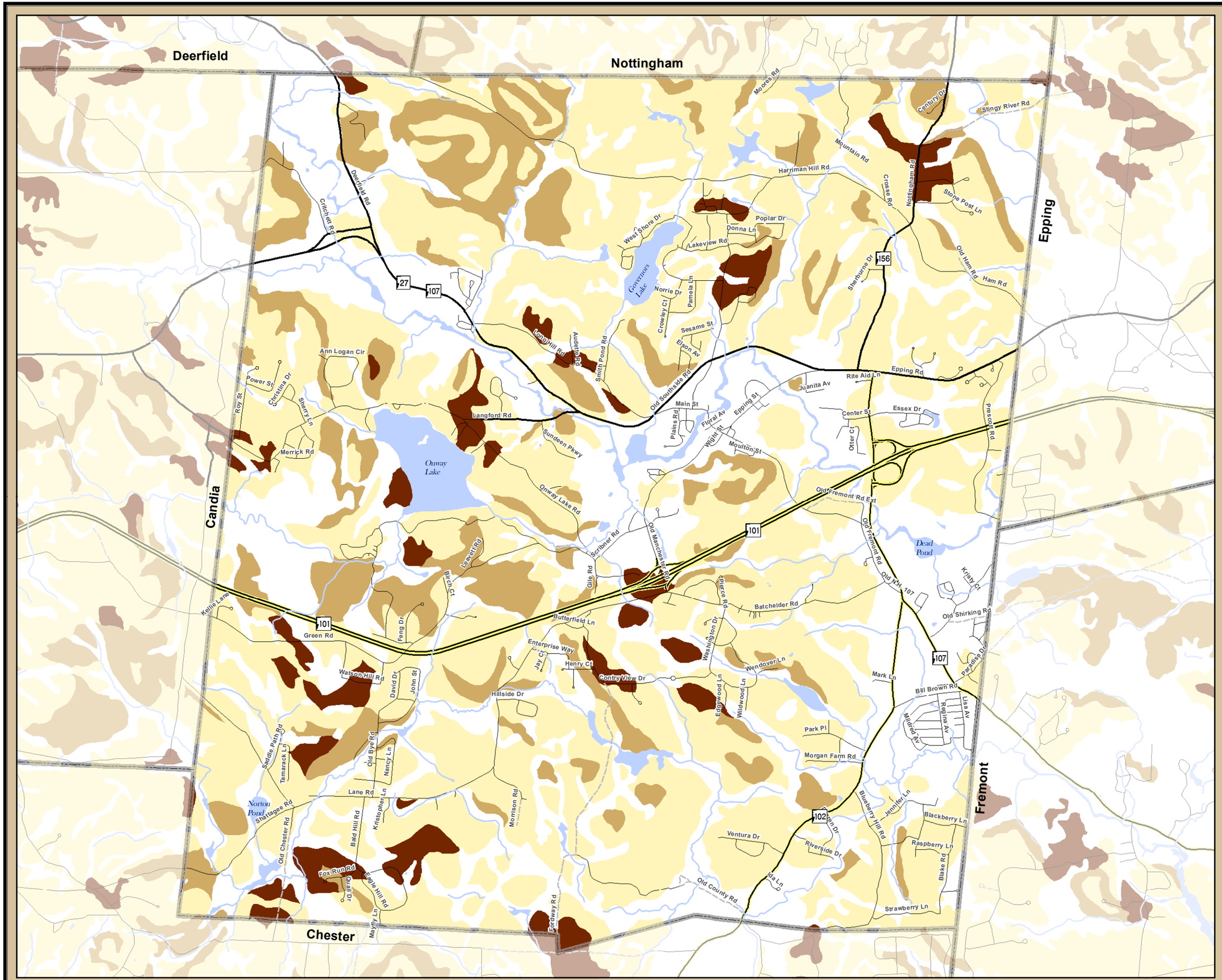
N

SNHPC

Map # 1A

Raymond Open Space Plan

Soil Condition Specialist Co-Occurrence Analysis



Co-Occurrence Score

Soil Condition

- 0 - 10.0 Points
- 10.1 - 14.0 Points
- 14.1 - 15.0 Points
- > 15 Points
- Town Boundary
- Rivers and Streams
- Lakes and Ponds

Roads

- Interstate & State Routes
- Major Roads
- Local Roads
- Class VI Roads

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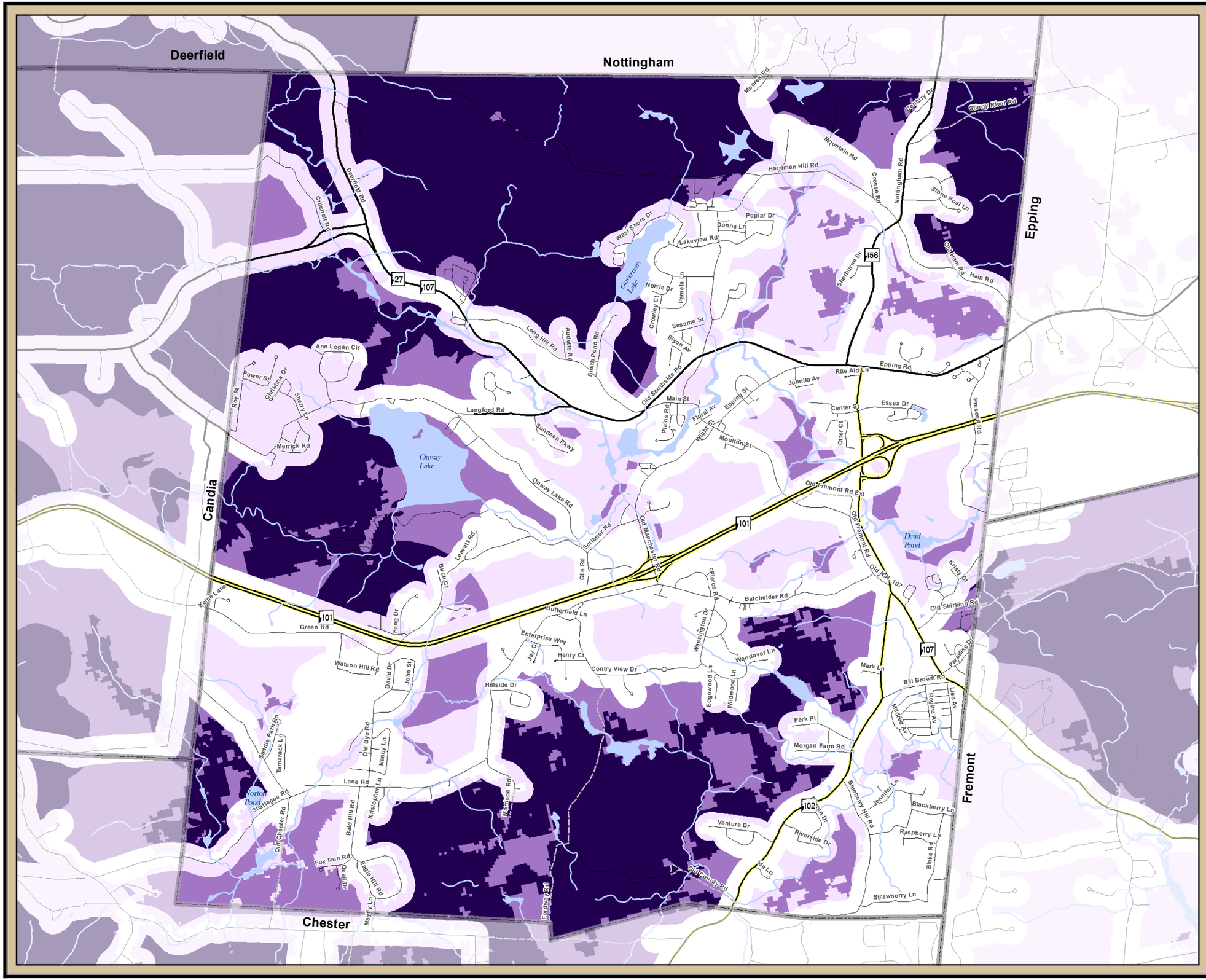
0 0.4 0.8 1.6 Miles

