

July 31, 2012

Ms. Jane Murray, Secretary  
NH Site Evaluation Committee  
NH Department of Environmental Services  
PO Box 95  
29 Hazen Drive  
Concord, NH 03302

RE: Docket No. 2012-001  
Application for Antrim Wind Energy, LLC  
For a Certificate of Site and Facility for a Renewable Energy Facility

Dear Ms. Murray,

Attached please find for filing in the matter the Antrim Conservation Commission's Pre-file Testimony.

Sincerely,

Peter L. Beblowski, Chairman  
Antrim Conservation Commission  
PO Box 517  
Antrim, NH 03440  
[beblowskiretep@yahoo.com](mailto:beblowskiretep@yahoo.com)

Pre-filed Testimony of Peter L. Beblowski

**THE STATE OF NEW HAMPSHIRE**

**SITE EVALUATION COMMITTEE**

**Docket No. 2012-01**

**Re: Antrim Wind Energy, LLC**

PRE-FILED TESTIMONY OF PETER L. BEBLOWSKI

Chairman of the Antrim Conservation Commission

July 31, 2012

1    **Q. Please state your name and address for the record.**

2    A. Peter L. Beblowski, 318 Smith Road, Antrim, New Hampshire.

3

4    **Q. How long have you lived at your present home?**

5    A. Since October, 1984 ... nearly twenty-eight years.

6

7    **Q. What is the purpose of this testimony?**

8    A. We (the Antrim Conservation Commission (ACC)) wish to provide the N.H. Site  
9    Evaluation Committee (NHSECs) with information regarding Antrim Wind Energy's  
10   application as it concerns regional conservation as described in the Proposed Wind  
11   power Sitting Guidelines – May 29, 2007 by Wind Energy Facility Sitting Guidelines  
12   Working Group and the Town of Antrim's functioning within the Regional network.  
13

14   **Q. Could you briefly describe your work experience and education?**

15   A. I have worked as a professional geologist for 34 years. I am a licensed  
16   professional geologist by the State of New Hampshire and a certified professional  
17   geologist by the American Institute of Professional Geologists (AIPG). The last 12  
18   years I have worked for NH Department of Environmental Services in the Waste  
19   Division as a hydrogeologist functioning as a Groundwater Permit  
20   Coordinator/project manager. Before that I was employed for 7 years as an  
21   engineering geologist with the NH Department of Transportation. Prior to working  
22   for the State of New Hampshire I worked as a consulting geologist on my own and  
23   for small engineering and geotechnical engineering consulting firms, working on  
24   projects throughout New England and Middle Atlantic States. I received my Master

1 of Science degree in Geology from the University of Vermont in 1980. My Bachelor  
2 of Arts degree was awarded from Hunter College of the City University of New York  
3 (cum laude) in 1974.

4  
5 **Q. Have you been involved with municipal or community conservation?**

6 **A.** I have been a member of the Antrim Conservation Commission for 25 years and  
7 chairman for the last 10. I was a member of the Antrim Planning Board for 3 years  
8 and helped write the Year 2001 Master Plan. I am a volunteer NH Coverts  
9 Cooperator since 2001. The NH Coverts Program is coordinated by UNH  
10 Cooperative Extension by training volunteers to promote wildlife habitat  
11 conservation and forest stewardship. As a NH Coverts Cooperator, I have provided  
12 numerous trainings at Antrim schools and for local Girl and Boy Scout troops. I  
13 volunteer for the Monadnock Conservancy as a land steward. In this capacity, I  
14 provide steward services for 10 properties in the towns of Greenfield, Harrisville,  
15 Nelson and Peterborough. I love to kayak, fish, hike and hunt in the Monadnock  
16 Region. I have participated on numerous hikes with the Harris Center, Nature  
17 Conservancy, Audubon Society and the Society for the Protection of NH Forests.

18  
19 **Q. What Regional Conservation Plans are you aware of?**

20 **A.** The Quabbin – to - Cardigan Initiative (Q2C) is a collaborative effort, to conserve  
21 and connect the Monadnock Highlands from north-central Massachusetts to Mount  
22 Cardigan and the White Mountains National Forest. The Q2C is a private-public  
23 partnership which has come together to prioritize conservation activity in an  
24 orderly and responsible fashion by targeting and connecting pieces of high quality,

ecologically significant forested and riparian habitats to provide landscape scale conservation blocks.

**Q. Does the AWE project fall into a significant un-fragmented, forest block?**

A. Yes, most of the project properties either fall in Q2C Selected Core or Supporting Landscape areas or is recognized in the State Wildlife Action Plan for possessing high ranking ecological and habitat values.

**Q. How does the ACC function with local and regional conservation groups?**

A. By trying to implement the recommendations of the Antrim Open-Space Plan, 2005 (Attached) and through the actions directed in the 2010 Master Plan Implementation Section (Chapter XIV).

**Q: What is the Antrim Open Space Plan?**

A: The Antrim Open Space Conservation Plan was created through citizen participation forums and study group charged with addressing Antrim's plan for open space conservation. The process resulted in a report providing guidance to town boards and an opens space development ordinance. The Open Space Plan was approved by a vote of the Antrim Town Meeting in 2006.

**Q. Are the Willard Pond and Willard/Tuttle Mountain priority areas for conservation in the Antrim Open-Space Plan?**

A. Yes, they are considered priority areas for targeted conservation. The Willard/Tuttle Mountain priority area is incorporated in an area that is defined as West Antrim. The West Antrim area is stated as being "the large unfragmented and

remote area west of Gregg Lake to the northern boundary of the town". This area is also a priority because of its important wildland habitat, which acts as an important wildlife corridor and is within a large unfragmented forest block.

**Q. What are the 2010 Master Plan Implementation Section Actions?**

A. The implementation actions directed towards the ACC and conservation efforts in West Antrim/ Willard Pond areas in the 2010 Master Plan are as follows:

<i><b>Implementation Action</b></i>	<i><b>Time Period</b></i>	<i><b>Agencies</b></i>	<i><b>Chapter Reference</b></i>
Actively work with the state and the other organizations involved in the Quabbin to Cardigan (Q2C) initiative to preserve those large, undeveloped areas of Antrim, particularly in the western portion of town.	Ongoing	Selectboard, Conservation Commission; Open Space Committee	Chapter III, Natural Resources and Conservation
Work to carry out the recommendations of the Open Space Committee as adopted by Town Meeting, March 2006.	Ongoing	Selectboard, Conservation Commission; Open Space Committee	Chapter III, Natural Resources and Conservation
Encourage the use of conservation easements to preserve undeveloped land.	Ongoing	Planning Board, Conservation Commission	Chapter VIII, Future Land Use

**Q. What has the ACC done to implement the 2010 Master Plan Implementation Section Actions?**

A. The ACC has worked to meet our town's Master Plan and Open Space goals for land conservation and wildlife preservation in the Willard Pond/West Antrim area.

This ends my testimony.

ACC Exhibit A: Antrim Open Space Conservation Plan

Antrim Open Space Committee

*Open Space Conservation Plan for  
Antrim*

FINAL REPORT

To the Antrim Selectmen

November 11, 2005

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Natural Resource Inventory maps

### *Acknowledgements:*

The Antrim Open Space Committee would like to thank the Board of Selectmen, Town Manager Bill Prokop and Land Use Planner Paul Vasques for their support of the Committee's work.

The Committee recognizes and thanks committee chair Charles Levesque for his leadership and expertise in moving this project forward.

The Committee would also like to thank Committee member Melissa Chapman for completing all the Geographic Information System (GIS) work associated with the Natural Resource Inventory.



