

**STATE OF NEW HAMPSHIRE
SITE EVALUATION COMMITTEE**

Docket No. 2015-06

**Joint Application of Northern Pass Transmission, LLC
and Public Service Company of New Hampshire
d/b/a Eversource Energy for a Certificate of Site and Facility**

**PREFILED DIRECT TESTIMONY OF EDWIN MELLETT
ON BEHALF OF THE TOWN OF NORTHUMBERLAND**

November 15, 2016

Background and Qualifications

Q. Please state your name.

A. My name is Edwin Mellett.

Q. Please describe your official capacity in the Town of Northumberland?

A. I am the chairman of the Northumberland Conservation Commission.

Purpose of Testimony

Q. What is the purpose of this prefiled direct testimony?

A. My testimony is being presented on behalf of the Town of Northumberland. My testimony is for the purpose of providing the Site Evaluation Committee with information regarding the Town's wetlands resources, and explaining the Conservation Commission's concerns about wetlands impacts and mitigation as well as the overall impact the Project would have on the Town.

Concerns of the Town of Northumberland

Q. What concerns does the Town's Conservation Commission have regarding the Project?

A. As proposed, the Project route through Northumberland passes through a significant amount of wetlands. See Appendix A to my testimony, "Assessment of Transmission Line Proposal on Natural Resources throughout Northumberland, New Hampshire," and Appendix B to my testimony, "Functional Assessment of Wetlands Throughout Northumberland, NH." Although the Applicants delineated wetlands areas within the right-of-way, many of these wetlands areas extend beyond the edge of the right -of-way. One of these, in the southern

1 portion of town, is very large and extends into Lancaster as well (where the application proposes
2 removing an existing structure in the middle of a pond using mats to cover the area). The
3 Applicants have not detailed how the Project might affect the connected wetlands areas, and they
4 have failed to explain exactly how all impacts to wetlands will be avoided, minimized and/or
5 mitigated within Northumberland. The Project would also create a visual scar on the area. With
6 little industry or business in the area, Northumberland's economic survival now depends on
7 tourism. The Project threatens the natural resources that are the basis for tourism, and the
8 Commission is concerned about the ultimate impact on the Town. See Appendix C to my
9 testimony, my Letter of November 20, 2015 to NH Site Evaluation Committee.

10 **Q. What are the Conservation Commission's concerns regarding natural**
11 **resource impacts to the Town?**

12 A. The proposed route would enter Northumberland at the Stark town line and go
13 west to the Lancaster town line. It would cross three extensive wetlands; of particular concern
14 are the crossings of Roaring Brook and Dean Brook. When the existing gas pipeline in
15 Northumberland was installed across Roaring Brook, there was siltation of the brook as a result.
16 However, the application contained no specific plans for the crossing of small 1st, 2nd and 3rd
17 order streams. The Applicants said only that they plan to follow best management practices.
18 The Conservation Commission is concerned about this lack of detail and believes the Site
19 Evaluation Committee should require detailed plans for each crossing. In addition, the only
20 access points the Applicants have shown on the plans are along the right-of-way, and they plan to
21 place mats over the wetlands. The Conservation Commission is concerned that this method will

1 be insufficient for the construction of large towers, which requires heavy and large construction
2 equipment.

3 **Q. What are the Commission's concerns regarding mitigation?**

4 A. The Applicants have identified only 23,961 square feet of wetlands impacts
5 within Northumberland that would have to be mitigated. This is only 0.55 acres. However, the
6 proposed route would cross three different wetland complexes that are over 1500 acres in total.
7 It should also be noted that, if the Project is constructed, this right-of-way would have a
8 conventional power line, a gas pipeline and the new HVDC power line. There is a cumulative
9 effect to the wetlands as each of these are accessed for maintenance. The ARM Fund payment
10 the Applicants would make for this impact would be \$84,692.61. However the Applicants have
11 proposed that in lieu of making this payment, they use the parcels of land they have bought as
12 preservation parcels. These parcels of land were not bought for mitigation purposes but for an
13 anticipated right-of-way for the Project. In some cases the right-of-way would still cross part of
14 the mitigation parcel and the rest would be used for mitigation. None of these proposed
15 mitigation parcels are in Northumberland. If this proposal were approved by the Site Evaluation
16 Committee, the Town of Northumberland would not receive one penny of compensation. In
17 summary, 1) the Applicants have under-estimated the temporary and permanent impact of the
18 Project to the wetlands, and 2) the compensatory mitigation package is inadequate and not in the
19 interest of Northumberland.