SNHPC



Map # 1B

Raymond Open Space Plan

Open Space Continuity Specialist Co-Occurrence Analysis

Co-Occurrence Score

Open Space Continuity

- 0 - 9.0 Points
- 9.1 - 13.0 Points
- 13.1 - 20.0 Points
- > 20 Points
- Town Boundary
- Rivers and Streams
- Lakes and Ponds

Roads

- Interstate & State Routes
- Major Roads
- Local Roads
- Class VI Roads

Data Sources:
NH GRANIT Digital Data (1:24,000)
Town of Raymond
Southern New Hampshire Planning Commission
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Map produced by: GIS Service SNHPC 2010. Contact: gis@snhpc.org.

0 0.4 0.8 1.6 Miles

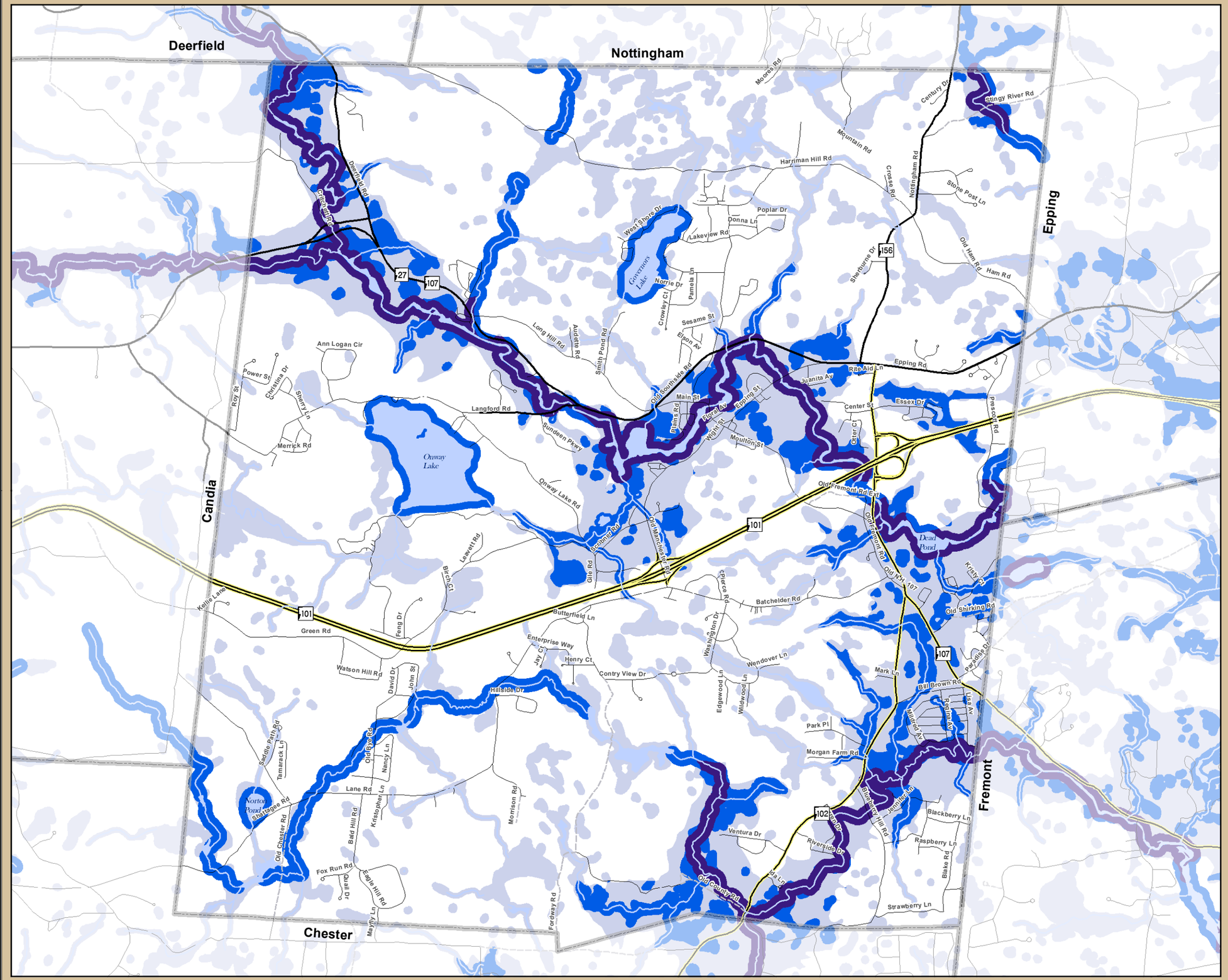
N

SNHPC

Map # 1C

Raymond Open Space Plan

Water Quality Specialist Co-Occurrence Analysis



Co-Occurrence Score

Water Quality

- 0 - 5 Points
- 5.1 - 12.0 Points
- 12.1 - 20.0 Points
- > 20 Points
- Town Boundary
- Rivers and Streams
- Lakes and Ponds