## Executive Summary

The Antrim Selectmen appointed the Antrim Open Space Committee in the fall of 2004 with the following **purpose**:

*To develop an Open Space Plan for Antrim that explores ways to preserve and enhance our open spaces, in conjunction with the development that is now taking place in our town, so as to protect the character of Antrim into the future. The plan will include recommendations for the permanent protection of priority open space areas in town, the suggested methods to accomplish this, and the probable cost and benefits associated with this open space protection.*

Two recent publications help put Antrim's growth situation in context and the work of the Open Space Committee in perspective. *New Hampshire's Changing Landscape*<sup>1</sup> describes how rapidly New Hampshire is growing. Some key findings from that work confirm what we have started to see in Antrim in recent years:

- from 1990-2004, NH's population grew 17.2%, far outpacing any other state in the Northeast. The state's population is expected to grow more than 28% more by 2025 and 80% of this growth will occur in the Hillsborough, Merrimack, Rockingham and Strafford counties;
- New Hampshire is losing about 17,500 acres of forestland to development *each year* (about the size of a town in NH);
- NH is losing high quality farmland at a rapid pace – Rockingham County lost one-third of its farmland from 1997-2002 alone;
- In 1970, 139 towns in NH were classified as rural and by 2025, this number will have dropped to 72.

These data show that New Hampshire is changing rapidly and we, in Antrim, cannot assume we will not change along with the rest of the state. Implementing the Open Space Plan assures we will have some say in how we change and in keeping what is special in our town.

A second publication brings some good news in a sense. *Managing Growth: The Impact of Conservation and Development on Property Taxes in New Hampshire*<sup>2</sup>, says, clearly, that permanent land conservation is good for the pocketbook, tax-wise. It shows that communities with more land permanently conserved have lower property tax rates. Other studies called *cost of community services* show that taxes paid on undeveloped land more than pays for the services required on those lands.

A key component of the Open Space Conservation Plan for Antrim is the Natural Resource Inventory (NRI) that was completed. Essential digital maps and data were developed to understand what natural resources are special in town, forming the basis for making decisions about priority areas to conserve.

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<sup>1</sup> Society for the Protection of New Hampshire Forests, 2005 available at [www.forestsociety.org](http://www.forestsociety.org).

<sup>2</sup> The Trust for Public Land, 2005, available at [www.tpl.org.newhampshire](http://www.tpl.org.newhampshire).

As part of the Committee work, residents of Antrim were asked to participate in the process of developing a plan and did so enthusiastically. A written and web-based survey was initiated and two public meetings were conducted to hear what people in town feel is important to conserve.

After taking all the NRI and public comment info into account, the Open Space Committee developed the following priorities for permanent land conservation in Antrim:

**Criteria -**

- add to protected land – to add to protected land enhances all the values already protected by these landscapes
- aquifers – to protect drinking water supplies
- riparian areas (streams and lakes) – to assure recreation resources and wildlife habitat
- agricultural land – to provide food, rare diversity, habitat mosaic
- corridors – to allow for wildlife movement from one conserved area to another
- unfragmented forest lands – to provide a diversity of habitat for wildlife
- scenic values – to enhance the aesthetic qualities & recreation values of the landscape for tourism
- historic lands – to connect us to our roots, and provide for education & our cultural heritage

Based on these criteria, the following areas of Antrim are recommended for permanent land conservation:

**1. Adding to protected land:**

- **west Antrim**
- **Campbell Pond/East Antrim**
- **Gregg Lake/Central Antrim**
- **McCabe**

**2. Aquifers:**

- **southern Contoocook**
- **northern Contoocook**

**3. Riparian areas:**

- **Contoocook River Corridor**
- **Campbell Pond outflow (Cochran Brook)**
- **North Branch/Steele Pond**
- **Gregg Lake**
- **Great Brook**
- **Willard Pond**

**4. Agricultural land (along the Contoocook River corridor)**

## 5. Wildlife corridors

- Cochran Brook (Campbell Pd. South)
- West Antrim – the large block connecting with adjacent towns
- (Previously Denison) Pond to Contoocook
- Riley Mt. to Contoocook

## 6. Unfragmented forestlands

- West Antrim
- Campbell Pond south
- Gregg Lake west

## 7. Scenic areas

- other areas listed above that are accessible to people
- consideration for entry points to town

## 8. Historic lands

- Meetinghouse Hill
- Greystone Lodge area

The Committee recommends that the primary tool that should be used to assure permanent conservation of these key areas in Antrim is **conservation easements** (permanent deeds restricting what can occur on land). This tool should be used only in a willing seller/willing buyer scenario. The decision to place a conservation easement on land in town should be solely up to the private landowner.

The priority areas listed above represent thousands of acres in Antrim. Using a combination of conservation easement donations and purchases, it is estimated that this effort will cost substantial sums over the next 20 years. These funds need to come from many sources – federal, state, town and private – in order for the task to be successful. A town bond to begin this work will be requested at town meeting in 2006.

The Open Space Committee met monthly since being appointed in the late fall of 2004. The Members of the Committee were:

Linda Bundy	Gil Geisz	Loranne Carey Block
Melissa Chapman	Ben Pratt	Charles Levesque, Chair
Robert Edwards	Eric Tenney	
Marshall Gale	Rod Zwirner	

## 1.0 Introduction

It is unlikely that James Aiken, one of the first settlers in Antrim in 1766, or other Scotch-Irish brethren, could envision a day when concern for population growth would threaten the rural nature of the area. As they hacked farms and livings out of the wild forest-dominated landscape of the 23,367 acre town, they probably thought that nature would always dominate.

In 2004, the Antrim Selectmen appointed a first-ever Open Space Committee to look at the changes coming to Antrim as a result of the development boom being experienced in New Hampshire. They charged the committee with recommending areas that should be permanently conserved for this and future generations in order to maintain that character and culture so cherished by Antrim residents. This effort is not about stopping growth – instead, it seeks to understand what is important about the undeveloped open spaces in Antrim and create a plan to keep them that way – forever. An open space plan will provide a balance to the development that is ongoing in town. It will help determine what is important to keep undeveloped *as part of Antrim's development plan*.

A volunteer committee of ten Antrim residents has worked hard since late 2004 to deliver this report. They have learned about the issues surrounding growth and permanent land conservation and have listened to what people in town have to say about these issues.

Antrim is a great place to live, work and recreate. Preserving its rural character will not come about by accident. This report recommends a plan to be implemented that will keep the key open space areas in Antrim as they are – for today's and tomorrow's residents.

## 2.0 Charge to Committee and Process

The Antrim Selectmen appointed the Open Space Committee with the clear intention of receiving a report with complete recommendations within a year.

The following is the amended charge to the committee adopted by the Antrim Open Space Committee (AOSC) at the organizational meeting on December 7, 2004 and subsequently approved by the Selectmen:

**PURPOSE:** To develop an Open Space Plan for Antrim that explores ways to preserve and enhance our open spaces, in conjunction with the development that is now taking place in our town, so as to protect the character of Antrim into the future. The plan will include recommendations for the permanent protection of priority open space areas in town, the suggested methods to accomplish this, and the probable cost and benefits associated with this open space protection.

**SCOPE:** Study the current open space land in the town of Antrim to determine the natural resource attributes of these lands and their current level of permanent protection. Look into the needs of the town and the cost associated with growth. Given that open space is usually an economic asset, determine the positive aesthetic, natural resource, recreational and economic values of having priority open space in Antrim permanently protected.

**COMPLETION OF TASK:** The committee will complete its task by December 1, 2005. They will present their findings and recommendations to the Board of Selectmen. Once the report is accepted, the committee will be disbanded.

Definitions:

**Open space/open space lands:** lands not currently developed.

**Permanent protection** (of land): Legal techniques such as conservation easements and public land purchases with deed restrictions or easements that assure the land will remain perpetually undeveloped (or where development will be very limited).