20 **Q. How does the Conservation Commission believe the Project should be**
21 **handled?**

1 A. Given the extensive impacts to wetlands, natural resources, and the local tourism
2 economy that the Project would have, the Commission believes that the Project should be buried
3 along its entire length, in state-owned rights of way. This is consistent with the vote of the 2011
4 Northumberland Town Meeting, which passed Warrant Article 27 to oppose the Project “as
5 presently proposed.” See Appendix D to my testimony. Although the Applicants changed parts
6 of their proposal after that vote occurred and are now proposing to bury the Project in some
7 municipalities, the Northumberland portion is still proposed to be overhead and the Applicants
8 have not addressed the areas that concern us.

9 **Q. Does this end your testimony?**

10 A. Yes.

**Assessment of Transmission Line Proposal
on
Natural Resources throughout Northumberland, New Hampshire**

April 2016



**Summary Report Prepared by:
Elise J. Lawson (#233) and John C. Severance (#240)
Certified Wetland Scientists
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INTRODUCTION

The Town of Northumberland, New Hampshire is located in southwestern Coos County along the Connecticut River. The Town has a total area of 36.5 square miles. The Connecticut River runs along the western edge of Town, and the Upper Ammonoosuc River runs through town in a southwesterly direction, before entering the Connecticut River. Northumberland contains a wide range of ecological habitats ranging from lowland wetland complexes to higher elevation areas: Morse Mountain (1,880 ft), Cape Horn (2,040 ft), Moore Mountain (1,522 ft.) and Spaulding Hill (1,220 ft). The town's highest point is 2,860 feet above sea level on a spur of the Pilot Range in the town's eastern boundary.

Northern Pass, LLC submitted a proposal, along with several required permit applications, to construct a transmission line throughout New Hampshire. Just over 6 miles of the above-ground proposed route runs through Northumberland along the existing Right-of-Way (ROW) transmission lines. The potential effects of the transmission line throughout the State including Northumberland are extensive and include environmental, cultural, scenic and economic impacts.

In March 2016, the Northumberland Conservation Commission contacted Elise Lawson and John Severance to assist them in reviewing the permits to assess impacts on wetlands and wildlife. Both Elise (CWS #233) and John (CWS #240) have extensive experience with resource-based projects in northern New Hampshire including the following:

- 2006 - wetland assessment and ranking in Northumberland
- 4-year vernal pool inventories along the Connecticut River flood plain regions
- Wildlife habitat work for private landowners
- Several private wetland impact applications filed with the NH DES Wetlands Bureau

METHODS

Existing data used for this report include the following:

1. Maps and studies completed by Northern Pass in submitted applications
2. Existing natural resource data generated during the 2006 wetland assessment study
3. Existing maps including:
 - a. USGS topographic
 - b. Aerial photos
 - c. US Fish and Wildlife National Wetland Inventory data
 - d. US Natural Resource Conservation Service soils map: poorly and very poorly drained soils
 - e. Aquifer data downloaded from the UNH GRANIT mapping database

Although the concerns are focused within the Town of Northumberland, they should be recognized and considered for the entire proposed area from Pittsburg to Deerfield, New Hampshire.

RESULTS

Impacts on Natural Resources

Wetlands and Perennial Streams

Wetlands are an essential habitat type for the majority of plant and animal species in New Hampshire. As a whole, wetlands are extremely diverse depending on the hydrology, soils, topography, and climate of an area. In addition to rivers, lakes, and ponds, there are four general types of Palustrine¹ wetlands: marsh, swamp, bog, and fen, with additional sub-types in each of these categories. This diversity extends into each individual wetland where a complex matrix of plant and wildlife species and water regimes co-exist. The resulting edge habitats within and around wetlands are frequently used by a great deal of wildlife species. It is estimated that wetlands and riparian areas (habitat along streams and rivers) are used by over 90% of the region's wildlife species and provide preferred habitat for over 40% of local species.