Roads

- Interstate & State Routes
- Major Roads
- Local Roads
- Class VI Roads

Data Sources:
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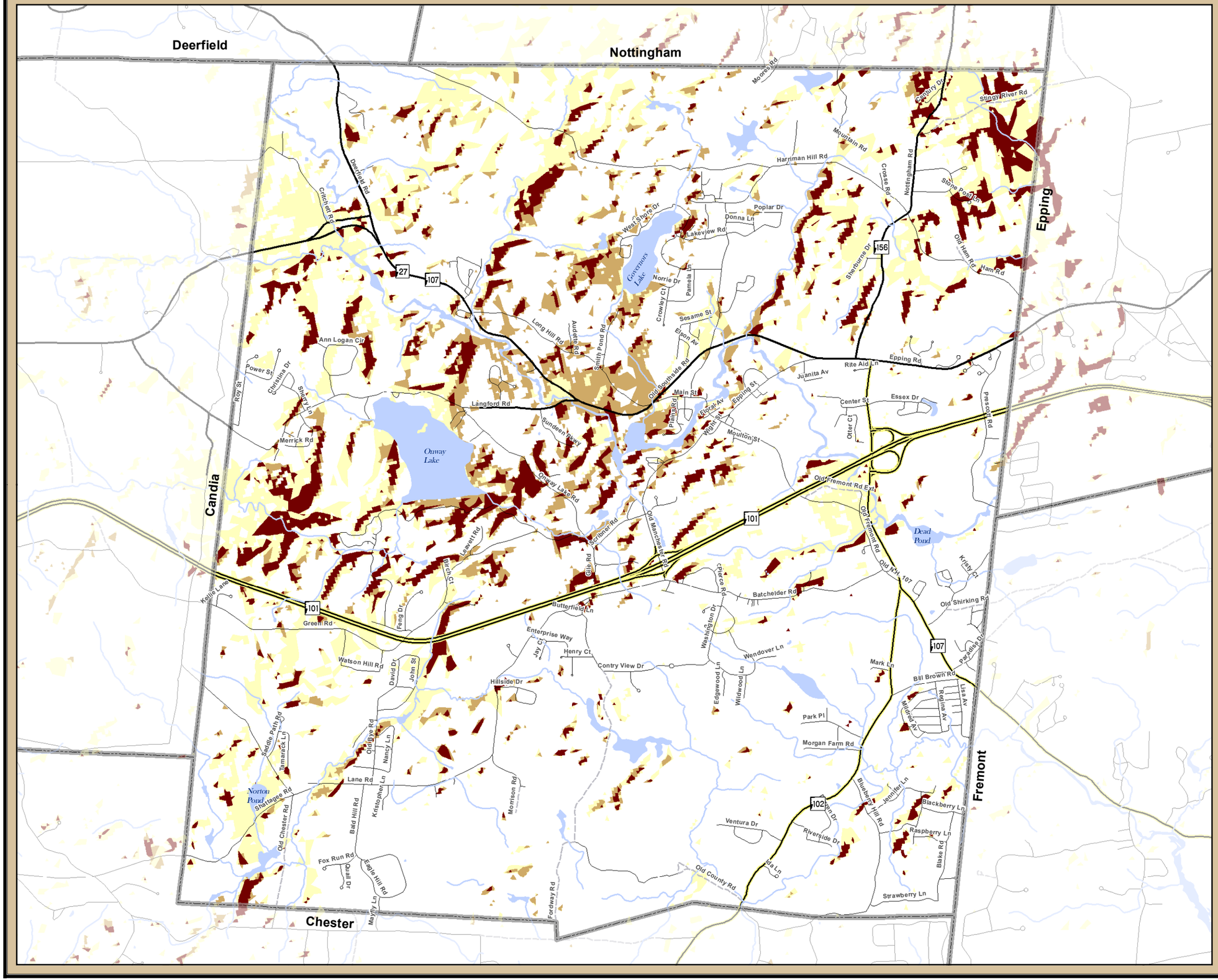
Map produced by: GIS Service SNHPC 2010. Contact: gis@snhpc.org.

0 0.4 0.8 1.6 Miles

SNHPC



Map # 1D

Raymond Open Space Plan

Views/Quality of Life Specialist Co-Occurrence Analysis

Co-Occurrence Score

Quality of Life/Scenic Views

- 0 - 3.0 Points
- 3.1 - 4.0 Points
- 4.1 - 6.0 Points
- > 6 Points
- Town Boundary
- Rivers and Streams
- Lakes and Ponds

Roads

- Interstate & State Routes
- Major Roads
- Local Roads
- Class VI Roads

Data Sources:
NH GRANIT Digital Data (1:24,000)
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Southern New Hampshire Planning Commission
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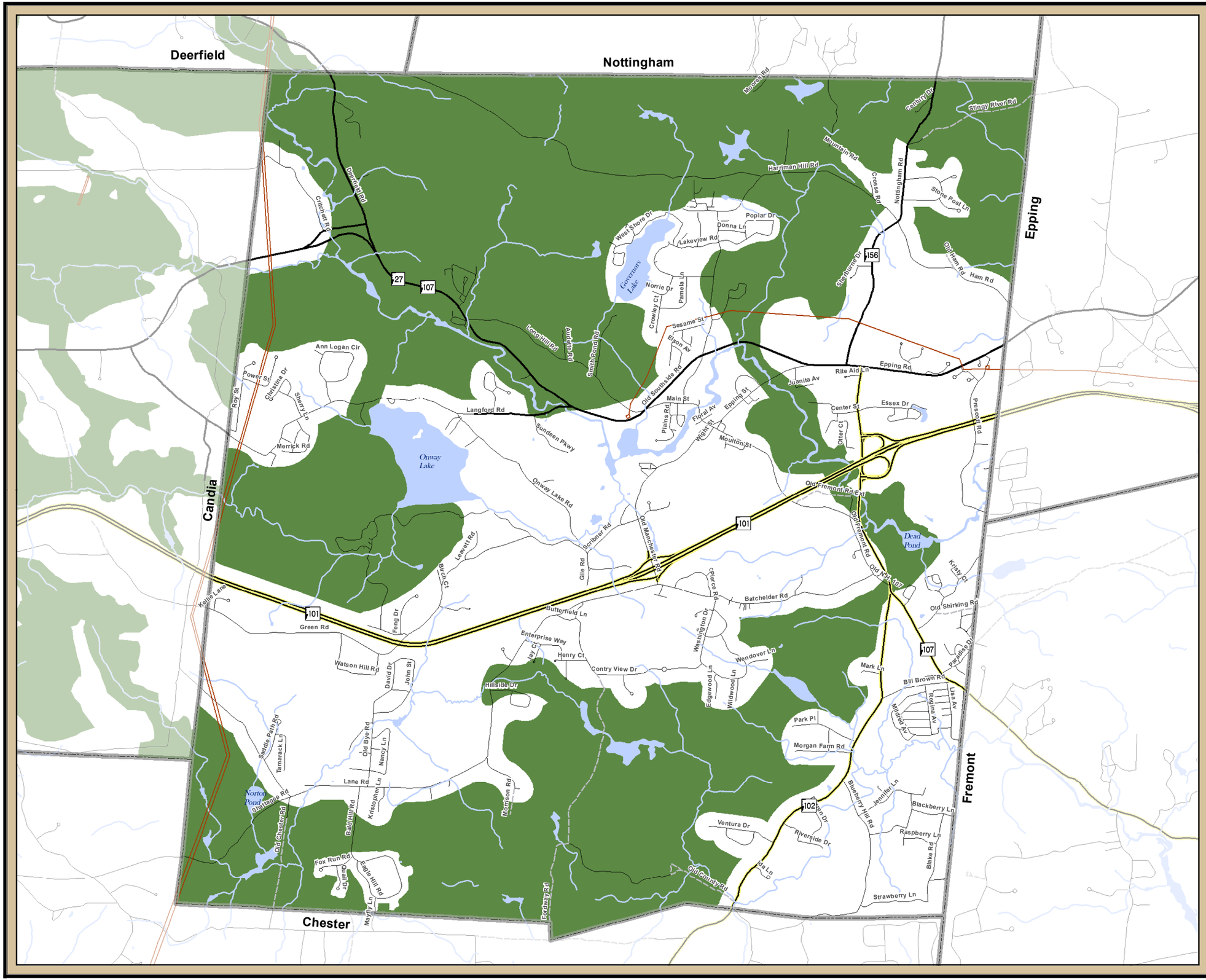
Map produced by: GIS Service SNHPC 2010. Contact: gis@snhpc.org.