### 3.0 Natural Resource Inventory

In order to make information-based decisions about the most important land areas for permanent conservation in Antrim, good natural resource information is essential. This information took the form of a Natural Resource Inventory (NRI). Open Space Committee member Melissa Chapman took the lead in compiling the information that formed the basis for discussions about potential priority areas for conservation.

Digital data formats used for the NRI were acquired through Southwest Regional Planning Commission in Keene, NH and from New Hampshire Fish and Game's Coarse Filter Analysis of Potentially Significant Wildlife Habitats. Maps are available in 3 forms:

- 30 x 40 inch maps accompany the report and are on deposit at the Antrim Town Hall
- 11 x 17 inch maps are available for inclusion in the appendix for the report
- a CD containing all maps saved in ArcMap format and as PDF's

All maps are at 1:18,000 scale except the Unfragmented Lands which was created at 1:24,000 scale to accommodate unfragmented land areas that overlap other surrounding towns. It is also important to understand that data used for these maps is the most current available, however, ground truth surveys may be needed to verify current status of land use and geographic features.

The map titles are:

- Town of Antrim Basemap
- Resource Extraction Potential
- Resource Extraction Potential – Timber
- Sensitive Resource Areas
- Unfragmented Lands

These maps can be found in the Appendix of this report.

#### **Town of Antrim Basemap – 1:18,000 scale**

This map shows basic geographic features of the town and serves to orient the reader to these features. Geographic features included on this map are:

- Roads displayed as class I – VI
- Topography -20 ft. contour interval
- Watershed Boundaries indicated as 3 sub-watersheds of the Contoocook River (the North Branch watershed and 2 sub-watersheds both having the name of Upper Contoocook River Watershed)
- Wetland clusters – three or more wetland areas less than 5 acres in size, within 1 km of each other, and within the same unfragmented habitat block. This data was selected from a combination of National Wetlands Inventory (NWI) palustrine (vegetated) and hydric soils

- Palustrine Wetlands – non-tidal wetlands dominated by trees, shrubs, and persistent emergent herbaceous plants
- Wetlands > 5 acres – include palustrine wetlands and associated hydric soils
- Rivers/Streams
- Lakes/Ponds
- Palustrine Wetlands – selected from NWI data and includes mixed wetlands with emergent vegetation
- Antrim Conservation Lands
- Town boundaries

The town of Antrim may be divided into an eastern and western half. Patten Hill and Meetinghouse Hill in the central to south central part of the town and Riley Mountain and Gibson Mountain in the north to northeastern part of town serve as the physical boundaries. The western side of this boundary has very hilly terrain while east of these hills and mountains the topography slopes toward the Contoocook River. There are only 2 Class I or primary roads running along the eastern border and northwest corner of the town. A majority of the population is located in the eastern and southeastern part of the town.

There are 2 major lakes, Greg Lake (200.8 acres) and Pierce Lake (483.4 acres) the latter extending across the town boundary into the adjacent town of Hillsborough. Three large ponds are located within the town including Willard Pond (110.4 acres) Steele Pond (36.2 acres) and Campbell Pond (16.6 acres). Both lakes and ponds provide habitat for wildlife as well as recreational use for the town. Campbell Pond serves as the back-up reservoir for the town's water supply. A conservation easement for Campbell Pond and the surrounding land is in the final stages of negotiation with The Monadnock Conservancy.

The Contoocook River runs north along the eastern border of the town. Within the river's fertile floodplain or riparian zone reside a variety of habitats including marshes, riparian forests, and agricultural fields. There are 4 stream tributaries that ultimately flow into the Contoocook River each serving a sub-watershed. These streams are Salmon Brook, Great Brook, Cochran Brook, and North Branch. Each of these streams and major river provide wildlife habitat and corridors between the surrounding upland forests. Palustrine (vegetated) wetlands along the river and the many stream tributaries support a rich diversity of plant and animal life.

Conservation and public lands within Antrim total 3,653.8 acres. These protected lands are 16% of the land area within the town.

### **Resource Extraction Potential Map – 1:18,000 scale**

This map shows natural resource features used for extractive purposes. These features are or have been subject to human impact and have implications for future preservation and or management efforts. Geographic features included on this map are:

- Roads - portrayed as a single class
- Topography - 20 ft. contour interval
- Streams/Rivers
- Lakes/Ponds
- Open Habitat as either current agricultural lands or open fields. This data was selected from the 2001 Landcover Classification using 30m resolution Landsat (satellite) images. In this classification, there is no distinction between agricultural and open fields and therefore appear as the same feature. These features will also appear blocky or “pixelated” at certain scales due to the 30m resolution of Landsat data.
- Soils - showing locations of prime farmland soils and farmland of local importance. Soil units are from USDA soil maps of Hillsborough County. These features only indicate the soil type not the actual land use in these locations.
- Stratified Drift Aquifer - Sand/Gravel deposits with high transmissivity.

Antrim is blessed with several large stratified draft aquifers. These areas include the large corridor in the Contoocook River lowlands portion of town. Other areas containing these aquifers are located in the northern and northwestern part of the town. Several aquifers underlie the North Branch stream and the associated large wetlands adjacent to the stream. Another aquifer extends to the south beginning at the southern end of Pierce Lake. Stratified drift aquifers are extremely important because these are the areas that good quality groundwater is available in very large quantities, providing future opportunities for town owned drinking water wells for the developed downtown area of town.

Soils provide a valuable natural resource for Antrim. Prime farmland soils are those best for growing food, forage, fiber, and oilseed products. These soils are scarce and are primarily located within the Contoocook River Valley in the eastern portion of the town although a few other areas are indicated as well. Their presence doesn’t necessarily indicate current land use as agricultural areas, but may indicate areas that were previously farmed. Antrim residents are familiar with the Contoocook River Valley farms as they are quite visible from Route 202. Other soils of local importance are scattered throughout the eastern portion of the town and extend south of Gregg Lake to the town border with Hancock.

### **Resource Extraction Potential - Timber Map - 1:18,000 scale**

This map shows distribution and extent of timber resources. It also includes similar features found on the Resource Extraction Potential map which are subject to human impact. Timber data was selected from the 2001 Landcover Classification using 30m resolution Landsat images and has an overall accuracy of 82.2% at the full 23-class level. Again, these features will appear blocky or “pixelated” at certain scales. Geographic features included on this map are:

- Roads - portrayed as a single class
- Stream/Rivers
- Lakes/Ponds
- Agriculture/Field - see description for Open Habitat above



- Landcover – shows location and extent of the dominant forest cover type including beach/oak, hemlock, mixed coniferous/deciduous forest, orchards, other hardwoods, paper birch/aspen, spruce/fir, and white/red pine
- Stratified Drift Aquifer – sand/gravel deposits with high transmissivity

Antrim is covered with large tracts of second and third-growth forests comprised of mixed northern hardwood species and white pine. The mixed hardwoods are distributed throughout the town. A greater distribution of beech/oak forest and other northern hardwood forests can be found in the central to west central areas of the town. Timber management can occur anywhere in town since markets for all species of timber are available within trucking distance. Several practical and physical limitations do exist, however, that make it difficult to manage and harvest timber from certain areas in town. Access from public roads is a key factor in forest management since trees are all hauled to market via log truck. Some areas in the western portion of town, where public roads are few, are nearly inaccessible in that regard though anyone willing to spend the money could, theoretically, access these areas. This is unlikely to occur, however, unless the timber being harvested has enough value to pay for the access roads.

A second factor limiting timber management and harvesting are steep slopes. The Sensitive Resource Areas map in the next section highlights areas with over 25% slope associated with Willard, Robb and Bald Mountains. While not impossible to harvest timber in these areas, northeastern timber values do not allow access to such terrain in an economical way.