In 2015, the U.S. Environmental Protection Agency's (USEPA) Office of Research and Development finalized a report called: *Connectivity of Streams and Wetlands to Downstream Waters: A Review and Synthesis of the Scientific Evidence*.² The report reviews more than 1,200 peer-reviewed publications and summarizes current scientific understanding about the connectivity and mechanisms by which streams and wetlands, singly or together, affect the physical, chemical, and biological integrity of downstream waters. The report focuses on how surface and shallow subsurface connections including small or temporary streams, wetlands, and open waters affect larger waters such as rivers, lakes, reservoirs, and estuaries. It makes five major conclusions, summarized below.

1. Streams, regardless of their size or frequency of flow, are connected to downstream waters and strongly influence their function.
2. Wetlands and open waters in riparian areas (transitional areas between terrestrial and aquatic ecosystems) and floodplains are physically, chemically, and biologically integrated with rivers via functions that improve downstream water quality. These systems act as buffers to protect downstream waters from pollution and are essential components of river food webs.
3. Many wetlands and open waters located outside of riparian areas and floodplains, even when lacking surface water connections, provide physical, chemical, and biological functions that could affect the integrity of downstream waters.

¹ Palustrine wetlands are a group of vegetated wetlands traditionally called marshes, swamps, bogs, fens. They also include the small, shallow, permanent or intermittent water bodies often called ponds.

² U.S. EPA. *Connectivity of Streams and Wetlands to Downstream Waters: A Review and Synthesis of the Scientific Evidence (Final Report)*. U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-14/475F, 2015.

4. Variations in the degree of connectivity are determined by the physical, chemical and biological environment, and by human activities. These variations support a range of stream and wetland functions that affect the integrity and sustainability of downstream waters.
5. Incremental contributions of individual streams and wetlands are cumulative across entire watersheds, and their effects on downstream waters should be evaluated within the context of other streams and wetlands in that watershed.

Consultants hired by Northern Pass delineated 51 wetlands, 12 perennial Streams, 4 intermittent streams, 4 ephemeral streams, and 10 vernal pools along the ROW throughout all of Northumberland (Wetland Permit Application, Appendix 31). In Northumberland along the proposed transmission line, delineated wetlands ranged from 308 square feet to 225,894 square feet or 5.2 acres. Some of the larger wetlands extend far beyond the ROW into a diverse matrix of forested, scrub-shrub, emergent, open water, and riparian habitat. All wetlands were not delineated beyond the ROW due to private landowner considerations and rights. Consultants assessed each wetland's functionality based on 14 parameters outlined in the *Method for Inventorying and Evaluating Freshwater Wetlands in New Hampshire* manual.³

Table 7. Existing Transmission Line ROW in Dummer to Whitefield Substation (N2), Summary of Wetlands, Streams, and Vernal Pools

Town (North to South)	Wetlands	Prime Wetlands	Rivers and Perennial Streams	Intermittent Streams	Ephemeral Streams	Vernal Pools
Dummer	18	None	6	8	0	5
Stark	71	None	6	11	14	15
Northumberland	51	None	12	4	4	10
Lancaster	51	None	7	0	1	3
Whitefield	49	None	2	2	2	2
Subtotal	240	None	33	25	21	35

This table was copied directly from the Wetland Permit Application. It shows the total number of all types of wetlands, streams and vernal pools documented throughout the ROW in Northumberland. Five of the 51 wetlands documented were considered to be "high quality".

³ The *Method for Inventorying and Evaluating Freshwater Wetlands in New Hampshire* (NH Method) provides communities, conservation groups and professionals a practical method for evaluating wetland functions. Originally published in 1991, the NH Method was first revised in 2011 and updated in 2012 and 2013. It is currently being updated in 2015.

Table 8. Existing Transmission Line ROW in Dummer to Whitefield Substation (N2), Number of Wetlands by Dominant Wetland Cover Type

Town (North to South)	Emergent	Forested Deciduous	Forested Evergreen	Scrub/Shrub Deciduous	Un- Consolidated Bottom	Subtotal
Dummer	7	0	0	11	0	18
Stark	35	1	0	35	0	71
Northumberland	28	3	0	20	0	51
Lancaster	34	0	0	17	0	51
Whitefield	20	0	0	29	0	49
Subtotal	124	4	0	112	0	240*
Percent of Total	51.7%	1.7%	0	46.7%	0	

*Features crossing town boundaries were accounted for in each town in which they occurred.