0 0.4 0.8 1.6 Miles

N

SNHPC



Map # 2

Raymond Open Space Plan

Green Infrastructure

- Green Infrastructrures
- Town Boundary
- Power Lines
- Rivers and Streams
- Lakes and Ponds

Roads

- Interstate & State Routes
- Major Roads
- Local Roads
- Class VI Roads

Data Sources:
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Map produced by: GIS Service SNHPC 2010. Contact: gis@snhpc.org.

0 0.4 0.8 1.6 Miles

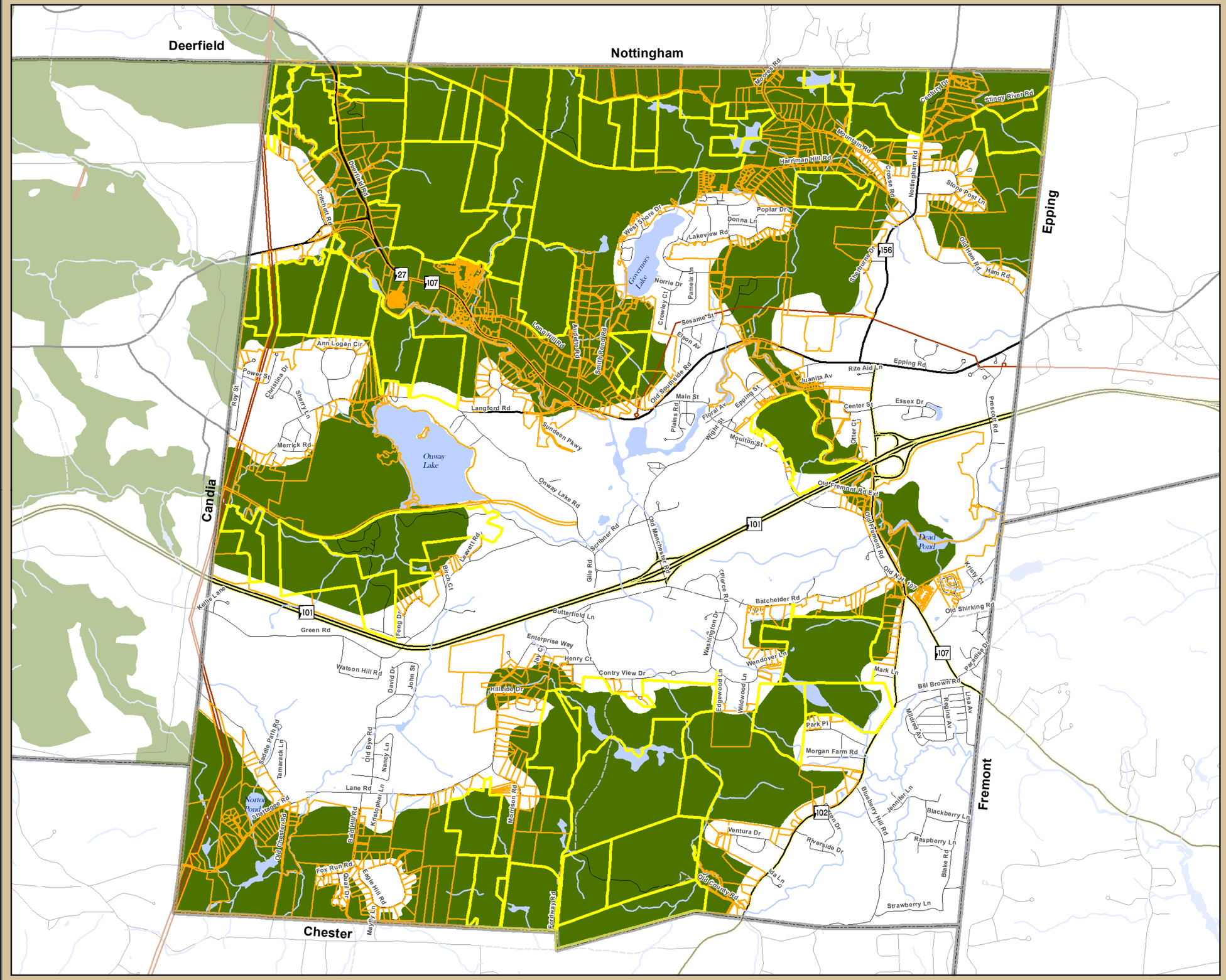
N

SNHPC

Map # 3

Raymond Open Space Plan

Priority Parcels



Priority Parcels

- Top Scoring Parcel
- Not Top Scoring Parcel
- Green Infrastructrures
- Town Boundary
- Power Lines
- Rivers and Streams
- Lakes and Ponds

Roads

- Interstate & State Routes
- Major Roads
- Local Roads
- Class VI Roads

Data Sources:
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Town of Raymond
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0 0.4 0.8 1.6 Miles

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SNHPC

Appendix B - Technical Supplement

Step 1: Base Map Production

A series of 16 datalayers describing natural resource conditions and organized into four thematic groups were considered the base layers for this analysis. If possible, local information from the Raymond GIS was applied in order to secure the highest accuracy. The 16 datalayers (see table below) were identified by the GIS Analyst and the Conservation Commission and were selected due to the relevancy and availability of data. A critical point was the ability to characterize ground features as positively in or out of the mapped data and to identify features that were separate and distinct from each other so as to permit tabulation of the number of co-occurrences between features with minimal double counting.