### **Sensitive Resource Areas Map – 1:18,000 scale**

This map shows habitat areas that are highly sensitive to human impact. These areas provide wildlife habitat and therefore have implications for preservation, management and protection. Geographic features included on this map are:

- Roads – portrayed as a single class
- Streams/Rivers
- Lakes/Ponds
- Slope > 25% - these hill slopes may be sensitive erosional areas
- Significant Wetland Habitat – this data includes NWI palustrine emergent, small wetland clusters (three or more wetland areas less than 5 acres in size, within 1 km of each other), and wetlands > 5 acres and riparian corridors identified by a 300 ft. buffer around perennial streams and surface waters. These areas serve as travel and movement corridors for wildlife.
- Stratified Drift Aquifer – sand/gravel deposits with high transmissivity
- Topography – 20 ft. contour interval
- South Facing slopes>10% - These south, southwest, and southeast facing slopes tend to be drier sites and support forest cover types that are high mast (seeds, nuts) producing habitats for wildlife.
- Hydric soils – these soils are associated with wetland areas

Roughly 4,500 acres of significant wetland habitat is distributed across Antrim and extend into surrounding towns as more extensive wetland systems. Wetlands are extremely important natural resources because of their capacity to support plant and animal biodiversity, act as a natural filtering systems for watersheds, prevent flooding by storing surface water, slow water runoff and retain sediments to keep streams and rivers clear, and provide recreational areas for hunting, fishing, bird watching, and boating. In conjunction with the roughly 1,300 acres of lakes and ponds as well as the numerous rivers and streams, Antrim is rich in aquatic resources.

Antrim's topography of hills, small mountains, and river/stream valleys are resources that are sensitive to factors contributing to erosion such as timber harvesting, construction, and sand/gravel excavation to name a few. Steep slope areas > 15% and rock outcrops are unique ecosystems of plants and animals. Most steep slope areas lie on the western half of Antrim with additional areas occurring along Riley and Gibson Mountains in the northeast corner of the town.

### **Unfragmented Lands Map – 1:24,000 scale**

Unfragmented lands are areas that are relatively undeveloped and are free of fragmenting features such as roads and development. Data for this map are based on the 2001 Land Cover Classification provided by GRANIT. Approximately a 350 – 374 ft. buffer from each side of the centerlines was added to Legislative classes I-V roads and a 257 – 280 ft. buffer for private roads. Only private roads that intersect, or are extensions of a NHDOT class I-V road were included. The remaining areas outside these buffered areas are considered unfragmented lands. Unfragmented areas are displayed in 7 different classes, each class representing a range of size in acres. The larger areas provide significant wildlife habitat and have implications for protection. In addition to the unfragmented lands, prime farmland soils are included in this map as a resource that is on the decline in New Hampshire. Finally, conservation lands show areas that are currently in some type of protected status. Geographic features included on this map are:

- Streams/Rivers
- Lakes/Ponds
- Prime farmland soils - Soil units from USDA soil maps of Hillsborough County
- Agriculture/Fields – from 2001 Landcover Classification (Landsat images 30m pixel)
- Antrim Conservation Lands – Updated Feb 7, 2005 (Includes new parcels not showing in Region Conservation Land layer
- Unfragmented Lands

Antrim's largest unfragmented land parcels are located in the western half of the town and extend into surrounding towns. Information about two of the largest unfragmented parcels is given in the table below. Many wildlife species require substantial undisturbed tracts of land with a variety of habitat types for food resources, shelter, and breeding territories.

Fortunately, wildlife may also exploit some of the less extensive tracts of unfragmented lands as long as travel corridors are maintained for movement into adjacent tracts. These landscape linkages typically occur in riparian areas (floodplains), ridge tops, and forest galleries.

Conservation lands within the larger unfragmented land parcels are located primarily in the southwestern and northwestern part of the town. Several of these protected lands are parcels that extend across the town boundaries into Hancock and Stoddard. The total area protected as conservation and public lands in Antrim is 3,628.2.

### **Statistics of Interest - Antrim<sup>3</sup>**

Land Area - 23,367.6 acres

Water Area - 715.7 acres

Population 1950 - 1,030

Population 2003 - 2,545

Total Land Value 1998 - \$28,518,730

Total Land Value 2003 - \$54,066,560 (90% change from 1998-2003)

Current Use Acres -15,951

Prime Agricultural Soils - 747.1 acres

Percentage of Prime Agricultural Soils Permanently Conserved - 9%

High Yield Aquifer Lands - 350.7 acres

Area of High Yield Aquifer Lands Permanently Conserved - 0 acres

Municipal Well-Head Area - 553.6 acres

Area of Well-Head Lands Permanently Conserved - 0 acres

Area of Permanently Conserved Land in Antrim - 3,626.2 acres

Percentage of Permanently Conserved Land - 16%

## 4.0 Public Involvement

The Antrim Open Space Committee sought input from the citizens of Antrim to determine the general types of open space land that, left undeveloped, are important to preserving the town's character and specific sites in Antrim that are in those categories. In March of 2005, the AOSC set up an informational display in Town Hall on voting day and at Town Meeting. People were invited to mark places they felt important to preserve in Antrim on an aerial photo of the town and were also encouraged to complete a survey. The survey was widely announced in local media and The Limrik for any residents who wished to participate. The results, found in the Appendix, provided a wealth of information and residents' preferences for the Committee deliberations.

On June 14, 2005 the AOSC held a public meeting to inform people of the committee's purpose and progress and to seek input regarding the land types and specific areas residents believe are priorities for permanent conservation in Antrim. The Natural Resource Inventory maps were posted. After an explanation of the maps, attendees circulated to view them more closely. The group then came together to record suggestions from those present. Two questions were considered: 1. What kinds of open space land are most important to permanently conserve?; and 2. What specific places in Antrim should be permanently conserved? On July 12 a second public meeting having the same format was held to afford more townspeople and non-resident land owners the opportunity to add their suggestions.

Antrim residents voiced preference for a wide variety of land types and specific areas in town that should be permanently conserved. The results of the two public meetings can be found in the Appendix.

Once a draft report was available in late September, 2005, the Committee held one more public hearing, on October 11, 2005. The comments received at that hearing can be found in the Appendix.

## 5.0 Open Space Conservation Priorities for Antrim

**5.1 Background** - Following months of work to: learn about growth and development in New Hampshire and Antrim, land conservation techniques available; and understand what Antrim residents' preferences are relative to permanent land conservation, the Open Space Committee convened on August 9, 2005 to develop the core components of Antrim's Open Space Plan – the criteria for land conservation priorities in Antrim along with the actual areas deemed essential for permanent land conservation.

Developing priorities for land conservation in Antrim is being proactive about Antrim residents' vision for the future of the town. Saying that we value the rural nature of the town and the open spaces that contribute to the culture and feel of the community means little if we have no plan to protect these values – or at least temper changes to them as time and development change the community. Developing open space conservation priorities demonstrates that we should work to keep certain areas of town perpetually undeveloped as Antrim continues to grow. In a nutshell, this plan is about “conserving what needs conserving” while we “build what needs to be built” in town.

Two recent publications help put Antrim's growth situation in context. *New Hampshire's Changing Landscape*<sup>4</sup> describes how rapidly New Hampshire is growing. Some key findings from that work confirm what we have started to see in Antrim in recent years:

- from 1990-2004, NH's population grew 17.2%, far outpacing any other state in the Northeast. The state's population is expected to grow more than 28% more by 2025 and 80% of this growth will occur in the Hillsborough, Merrimack, Rockingham and Strafford counties;
- New Hampshire is losing about 17,500 acres of forestland to development *each year* (about the size of a town in NH);
- NH is losing high quality farmland at a rapid pace – Rockingham County lost one-third of its farmland from 1997-2002 alone;
- In 1970, 139 towns in NH were classified as rural and by 2025, this number will have dropped to 72.

These data show that New Hampshire is changing rapidly and we, in Antrim, cannot assume we will not change rapidly along with the rest of the state. Implementing the Open Space Plan assures we will have some say in how we change and how we permanently conserve special places in our town.