This table was copied directly from the Wetland Permit Application. It breaks down the types of Palustrine wetlands documented along the ROW in Northumberland.

Table 45. Permanent and Temporary Impacts by Dominant Cover Type, Existing Transmission Line ROW in Dummer to Whitefield Substation (Section N2)

Town	Permanent Impact (SF)	Temporary Impact (SF)
Dummer		
PEM	71	44,988
PSS	283	131,789
Stark		
PEM	142	62,868
PFO	20	2,435
PSS	1,229	416,074
Northumberland		
PEM	607	279,284
PSS	556	245,865
Lancaster		
PEM	679	310,349
PSS	677	240,619
Whitefield		
PEM	636	264,852
PSS	1,619	719,816
Total (SF)	6,518	2,718,940
Total (Acres)	0.15	62.4

This table was copied directly from the Wetlands Permit Application. It shows the total permanent and temporary impacts to wetlands throughout all of Northumberland. The consultants classified five of these wetlands as high quality wetlands. SF = Square feet, PEM = Palustrine Emergent Wetland type of wetland, PSS = Palustrine Scrub Shrub type of wetland

Based on previous field work and review of submitted maps, it appears that wetlands were accurately delineated and documented. However, there are concerns with permanent and temporary impacts on all of these wetlands, particularly those which are part of perennial or intermittent streams and those that extend beyond the ROW boundaries. Many of the larger wetlands have active beaver populations and contain series of beaver pond systems. Disruption of these wetlands will not only affect the impact area, but also areas downstream, and in some cases upstream habitats. Moreover all streams eventually flow into the Connecticut River, affecting water quality. The Connecticut River is the largest river in New England. It flows 410 miles from its source only 300 yards from the Canadian border, to Long Island Sound. It drains 4.5 million acres (7,000 square miles) of New Hampshire and Vermont. In 1992, NH General Court designated the Connecticut River into the New Hampshire Rivers Management and Protection Program, and in 1998 the White House designated the Connecticut as an American Heritage River (CRJC, 2016).⁴

In the 2006 Wetland study in Northumberland, six wetland complexes were inventoried and ranked in the field after initial GIS analysis using available data. All six inventoried were large areas, ranging from nearly 90 acres to over 1,036 acres. Wetland complexes ranked 1st, 4th, and 5th are all found within and beyond the existing ROW where work is proposed. Please refer to the November 2006 report⁵, *Functional Assessment of Wetlands throughout Northumberland, NH* for descriptions on these wetlands as well as recommendations for protection of these wetland complexes. The report is publically available through the Northumberland Town Hall.

Although temporary and permanent impacts on all wetlands should be carefully reviewed, we noted three large area containing Palustrine and Riverine wetland complexes which are a special concern based on the following:

- Wetlands extend through and beyond the ROW. Impacts in immediate area will affect wetland diversity, quality and function downstream.
- Existence of perennial streams
- The flow of water all leads to the Connecticut and Wild Ammonoosuc Rivers
- There are extensive aquifers under the Connecticut River and associated flood plain and wetland areas within and beyond Northumberland.

The large wetland complexes that are of particular concern with the proposed project are described below.

1. **Northern Area of Concern**: This wetland complex was called the Gun Club Wetland Complex (#4) in the 2006 wetlands report. It is nearly 300 acres in size and lies along the northern section of the Lost Nation Road, and adjacent to the gun club area. Northern and western sections of this wetland cross the existing Public Service of New

⁴ Connecticut River of Joint Commission, Inc. (CRJC), 2016. *Fast Facts*. Information and Education on the Connecticut River. <http://www.crjc.org/facts.htm#top> . Retrieved from the web on April 2, 2016).

⁵ Watershed to Wildlife and North Country Council. 2006. *Functional Assessment of Wetlands throughout Northumberland, NH*. Report prepared for the Town of Northumberland – Northumberland Conservation Commission. Work funded by the Upper Connecticut River Mitigation and Enhancement Fund.