Soil Conditions	**Source**
Important Forest Soil Groups I and II	USDA NRCS Soil Survey of Hillsborough County. Downloaded from GRANIT. Query: FORSOILGRP = {IA, IB, IC, IIA or IIB}
Local Important Agricultural Soils	USDA NRCS Soil Survey of Hillsborough County. Downloaded from GRANIT. Query: FARMCLASS = {Farmland of local importance}
Prime Important Agricultural Soils	USDA NRCS Soil Survey of Hillsborough County. Downloaded from GRANIT. Query: FARMCLASS = {All areas are prime farmland}
State Important Agricultural Soils	USDA NRCS Soil Survey of Hillsborough County. Downloaded from GRANIT. Query: FARMCLASS = {Farmland of statewide importance}
Open Space Continuity	
Unfragmented Forest Areas > 50 Acres	SNHPC CTAP Land Use digitized from 2005 one foot imagery. Data derived from Land Use Category as described below.
Unfragmented Forest Areas > 100 Acres	SNHPC CTAP Land Use digitized from 2005 one foot imagery. Data derived from Land Use Category as described below.
Unfragmented Forest Areas > 500 Acres	SNHPC CTAP Land Use digitized from 2005 one foot imagery. Data derived from Land Use Category as described below.
NH WAP Highest Ranked Habitat	New Hampshire Fish and Game Department, Wildlife Action Plan, Highest Ranked Wildlife Habitat by Ecological Condition. Selection where Value = 1 or Value = 2 (Tier 1 and Tier 2)
Water Quality	
Aquifer Transmissivity 0 – 2,000 ft^3/day	Selection from GRANIT Aquifer Transmissivity dataset where field TMAX < 2000
Aquifer Transmissivity > 2,000 ft^3/day	Selection from GRANIT Aquifer Transmissivity dataset where TMAX > 2000
250' Resource Area of named wetlands and perennial streams	250' Resource Area applied to selection set of named wetlands and streams from NHHD data from GRANIT

100' Resource Area of unnamed wetlands and intermittent streams	100' Resource Area applied to remaining water features
Views/Quality of Life	
Scenic Views/Ridgelines/Hilltops	Selected by the OSTF of scenic locations and viewshed (Spatial Analyst) analysis from said point.
Farms/Open meadows	Selected by the OSTF and interpreted by the GIS Analyst
Heritage Trail	Selected by the OSTF and interpreted by the GIS Analyst
Slopes > 25%	SNHPC GIS. Slope determination was calculated in Spatial Analyst from local DEM database.

Unfragmented Forest Areas were mapped by the GIS Analyst. This was done using 2005 aerial imagery at a 1-ft scale. The land use category was interpreted from this imagery. Land that was categorized as agricultural land, brush or transitional between open and forest, forest land, outdoor recreation, and wetlands were selected. The next step involved a dissolve operation in ArcGIS by where adjacent polygons were merged into larger polygons. A selection of those polygons was done for each of the three forest sizes 50 to 100 acres, 100 to 500 acres and 500+ acres.

Step 2: Delphi Process

The Delphi Process represents a consensus building model that was applied to assign value scores to each of the natural resource classes. At the first meeting, following a review of the geography, sources and strengths/weaknesses of each mapped resource, Conservation Commission members were asked to distribute 100 points between each resource type. The distribution represented each individual's opinion on the types of resources of value to the Town of Raymond. Each individual response was tallied and a group average for each data type was presented to the group. Individuals whose own scores deviated significantly from the mean were offered a chance to describe their reasoning. Following discussion, a second round of scoring, with members reconsidering their initial scoring based on feedback from the group. Individual scores were again tallied and compared to the group mean. When the group felt that there were few significant deviations, it was determined that a consensus had been reached. The mean score for each resource type was considered the "natural resource score". This score was carried on into each of the remaining steps of the Conservation Commission analysis.

Step 3: Gravity Model

A gravity model analysis was carried out using Spatial Analyst for conservation parcels in the I-93 CTAP region. This analysis was used to identify broad areas that had connective potential between large conservation blocks. The model takes into account parcel/area size and applies a decay model[10] where geographic points close to the parcel score higher than points distant. The approach is based on work conducted by Pete Ingraham, formerly of the Society for the Protection of New Hampshire Forests and John Vogl, GIS Manager in Londonderry.

[10] A mathematically constructed function that expresses the inverse relationship between the quantity of a particular material and the distance from its source.

The first step involved dissolving the conservation parcels layer into areas so that a single polygon represented the entirety (or many tracts) of a single conservation area. This erased interior lot lines and allowed for the totality of a conservation area to be calculated. Major water features, such as the Merrimack River, given their natural connecting role, were considered conservation shapes in this analysis and added into the feature class. The areas were then separated into four layers according to feature weight, as follows: 10.1 to 50 acres: Weight 1, 50.1 to 100 acres: Weight 2, 100.1 to 500 acres: Weight 3, 500.1 + acres: Weight 4. Class separation values were based on a review of natural breaks. Anything smaller than 10 acres and located distant from other parcels was considered too small to be part of the connective tissue of the conservation network as they tended to be isolated lots.

A straight-line distance surface was carried out for each weight layer reaching to the full regional extent of the conservation layer. Following this, the following map algebra statement was applied:

$V = m * \sqrt{D} + w$
Where,
V = model value
m = constant (-weight/maximum distance)
D = straight line distance
w = weight*

> *The value "w" added a bonus for large conservation blocks, and was applied as follows: weight 1: 0, weight 2: 5, weight 3: 10, and weight 4: 25.

The four resulting calculation rasters[11] were then added together to create a single, final gravity model map.

Step 4: 10:10 Analysis

Conservation Commission members support the goal of providing 10 acres of open space within a ten-minute walk of all Raymond residents, thereby assuring equal access across town. This principle is referred to as "10:10". For the GIS analysis, a selection set of conservation areas in total excess of 10 acres was identified. A buffer of ¼ mile (assumed 10 minute walk distance) was carried out. This new polygon represented the accessible areas and those in agreement with the 10:10 principle. The inverse was considered underserved areas.