A second publication brings some good news. *Managing Growth: The Impact of Conservation and Development on Property Taxes in New Hampshire*<sup>5</sup>, says, clearly, that permanent land conservation is good for the pocketbook. It shows that communities with more land permanently conserved have lower property tax rates. Numerous *Cost of Community Services Studies* in the region confirm this – undeveloped land takes in more tax revenue than it costs in services.<sup>6</sup>

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<sup>4</sup> Society for the Protection of New Hampshire Forests, 2005 available at [www.forestsociety.org](http://www.forestsociety.org).

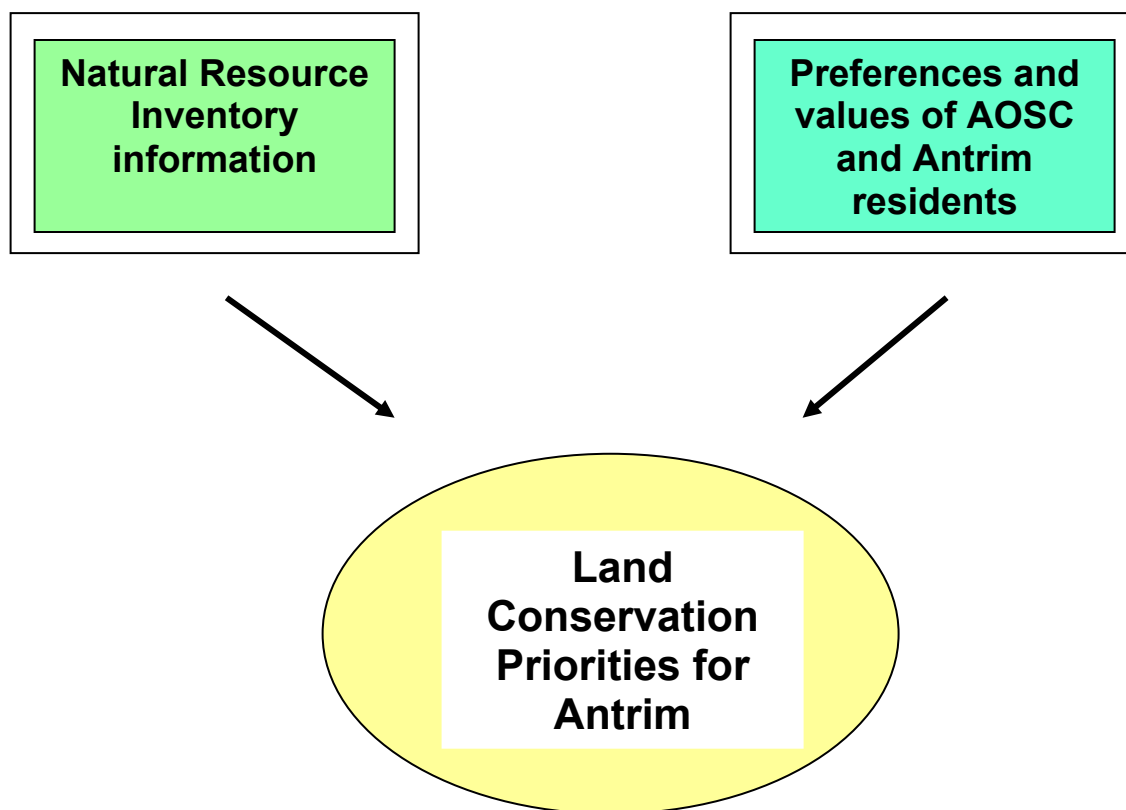
<sup>5</sup> The Trust for Public Land, 2005, available at [www.tpl.org.newhampshire](http://www.tpl.org.newhampshire).

<sup>6</sup> Cost of Community Services Studies – an economic study methodology developed by the American Farmland Trust that looks at the ratio of tax revenue to cost of services required from three land-use types: residential, commercial/industrial, open space.

## 5.2 Land Conservation Priorities for Antrim

The AOOSC combined what it learned from the Natural Resource Inventory, the committee members' personal values and priorities, and Antrim residents' preferences from the survey and public meetings. Using this information, the committee established priorities for land conservation in the town.

A diagram that helps to describe this is:



The Committee developed a set of principles with which to guide its recommendations about land conservation priorities:

- Land conservation decisions will be best for the future of the entire town.
- Conservation easements will be the primary tool or strategy for protecting land.
- Land conservation priorities cannot include all land. We can't save it all.
- Land conservation will consider the context beyond the town boundaries.
- Land conservation techniques will include only a willing seller/willing buyer & educated taxpayer.

A set of land conservation criteria from which specific land conservation priority decisions would be made were developed. The reason for the criteria (the objective of protecting this kind of land) is listed after each criteria. They are:

- add to protected land – to add to protected land enhances all the values already protected by these landscapes
- aquifers – to protect drinking water supplies
- riparian areas (streams and lakes) – to assure recreation resources and wildlife habitat
- agricultural land – to provide food, rare diversity, habitat mosaic
- corridors – to allow for wildlife movement from one conserved area to another
- unfragmented forest lands – to provide a diversity of habitat for wildlife
- scenic values – to enhance the aesthetic qualities & recreation values of the landscape for tourism
- historic lands – to connect us to our roots, and provide for education & our cultural heritage

Based on these criteria, the following areas of Antrim are recommended for permanent land conservation (also see map on Page 20):

**1. Adding to protected land:**

- **West Antrim – the large unfragmented and remote area west of Gregg Lake to the northern boundary of the town.**
- **Campbell Pond/East Antrim – the unfragmented area surrounding Campbell Pond.**
- **Gregg Lake/Central Antrim – west and east shores of Gregg Lake including Patten Hill area to the east.**
- **McCabe Forest – area surrounding the Forest Society McCabe Forest in east Antrim.**

**2. Aquifers:**

- **southern Contoocook – land area east of Route 202 south of the Elm Ave & Route 202 intersection along the Contoocook River.**
- **northern Contoocook - land area east of Route 202 from the Hillsborough border south to the Elm Ave. intersection of Route 202.**

**3. Riparian areas:**

- **Contoocook River Corridor – the entire western shore of the Contoocook River in Antrim.**
- **Campbell Pond outflow (Cochran Brook) – the stream flowage area from Campbell Pond to the Contoocook River.**
- **North Branch/Steele Pond – area immediately adjacent to the North Branch of the Contoocook River in North Antrim.**
- **Gregg Lake – Lake shore area.**
- **Great Brook – Great Brook flowage through town.**
- **Willard Pond – those few areas surrounding Willard Pond in south Antrim that are not already permanently conserved.**

4. Agricultural land (along the Contoocook River corridor) – the farmland in and near the floodplain of the Contoocook River east of Route 202.

5. Wildlife corridors

- Cochran Brook (Campbell Pd. South) – same as the Cochran Brook drainage described above.
- West Antrim – the large block of remote lands connecting with adjacent towns west of Gregg Lake.
- (Previously Denison) Pond to Contoocook – East Antrim drainage to the Contoocook River.
- Riley Mt. to Contoocook -

6. Unfragmented forestlands

- West Antrim – see above for description.
- Campbell Pond south – the area immediately surrounding Campbell Pond.
- Gregg Lake – large area surrounding Gregg Lake to east and west.

7. Scenic Areas

- other areas listed above that accessible to people
- consideration for entry points to town from Route 202 in the north and south.

8. Historic lands

- Meetinghouse Hill – north of Antrim Grange.
- Greystone Lodge area – near the Hancock border in the southeast part of town.