Hampshire (PSNH) or ROW transmission line. The wetland complex crosses the ROW more than once. Roaring, Ames and Moore Brooks feed this wetland. All streams eventually all merge into Roaring Brook, and then confluence with the Wild Ammonoosuc River. The Wild Ammonoosuc River then flows into the Connecticut River. There is a large aquifer under the Wild Ammonoosuc and Connecticut Rivers in this area. The wetland complex and associated perennial streams play an important role here in slowing large amounts of runoff from the adjacent mountain slopes before they reach the main rivers and downtown area. This area of concern contains a diversity of wetland types ranging from open water, emergent, scrub-shrub, and forested wetlands. Additionally, there are 10 different types of very poorly and poorly drained soils. Because of the diversity in soils, wetland types, and surrounding upland habitats, this wetland also has the potential to be home to many species of concern.

2. **Central Area of Concern:** This wetland complex along the ROW was called the Lost Nation Wetland Complex (#5) in the 2006 study. It is located between the Lost Nation Road, near the junction with Page Hill Road, and the Cape Horn Ridge. Dean Brook and an unnamed perennial stream flow from the northwest to southeast across the ROW: crossing the ROW more than once. The wetland mapped was 176 acres lying within narrow valley between steep slopes surrounding it. It is considered an important wetland not only because it contains a variety of wetland types, but also because there are large amounts of forested habitat surrounding it acting as excellent buffers and protection from erosion. The diversity of wetlands is also impacted by beaver – forested, scrub shrub, emergent and open water. The streams flow directly into the Connecticut River. If water quality is degraded during construction it will directly affect the water quality of the Connecticut River downstream.
3. **Southern Area of Concern:** This large wetland complex was called Page Hill Wetland Complex (#1) in the 2006 report, and was the highest ranked wetland in Northumberland. It spans over 1,036 acres. Due to its large size and topography, there is a great deal of diversity throughout and within it. This wetland complex lies between Northumberland/Lancaster town line and the Lost Nation Road, with a portion of Page Hill Road and the ROW bisecting it. Moreover, this complex extends for over 1,800 acres into neighboring town of Lancaster. The NWI data and classification mapped by the National Fish and Wildlife Service classified 22 different types/combinations of wetlands (Palustrine and Riverine) within this wetland, most of which were observed during field work. Extensive beaver activities are well documented in this area. Forested bogs and northern white cedar wetlands were documented.