Step 5: Transfer of Delphi Scores to GIS Layers and Co-Occurrence Calculation

Following the Delphi process, each feature in each natural resource polygon layer was coded with its' appropriate score. Unique field names were added that allowed the 15

[11] Raster data is an abstraction of the real world where spatial data is expressed as a matrix of cells or pixels with spatial position implicit in the ordering of the pixels.

layers to be unioned into one layer that would carry the complete set of attributes. Following the union operation, a total natural resource score was summarized for each feature in the dataset. Maps were generated displaying this total score in both an ordinal range and in standard deviations. Areas with the highest score or the highest standard deviation represented the areas of with the most overlapping resources ad thus the richest resource environments. A second map displaying the "best of the best" was prepared that illustrated the areas of Raymond with the highest total resource score in each of the four thematic groups.

Step 6: Interpretation of datalayers to generate Green Infrastructure area

The results of steps 1 through 5 were presented to Conservation Commission members to facilitate a detailed interpretation of the local green infrastructure. A series of maps, including (1) regional context, (2) gravity model results, (3) total resource score, 4) highest scoring specialist resources and (5) 10:10 underserved areas. The members used markers and acetate to review the various layers and synthesize the resources into areas of contiguous green infrastructure. This work was undertaken with the understanding that there needed to be a balance between future conservation areas and future economic development areas. Features such as water bodies, contiguous forest, utility corridors and protected lands served as key connectors. The infrastructure areas were sketched in with an attempt to include both specialist and generalist resources and to provide for town-wide connectivity and town-wide access. Conservation Commission members formed two groups who each created an independent map. Following each group's completion, the two maps were combined, differences were discussed, and a final sketch representing the group consensus was finalized.

Step 7: Digitizing Green Infrastructure area

A refinement of the commission's work from step 6 was completed using GIS software to map the green infrastructure at a 1:100 scale. The hand drawn delineation was digitized. From this digitization, the delineation was edited to improve accuracy and agreement with shared features using those features' boundaries and aerial photo interpretation as edge guides. For the most part, the feature edges from the unfragmented forest areas polygons were traced. In this way, the green infrastructure was able to extend as close as possible to the actual edge of use. Where possible, corridors were digitized to be 1,000 feet wide. The final product, a contiguous polygon, represented the green infrastructure and was used to identify the area of interest for conservation protection.

Following completion of the Green Infrastructure layer, the Natural Resource Co-Occurrence layer was clipped to its boundaries.

Step 8: Parcel-Based Analysis

A parcel selection was taken from the Town-wide parcel base for those lots intersecting the area of green infrastructure, henceforth "study area parcels". The next step involved a union operation in ArcInfo to split resource attributes at parcel lines and to permit calculating a summary of resource scores by parcel.

The extent of each natural resource score was normalized by resource acreage, using the formula areascore = (natural resource value) * (natural resource acreage). A total areascore for each parcel was obtained through a summary function. This information was transferred to the whole parcel as a unique attribute.

Two bonus values were applied for conservation abutters. Parcels that abutted the Cramer/Evans Easement, Dearborn Estate, Flint Hill, Bond Property, and Robinson Hill where the gravity model values were strongest, received a bonus of 20% of total resource value.

Step 9: Parcel Selection Refinement

Following extensive review of the top 50 parcel selection, Conservation Commission members felt that an additional selection process was necessary to identify a larger number of target parcels and to limit the list by removing parcels with pending development proposals or with limited development potential. This set was further culled by removing parcels with any of the following criteria: parcels slated for industrial or commercial development, parcels that would have no development due to natural constraints (wetlands, sleep slopes, etc.), parcels that are town or state property, and parcels that are already conserved or developed.

High priority areas were further identified as low cost or high cost. Low cost parcels were those that had significant development limitations that would effectively hinder development, including wetlands or limited access. All other parcels were considered high cost.

Step 10: Conclusions

Following review of the parcel selection refinement in step 9, Conservation Commission members opted to include all of the high and low cost parcels as equal priorities. Information was culled from the GIS to include each parcel's location, relative natural resource value, priority type, GIS appraisal value and acres. This information was presented in table form to the group.

Additionally, further analysis was presented to establish a marketing case for the program and to illustrate the scope of recommendations. Estimates of the relative percent of open space existing and proposed was calculated, as well as an estimate of the total number of potential housing units was tallied from the GIS appraisal information.

Appendix C – Priority Parcels

Raymond Top Priority Parcels by Total Area Score

Map	Lot	Conservation Bonus	Acres	Total Area Score	High/Low Cost
38	30	20%	247.01	19674.02	High
45	1	20%	100.73	14802.98	Low
33	19	20%	122.01	14346.65	High
20	1	20%	193.21	13442.36	High
45	8	20%	75.89	12232.20	Low
46	31	20%	114.67	11147.60	Low
10	1	-	292.93	10972.89	Low
44	46	20%	80.30	10319.19	Low
44	21	20%	82.85	8373.29	High
39	7	20%	62.38	8230.80	Low
4	6	-	170.41	8048.29	High
39	1	20%	53.49	7650.13	High
39	2	20%	50.79	7605.47	Low
20	58	20%	168.16	6715.04	High
4	5	-	115.49	6631.24	High
44	25	20%	60.63	6306.26	High
17	82	-	176.29	6070.47	High
16	75	-	192.13	5836.83	High
46	33	20%	39.72	5497.64	Low
37	2	-	83.50	5478.83	High
45	7	20%	65.15	5112.34	Low
47	3	-	103.13	5001.36	High
28-4	7	-	127.91	4912.42	Low
3	5	-	91.41	4657.78	High
32	43	20%	85.00	4099.79	High
44	3	20%	32.71	3942.27	Low
38	13	-	56.64	3918.53	High
40	14	20%	46.53	3831.65	Low
42	4	20%	78.80	3771.22	High
46	32	20%	33.89	3570.35	Low
3	4	-	92.51	3306.65	Low
45	12	-	47.20	3215.97	Low
9	15	-	92.15	2894.21	High
11	31	-	88.39	2836.56	High
10	2	-	52.08	2804.91	Low
38	12	-	66.57	2784.12	High
24	2	-	220.48	2636.63	High
41	4	20%	64.93	2608.69	High
9	36	-	79.79	2589.21	High
48	6	-	15.77	2450.09	Low
43	8	-	17.43	2448.05	Low
9	23	-	60.01	2415.58	Low
41	67	-	46.84	2415.20	High
32	44	20%	80.87	2396.67	High
11	44	-	91.67	2349.24	High
25	3	20%	43.66	2164.87	Low
27	35	-	36.30	2052.74	Low
18	7	-	99.09	2046.62	High
45	47	-	20.29	2028.18	Low
47	1	-	0.54	1943.93	Low