**Antrim Open Space Protection Priorities**

**Legend**

- Roads**
  - Priority Areas for Land Conservation
- Wetland Cluster (NWI, Soils)**
- Wetland 5+ acres (NWI, Soils)**
- Streams/Rivers**
- Lakes/Ponds**
- Palustrine Wetlands**
- Conservation Lands**

**Towns:** Nelson, Stoddard, Hancock, Hillsborough, Deering

**Scale:** 0 0.35 0.7 1.4 Miles

**Map prepared by:** Dennis Chapman and Pauline Smith (2008)

## 6.0 How to Complete Protection of Conservation Priorities and Costs

### 6.1 Techniques for Permanent Land Conservation in Antrim

The Committee recommends that permanent conservation of the priority areas be accomplished through the use of **conservation easements**<sup>7</sup> as the primary tool. Land under conservation easement remains in private ownership and on the property tax rolls but is prevented from being developed. Conservation easements can be held by the town or private land conservation organizations. The Committee recommends that conservation easements be held by qualified non-profit conservation organizations that have the expertise and resources to carry on the responsibility in perpetuity of assuring these lands are not developed. Conservation easements can be acquired through purchase or donation from landowners. This tool should be used only in a willing seller/willing buyer scenario. The decision to place a conservation easement on land in town should be solely up to the private landowner.

All the tools to be used to permanently conserve the areas listed above include:

- Conservation easement acquisition by town or conservation organization – **Priority method**
  - donation
  - purchase
- Fee<sup>8</sup> acquisition by town or conservation organization
  - donation
  - purchase
- Planning/zoning/regulation

While planning/zoning/regulation are viable sets of tools to conserve some areas as part of development projects, they should not be considered as a substitute for the use of conservation easements to permanently conserve land in Antrim. Despite this, we recommend that the Planning and Zoning Boards learn about the Priority Areas for permanent land conservation identified in this report and urge developments in those areas to use conservation development techniques and conservation easements as part of approval processes. It should be noted that the Priority Areas identified fall in all the zoning categories in Antrim.

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<sup>7</sup> Conservation easement – a perpetual legal deed that runs with the land, regardless of the owner, that limits or completely restricts the use of the land by the landowner. Generally, conservation easements allow for forestry and agricultural uses but not development.

<sup>8</sup> Fee acquisition refers to acquiring land outright.

## **6.2 Estimated Cost and Funding Sources**

While specific boundaries have not been developed for the areas recommended for permanent land conservation in Antrim, these areas collectively total in the thousands of acres. Some conservation easement acquisitions will occur through donations made by landowners. Some of the conservation easements already in existence in Antrim came about in this fashion. Others require funds to purchase along with acquisition costs associated with these real estate transactions (surveys, title searches, legal fees, etc.).

Present cost estimates associated with conservation easement acquisition range from \$200.00 to \$1,000.00 per acre in the Monadnock Region. Over the next twenty-years, it is reasonable to conclude that today's conservation easement acquisition cost will only continue to escalate. In order to accomplish the goal of permanent land conservation that is articulated in this report, the town must design and implement an action plan to begin the process of conserving the thousands of acres recommended in this report for conservation. This is in addition to donated land value that will result directly from landowners who are willing to donate conservation easements or portions of the value of easements.

Sources of funding for this important work includes: town appropriations, state grants, federal grants, private foundation sources, and private donations.

## 7.0 Recommendations – Where We Go from Here

Based on the original charge given the committee by the Selectmen, the work of the Antrim Open Space Committee is complete with the issue of this report. The work of implementing the Open Space Conservation Plan, however, has not begun.

The Open Space Committee ends its work with several recommendations:

1. That the Selectmen create a permanent Open Space Committee whose charge is to implement the *Open Space Conservation Plan*. All land conservation work in Antrim should be under the jurisdiction of the permanent Open Space Committee. This work should include educating Antrim residents about land conservation and growth issues. The Committee, in carrying out its charge, should also seek out and raise as much funding as possible from all sources, including town, state, federal and private sources.

The Committee recommends that this new permanent Open Space Committee be a direct adjunct to the Board of Selectmen, being responsible to and reporting directly to the Board. The Committee further recommends that, in order to facilitate good communication between the permanent Open Space Committee and the Conservation Commission, that at least one member of the Conservation Commission be appointed to the permanent Open Space Committee.

2. A bond article should be placed on the warrant in 2006 requesting \$ 500,000 to be used to begin implementation of the *Open Space Conservation Plan*. This bond can be structured so that the issuance only occurs when needed (when money is to be spent on acquisition) and interest and principle payments begin only then. This kind of bond will require a 2/3 majority vote the first time it is placed on the warrant and, when subsequent portions are placed on the warrant in future years for appropriation purposes, a simple majority vote is required.

# APPENDIX

## 1. Open Space Public Involvement

### A. Survey (55 responses received)

Question 1. Do you have suggestions for additional ways to use open space?

Numbers indicate how many surveys had that same response.

Education **4**

Just leave it the way it is **2**

Protect historically significant sites such  
as old mills, cemeteries **2**

Star gaze; astronomy **2**

Sunrise

Sunset

Natural landscape features

Keep land natural

Town events/activities

Hiking

Biking

Fishing

Hunting

Ski/snowshoe

Picnic area

Dog park

Land management

Logging

Nature tours

Wildlife management

Habitat preservation

Gardens

Botany

Forestry

Farming

Fields

Roadways

No hunting

Protect land that abuts or links with  
protected land in neighboring towns to  
create tracts and greenways

Don't allow too much commercial or  
real estate development, yet allow  
individuals to subdivide their large  
parcels of land with limits of size of  
building lots(10-15 acres)

Cross country ski trail where  
snowmobiles and ATV's are not  
allowed; could be through developed  
and undeveloped land

Prohibit all use of off-road vehicles,  
including snowmobiles.

Old roadways and trails: access with  
low impact

Limit hunting to nowhere near  
residences

More recreational programs for adults  
and seniors: guided walks, tennis lessons,  
softball league

Question 2. Do you presently use open space land for any purposes? If so, what are they? Where is the land you use? (Either your own land or owned by others)

**Purpose**

Hike 10

Walk 6

Cross country ski 4

Snowshoe 3

Run 2

Mountain bike 2

Recreation 2

Nature observation 2

Hunt 2

Wildlife observation 2

Fish 2

Bird watching 2

Agriculture

Gardening

Willard Pond 3

Girl Scout Property 2

Meetinghouse Hill 2

Bridle Road 2

Balancing Rock area 2

White Cedar Swamp 2

And adjacent non-public land

Nahor/Patten Hill

Cutter Land/West St.

Whittemore Property

Old railroad bed

Prospect St.

Windsor Mountain

Bald Mountain

Robb Mountain

Willard Mountain

Old Pound Road

Hattie Brown Road

Campbell Pond/ Ashley Road

**Location**

McCabe Forest 6

Gregg Lake 5

Question 3. What do you see as the three most important uses for open space?

Wildlife habitat 8  
Recreation 6  
Keep it open 3  
Preserve rural character of town 3  
Conservation 3  
Education 3  
Hiking 3  
Beauty 3  
Clean air 3  
Clean water 2  
Non-motored recreation 2  
Hunting 2  
(Doing) Nothing  
Open land  
Management  
Maintain quality of life

Support property values by keeping  
Antrim a desirable place to live  
Nature preservation  
Protect environment  
Encouraging healthy, active lifestyle  
Maintain clean air with forest cover  
Mountain biking  
Snowmobiling  
Wildlife observation  
Community stability  
Limit growth  
Buffer  
Wetlands protection  
Maintain contiguous corridors of open  
space

Question 4. Please indicate any specific areas in Antrim that you believe should be protected as open space and why.