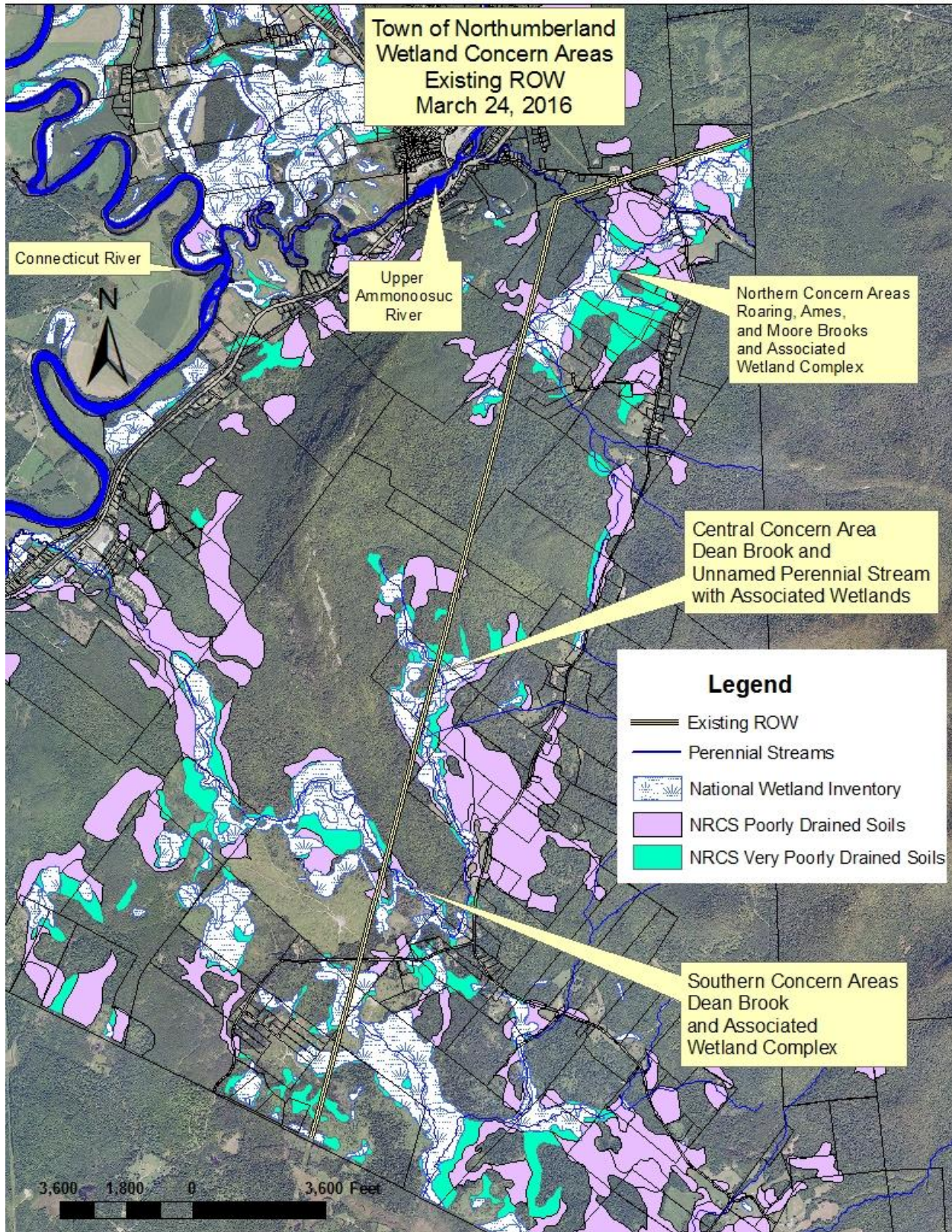


This tamarack heath bog was a unique wetland observed in the Southern Area of Concern (Page Hill Wetland complex).