Raymond Top Priority Parcels by Map and Lot Number

Map	Lot	Conservation Bonus	Acres	Total Area Score	High/Low Cost
3	4	-	92.51	3306.65	Low
3	5	-	91.41	4657.78	High
4	5	-	115.49	6631.24	High
4	6	-	170.41	8048.29	High
9	15	-	92.15	2894.21	High
9	23	-	60.01	2415.58	Low
9	36	-	79.79	2589.21	High
10	1	-	292.93	10972.89	Low
10	2	-	52.08	2804.91	Low
11	31	-	88.39	2836.56	High
11	44	-	91.67	2349.24	High
16	75	-	192.13	5836.83	High
17	82	-	176.29	6070.47	High
18	7	-	99.09	2046.62	High
20	1	20%	193.21	13442.36	High
20	58	20%	168.16	6715.04	High
24	2	-	220.48	2636.63	High
25	3	20%	43.66	2164.87	Low
27	35	-	36.30	2052.74	Low
28-4	7	-	127.91	4912.42	Low
32	43	20%	85.00	4099.79	High
32	44	20%	80.87	2396.67	High
33	19	20%	122.01	14346.65	High
37	2	-	83.50	5478.83	High
38	12	-	66.57	2784.12	High
38	13	-	56.64	3918.53	High
38	30	20%	247.01	19674.02	High
39	1	20%	53.49	7650.13	High
39	2	20%	50.79	7605.47	Low
39	7	20%	62.38	8230.80	Low
40	14	20%	46.53	3831.65	Low
41	4	20%	64.93	2608.69	High
41	67	-	46.84	2415.20	High
42	4	20%	78.80	3771.22	High
43	8	-	17.43	2448.05	Low
44	3	20%	32.71	3942.27	Low
44	21	20%	82.85	8373.29	High
44	25	20%	60.63	6306.26	High
44	46	20%	80.30	10319.19	Low
45	1	20%	100.73	14802.98	Low
45	7	20%	65.15	5112.34	Low
45	8	20%	75.89	12232.20	Low
45	12	-	47.20	3215.97	Low
45	47	-	20.29	2028.18	Low
46	31	20%	114.67	11147.60	Low
46	32	20%	33.89	3570.35	Low
46	33	20%	39.72	5497.64	Low
47	1	-	0.54	1943.93	Low
47	3	-	103.13	5001.36	High
48	6	-	15.77	2450.09	Low

Appendix D – Funding Sources

Funding Sources

There are numerous State and Federal grant programs available that can be used to promote open space protection. The status of grant programs is subject to change. However, the following include some current programs that could be used by the Town to further the open space plan goal, objectives and recommendations.

State Programs:

Community Conservation Assistance Program. UNH Cooperative Extension. Assistance for project guidance and training for community projects through municipalities and non-profit conservation groups. Contact Amanda Stone at (603) 364-5324 or amanda.stone@unh.edu

Community Impact and Express Grants Program. The New Hampshire Charitable Foundation. Provides funding to non-profit and public agencies in the fields of environment, arts and humanities, education, and health and social and community services. Contact www.nhcf.org or call (603) 430-9182.

Conservation License Plate Grant Program. NH State Conservation Committee. To promote natural resource related programs throughout NH. Conservation districts, Cooperative Extension, conservation commissions, schools, groups, and other non-profits can apply for funding. Contact Michele L. Tremblay, Executive Director, (603) 271-1092 or visit www.SCC.nh.gov

Fisheries Habitat Conservation Program. NH Fish and Game Department. To conserve fisheries habitat through a watershed approach. Landowners wishing to protect/enhance fisheries habitat can apply for funding. Contact Scott Decker, (603) 271-2744 or sdecker@wildlife.state.nh.us

Forest Legacy Program. Provides up to 75% of the purchase price for development rights to forestlands from willing sellers. Streamside land is among program priorities. Rights are held by the state in perpetuity, while the landowner retains all other rights, including the right to harvest timber. Contact NH DRED at (603) 271-2411.

Land and Community Heritage Investment Program. This is a grant program for conserving and preserving New Hampshire's most valuable natural, cultural, and historical resources. Grant applications for the purchase of land/buildings or restoration of structures are accepted from tax-exempt organizations, municipalities, or other political subdivisions of the State. Contact the SNHPC or visit www.lchip.org.

Land and Water Conservation Fund Program. The LWCF is a federal 50/50 matching grant program targeted at enhancing New Hampshire's outdoor recreational opportunities. Contact NH DRED Division of Parks and Recreation at (603) 271-3556.

Local Water Protection Grants (Drinking Water Source Protection). To protect public drinking water sources. Protection projects funded through this program have included

delineation of wellhead protection areas, inventorying potential contamination sources, development of local protection ordinances, performing land surveys as a precursor to land acquisitions, groundwater reclassification, shoreline surveys, drinking water education and outreach activities, and controlling access to source. For more information, contact Johnna McKenna at (603) 271-7017 or johnna.mckenna@des.nh.gov..

Watershed Restoration Grants for Impaired Waters and High Quality Waters. For watershed based projects to address water quality issues. Grants are given to associations, organizations, and agencies. This grant program helps to fund all aspects of watershed management including organization, building, planning and assessment. Contact Eric Williams at (603) 271-2358 or **www.des.nh.gov/wmb/swqa**

Transportation Enhancement Program. New Hampshire Department of Transportation provides funding for Environmental mitigation to address and reduce water pollution due to a highway runoff, and vehicle-caused wildlife mortality while maintaining connectivity. Cities, towns, state agencies, private industry and special interest groups may apply for Transportation Enhancement funding for their project. Federal funds will pay up to 80% of the cost of the project, with the applicant being responsible to provide matching funds. Contact SNHPC at (603) 669-4664.

Small Grants Program for Wildlife Habitat Restoration and Enhancement. NH Fish and Game Department. The Small Grants Program helps landowners with a minimum of 25 acres restore or enhance habitat for wildlife. Funding of up to $2,000 per year (no more than $6,000 over a ten-year period) is available for the creation and/or maintenance of wildlife habitat within the property. Examples of projects that may qualify for funding include: brush clearing or mowing to maintain grasslands and shrub-lands; release of old apple trees; and maintenance of woodland openings. In exchange for the grant, landowners agree that their land will remain open for non-motorized public access activities, including hunting. For more information, contact the Wildlife Division at (603) 271-2461, or wildlife@wildlife.nh.gov.

Federal Sources:

Coastal America Corporate Wetlands Restoration Partnership. U.S. Army Corps of Engineers. Voluntary public-private partnership in which corporations join forces with federal and state agencies to restore wetlands and other aquatic habitats. Contact (978) 318- 8238.

Conservation Reserve Program (CRP). USDA Farm Service Agency. For converting highly erodible land to vegetative cover. Annual rental or other incentive payments for certain activities are offered. Cropland owners and operators who have owned or leased the land for at least 1 year can apply for funds. Contact your local USDA Service Center or www.fsa.usda.gov for more information.