General Categories:

Wetlands 7  
Buffers around wetlands  
Watersheds  
Farmlands 5  
Forest 4  
Keeping a balance (ecologically) 3  
Mountain areas 2  
Fields  
Land that could be developed for housing and residential  
Lakes  
The most walkable land  
No ATV's or snowmobiles: too traumatic for plants and animals

Specific Sites:

Corridor from Pierce Lake down to Rt. 202 including Campbell Pond and Cochran  
Brook, beaver ponds, and wetlands. 2  
Cutter property off West St., originally targeted by Conservation Committee Antrim  
Woods Project  
Open space along Rte 202 between Hillsboro and Antrim (Platt Farm, Chauncey



Farm) Should be a green buffer between the two towns to keep the villages distinct and separate  
Platt's farmland  
Chauncey's farmland  
Tenney's farmland  
Wetlands off Rt. 9  
Open space on Rt. 9  
Girl Scout camping area  
North Branch River  
Stacy Hill Rd. extension toward Loveren Mills Rd.  
Former Hawthorne College  
Open space around river  
Gregg Lake  
Empty lot in front of Post Office should be preserved as green space.  
Gibson Mountain  
Riley Mountain

## **B. Public Meetings**

Results of Two Public Meetings on Open Space Priorities:

Mtg. #1 June 14, 2005 (11 non-committee members present plus two from press)

Results:

Open Space **Type** Preferences

(\* indicates more than one person had this response)

- Wetlands and watersheds
- Stratified aquifers
- \* Farmland in river valley
- \* Forest for wildlife (larger game and travel corridors) accessible to people
- Higher elevations- for vistas and as corridors and links between conserved lands
- Bottom lands
- South facing slopes
- Large blocks of undeveloped land (with no large structures in view)
- Mountain tops (as energy spots)
- Large blocks of forest for forest management
- Cellar holes, mill sites, and other historical sites and accessibility to those sites
- Prehistoric sites

It was also stated that:

- growth should be near town to allow other areas to be protected
- land should be protected to attract business and recreation

**Specific Sites** in Antrim

- Meeting House Hill
- Area around Gregg Lake (the watershed)



West side of Antrim (rural conservation area)  
Great Brook  
Contoocook River corridor land  
North Branch corridor  
Girl Scout property at Gregg Lake  
Lovern Mills, white cedar swamp  
North Branch Village  
Education property/ North Branch (former college)  
Campbell Pond  
Route 9 business corridor  
Whiting's property on Route 202  
Peter Moore's backyard

Mtg #2 July 12, 2005 (9 non-committee members present plus two from press)

Results:

1: What kinds of land (open space) are most important to permanently protect?

Input:

Significant wildlife habitat areas of town. Free from residential development.  
Connecting Corridors between bodies of water  
Areas of historical significance  
Watershed recharge areas that empty into lakes and ponds  
Playgrounds/recreation areas-hiking trails  
Flood plain areas  
Preserve or create attractive entrances to Antrim-green belt areas-positive first impressions for visitors to our community.  
Agricultural land preservation

2: What specific places in Antrim should be protected?

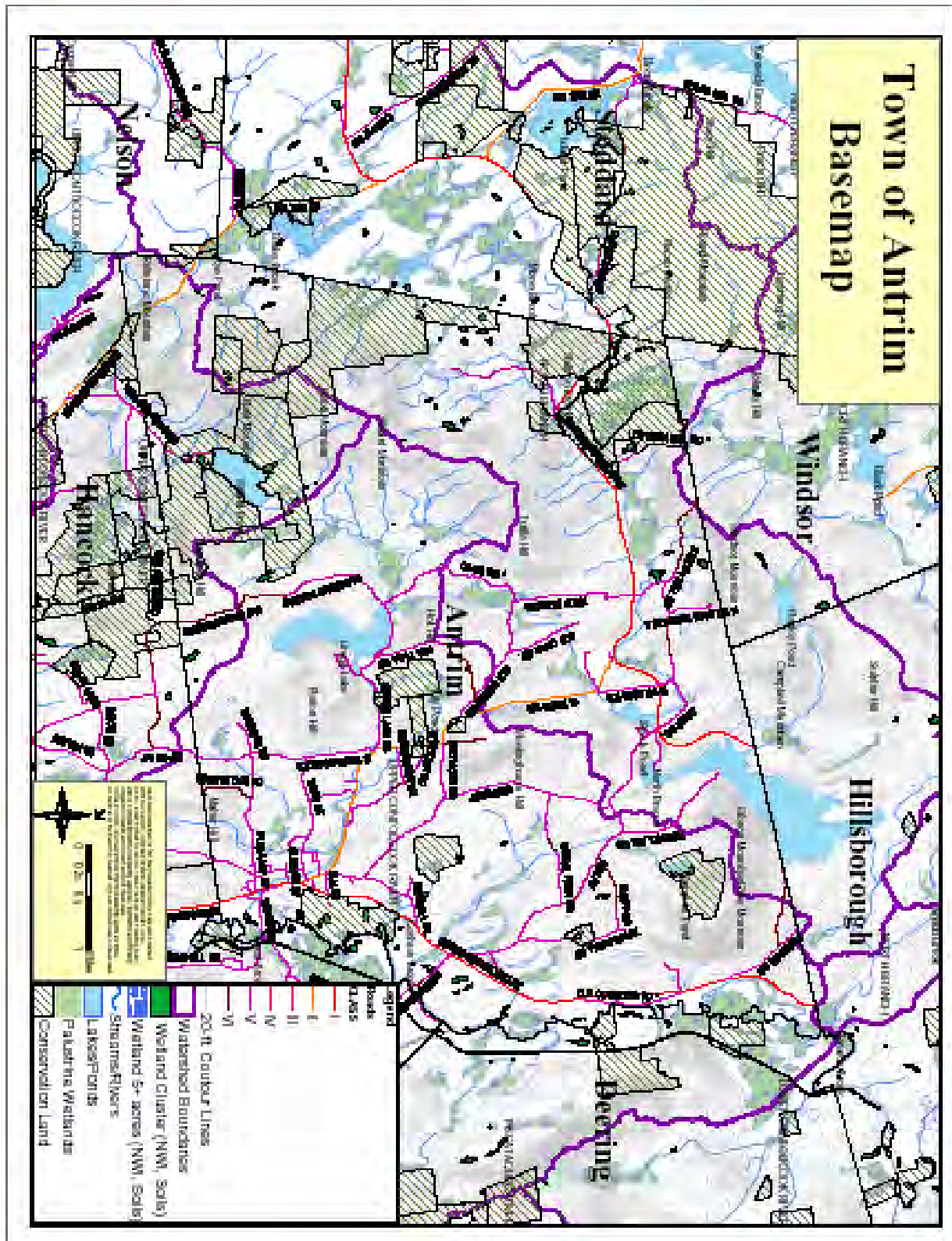
Input:

Route 9 and the entire North Branch Area-Educate people as to its great attributes.  
Gibson Mountain/Campbell Pond/Pierce Lake Road area-whatever remains that is not for sale.  
Gregg Lake and its surrounding large land parcels presently privately owned.  
Girl Scout Camp-if it became available for sale.  
Tuttle Mountain area  
Revisit Rte 9 and its General Highway Business Zoning Classification  
Consider the future impact of housing development(s) and commercial business that may spread toward Antrim on Rte 202.  
Identify "springs" in wetland areas noted on Sensitive Resource Map  
Protect the views from Cedar Swamp  
Protect our night sky from light pollution  
Develop and/or protect green space within the downtown-Town Pond, so-called (Great Brook behind Antrim Marketplace area). Preserve the aesthetic charm of our New England community.  
Protect the scenic views that presently exist from Elm Avenue.