Conservation Stewardship Program (CStP). U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). CStP is a voluntary conservation program that rewards good land stewards and encourages producers to address resource concerns in a comprehensive manner by undertaking additional conservation activities and improving,

maintaining and managing existing conservation activities. Contact the state office at (603) 868-9931 for information

Cooperative Conservation Partnership Initiative (CCPI). U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). The Cooperative Conservation Partnership Initiative (CCPI) is a voluntary conservation initiative that enables the use of certain conservation programs with resources of eligible partners to provide financial and technical assistance to owners and operators of agricultural and nonindustrial private forest lands. Contact the state office at (603) 868-9931 for information

Conservation Innovation Grants (CIG). U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). CIG is a voluntary program intended to stimulate the development and adoption of innovative conservation approaches and technologies while leveraging Federal investment in environmental enhancement and protection, in conjunction with agricultural production. Under CIG, Environmental Quality Incentives Program funds are used to award competitive grants to non-Federal governmental or non-governmental organizations, Tribes, or individuals. Contact the state office at (603) 868-9931 for information.

Environmental Quality Incentives Program (EQIP). U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). EQIP is a voluntary program that provides assistance to farmers and ranchers who face threats to soil, water, air, and related natural resources on their land. Through EQIP, NRCS provides assistance to agricultural producers in a manner that will promote agricultural production and environmental quality as compatible goals, optimize environmental benefits, and help farmers and ranchers meet Federal, State, Tribal, and local environmental requirements. Visit http://www.nh.nrcs.usda.gov/gettingconservation.html for more information.

Farmland and Ranchland Protection Program (FRPP). U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). This program provides matching funds to help slow the conversion of farmland to non-agricultural uses. An entity holds the conservation easement deed, and land must contain important farmland soils, and a conservation plan. The easements are for 30 years, but priority is given to perpetual easements. The Farmland Protection Program is a voluntary program implemented by the United States Department of Agriculture (USDA) and the Natural Resources Conservation Service (NRCS), and provides funding to State or local governments with existing farmland protection programs to purchase conservation easements. To be eligible for the FPP, the land must be: part of a pending offer from a non-governmental organization, state tribe, or local farm protection program; on prime, unique, or other important farmland soil; covered by a conservation plan developed with/through the Natural Resources Conservation Service; privately owned; large enough to sustain agricultural production; accessible to markets for what the land produces and surrounded by parcels of land that can support long-term agricultural production. Contact Jody Walker at (603) 868-9931 ext. 103 or jody.walker@nh.usda.gov

Healthy Forests Reserve Program (HFRP). U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). HFRP is a voluntary program established for the purpose of restoring and enhancing forest ecosystems to: 1) promote the recovery of threatened and endangered species, 2) improve biodiversity; and 3) enhance carbon sequestration. Contact the state office at (603) 868-9931 for information.

Grassland Reserve Program (GRP). U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). The Grassland Reserve Program (GRP) is a voluntary program offering landowners the opportunity to protect, restore, and enhance grasslands and shrubland on their property. The Natural Resources Conservation Service and Farm Service Agency coordinate implementation of GRP. The program will conserve vulnerable grasslands from conversion to other uses and valuable grasslands for wildlife uses in New Hampshire. GRP offers producers several enrollment options: permanent easements, 30-year easements, rental agreements (10, 15, 20, or 30-year duration) and restoration agreements. For permanent easements, USDA makes a payment based on the fair market value of the property less the grazing value. For 30-year easements, USDA pays 30 percent of what would be paid for a permanent easement. For rental agreements, USDA pays 75 percent of the grazing value in annual payments for the length of the agreement. Contact Betty Anderson at 603-868-5301 or betty.anderson@nh.usda.gov .

North American Wetlands Conservation Fund. The North American Wetlands Conservation Act (NAWCA) of 1989 provides matching grants to organizations and individuals who have developed partnerships to carry out wetlands conservation projects in the United States, Canada, and Mexico for the benefit of wetlands-associated migratory birds and other wildlife. There is a Standard and a Small Grants Program. Both are competitive grants programs and require that grant requests be matched by partner contributions at no less than a 1-to-1 ratio. Funds from U.S. Federal sources may contribute towards a project, but are not eligible as match. Contact Division of Bird Habitat Conservation at (703) 358-1784 or dbhc@fws.gov.

Partners For Fish and Wildlife. U.S. Fish and Wildlife Service. The Partners Program provides technical and financial assistance to private landowners and Tribes who are willing to work with us and other partners on a voluntary basis to help meet the habitat needs of our Federal Trust Species. The Partners Program can assist with projects in all habitat types which conserve or restore native vegetation, hydrology, and soils associated with imperiled ecosystems such as longleaf pine, bottomland hardwoods, tropical forests, native prairies, marshes, rivers and streams, or otherwise provide an important habitat requisite for a rare, declining or protected species. Locally-based field biologists work one-on-one with private landowners and other partners to plan, implement, and monitor their projects. Partners Program field staff help landowners find other sources of funding and help them through the permitting process, as necessary. Contact the Eric Derleth or Greg Mannesto at (603) 223-2541 or Eric_Derleth@fws.gov or Greg_Mannesto@fws.gov

Scenic and Cultural Byways Program. Federal Highway Administration (FHWA). Roads designated under the New Hampshire Scenic and Cultural Byways Program may be eligible for federal grant money for purchase of conservation easements for scenic values along designated byways. Such funds may be used to ensure the long-term

protection of open spaces along the byways. Contact Dean Eastman at (603) 271-3914 or deastman@dot.state.nh.us

Wetlands Reserve Program (WRP). U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). The Wetlands Reserve Program is a voluntary program offering landowners the opportunity to protect, restore, and enhance wetlands on their property. The USDA Natural Resources Conservation Service (NRCS) provides technical and financial support to help landowners with their wetland restoration efforts. The NRCS goal is to achieve the greatest wetland functions and values, along with optimum wildlife habitat, on every acre enrolled in the program. This program offers landowners an opportunity to establish long-term conservation and wildlife practices and protection. Jody Walker at (603) 868-9931 ext. 103 or jody.walker@nh.usda.gov.

Wildlife Habitat Incentives Program(WHIP). U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). The Food, Conservation, and Energy Act of 2008 reauthorized WHIP as a voluntary approach to improving wildlife habitat in our Nation. The Natural Resources Conservation Service administers WHIP to provide both technical assistance and up to 75 percent cost-share assistance to establish and improve fish and wildlife habitat. WHIP cost-share agreements between NRCS and the participant generally last from one year after the last conservation practice is implemented but not more than 10 years from the date the agreement is signed. Contact Jim Spielman at (603) 868-7581 or james.spielman@nh.usda.gov.