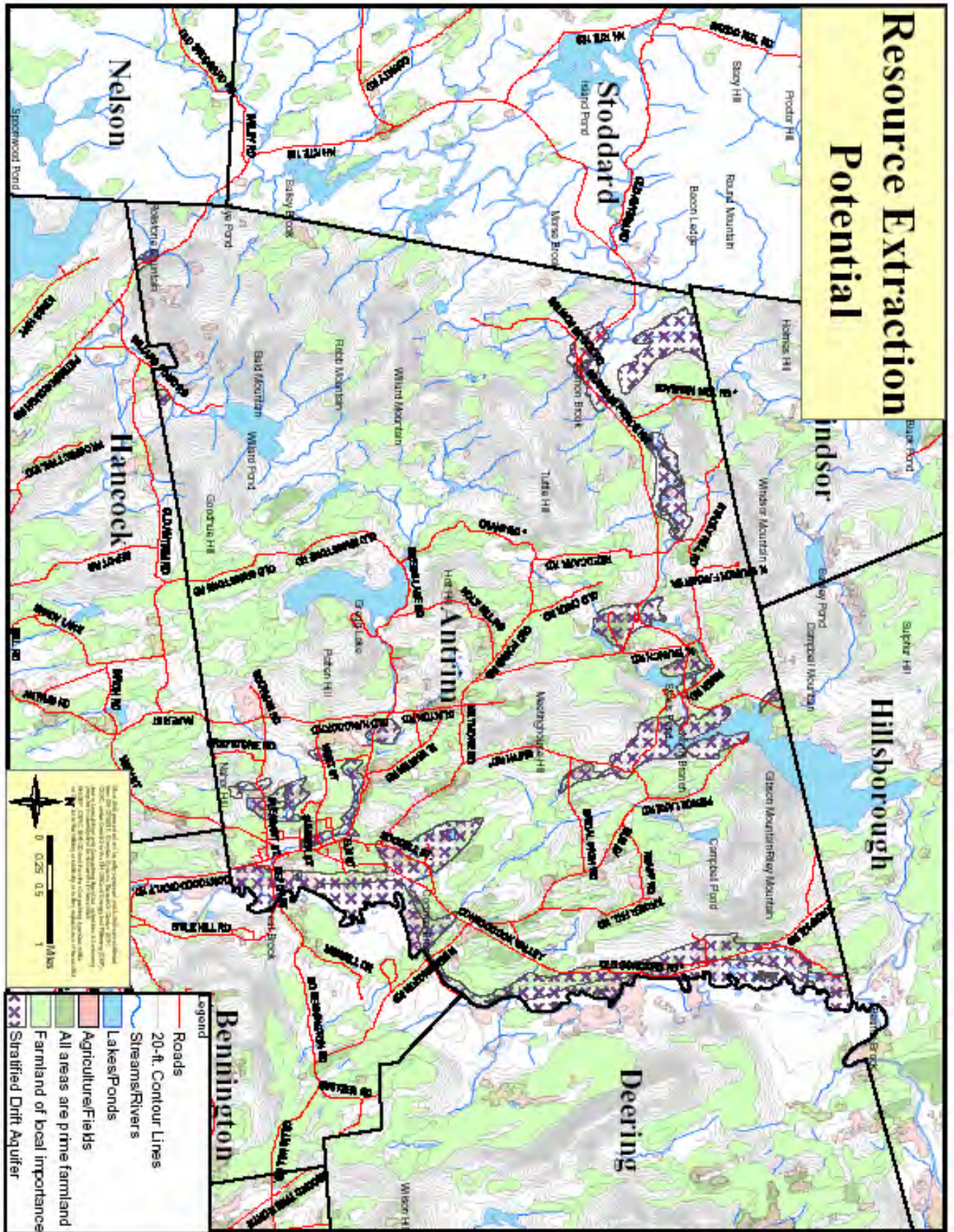
**Comments on Antrim Open Space Committee draft report  
Public hearing - October 11, 2005**

1. Zoning – how does the Open Space Plan fit in with zoning?
2. Priorities within the yellow areas (what should be worked on first, etc)?
3. How do Open Space Committee and Conservation Commission work together on implementing the Plan?
4. Need to educate folks in Antrim about conservation easements and land protection.
5. Report says non-profits should hold conservation easements resulting from efforts to protect the priority lands in the report – town should also be able to hold conservation easements too.

## Natural Resource Inventory maps

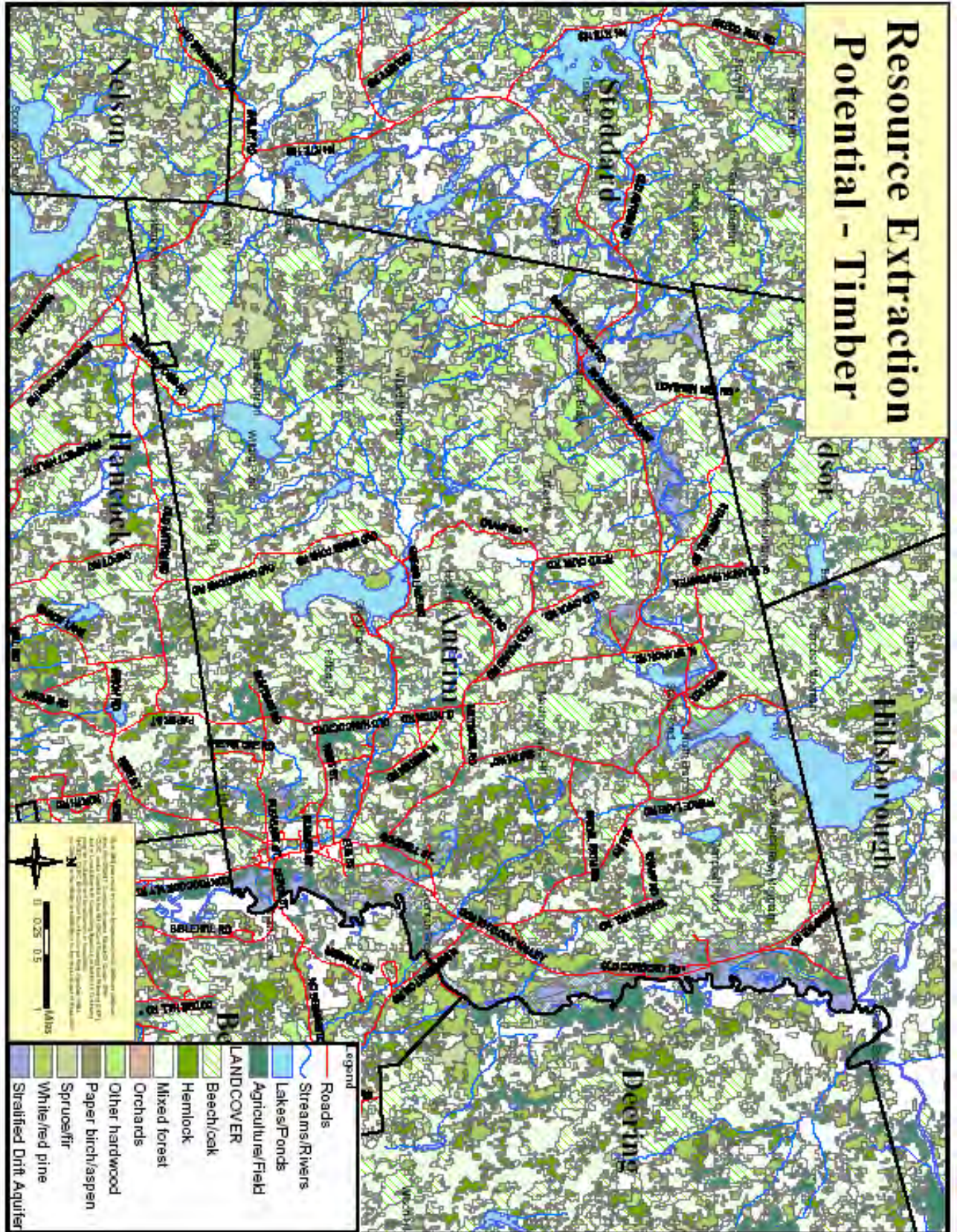








# Resource Extraction Potential - Timber





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