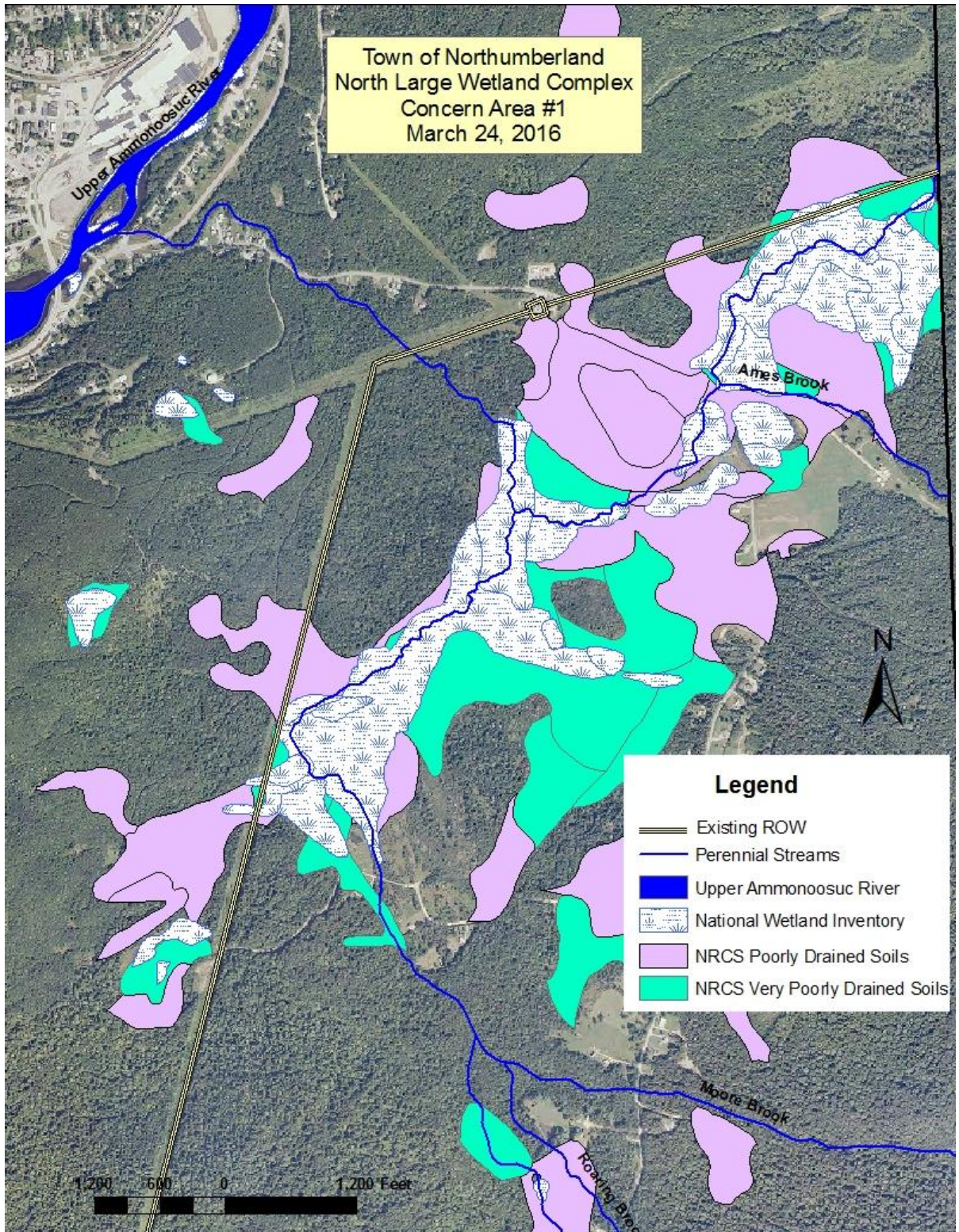
Concerns with both temporary and permanent impacts on all wetlands, but especially the three areas described above are the following:

1. Road construction which will increase public access to some of these areas and could cut off aquatic connectivity
2. Loss of biodiversity not only to wetlands, but also adjacent upland plant and animal communities
3. Increased opportunities for invasive species to establish
4. Erosion and stream bank destabilization at the site, as well as sedimentation downstream in all intermittent and perennial streams
5. Aquifer degradation. Regardless of the size, all aquifers need special consideration to ensure good water quality now and into the future. Given the worldwide water crises we are experiencing, all aquifers should be considered potential drinking water sources.
6. Impairment of surface water quality in the stream itself and in the Ammonoosuc River downstream from the potential impact area

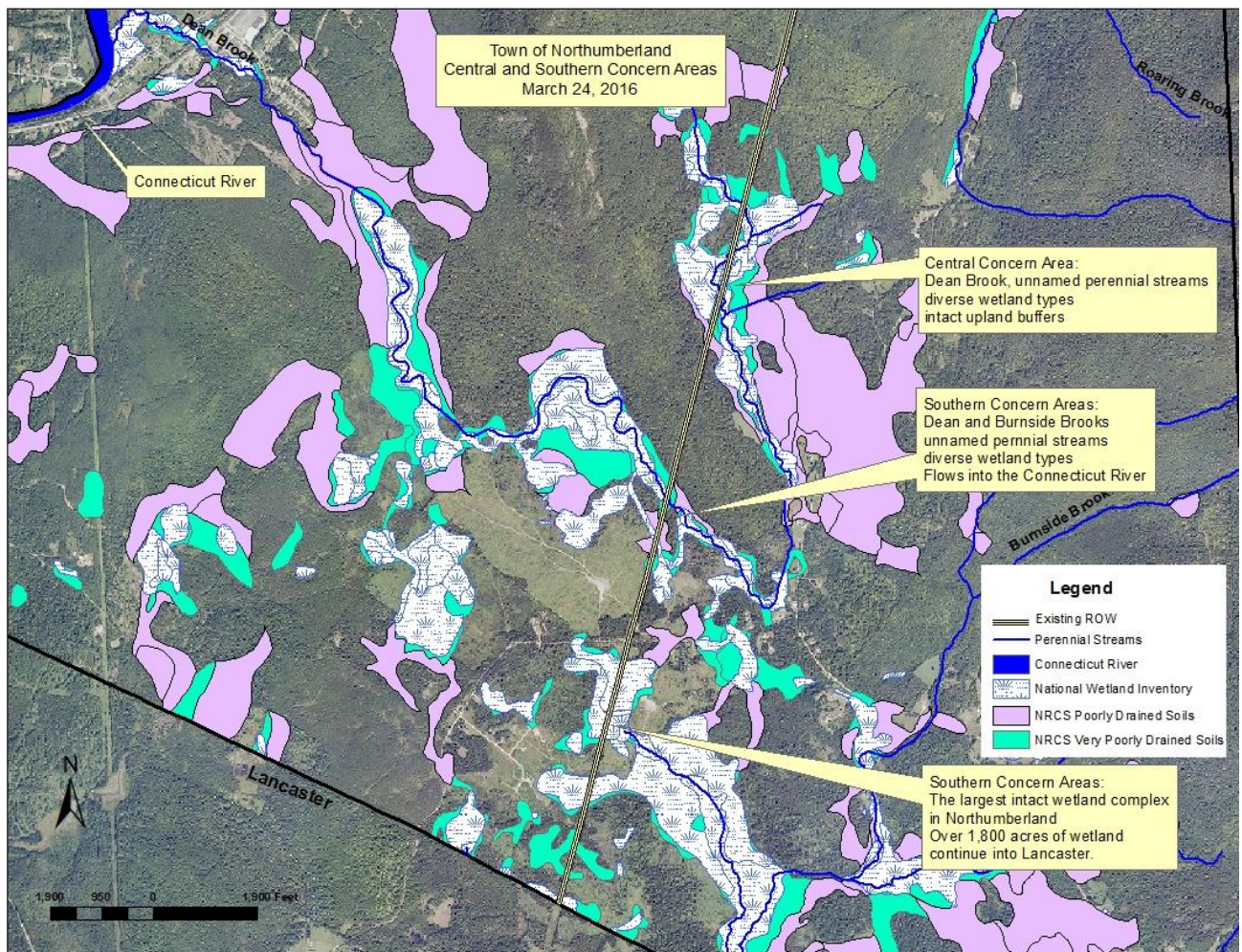
The maps below show locations of these large wetland complexes in Northumberland.



Overall all map of the larger wetland complexes all containing perennial streams. The map shows the location of the 3 large areas identified with greatest concern for wetland and adjacent upland impacts.



The large wetland complex in the northern part of the ROW in Northumberland crosses the proposed NP project several times. Ames, Moore and Roaring Brook enter the Upper Ammonoosuc and then the Connecticut Rivers, where there is an extensive stratified drift aquifer. Concerns with loss of wetland value from both permanent and temporary wetland impacts.



The Central and Southern Concern areas cross the proposed project several times. The diversity of wetland types, intact upland buffer, and perennial streams flowing into the Connecticut River will all be negatively impacted by both permanent and temporary impacts from the proposed NP project.

If the project is approved to move forward, careful monitoring of the entire area is crucial to help minimize these effects on wetlands, upland buffers, surface water, and ground water quality.

Vernal Pools

Vernal pools are distinct, often isolated, and important wetland types. Vernal pools provide essential breeding habitat for certain amphibians and invertebrates such as wood frogs (*Rana sylvatica*), yellow spotted salamanders (*Ambystoma maculatum*), marbled salamanders (*A. opacum*), and fairy shrimp (*Branchinecta lynchi*). These creatures depend on vernal pools as breeding sites because they are only temporary water bodies preventing fish and other aquatic predators from taking up residency. Reptiles such as Wood turtles (*Glyptemys insculpta*) also rely on vernal pools as an important feeding area in early spring. Vernal pools fill annually from precipitation, runoff, and rising groundwater, typically in the spring and fall.

By mid-summer, however, these wetlands are typically dry, making them a dynamic system inhabitable to specifically adapted plant and wildlife species. For this reason many unique, rare, threatened, and endangered species are linked to this wetland type. They are common in New Hampshire, and the State recognizes their value as important habitat.

Vernal pools were documented by NP consultants on three separate dates (5-25-2011, 6-21-2013 and 6-21-2013). A summary of impacts on vernal pools is shown below taken directly from the Wetland Permit application.

Table 12. Summary of Direct Impacts to Vernal Pools by Town

Town	Permanent Impact (SF)	Temporary Impact (SF)
Bethlehem	0	606
Chester	0	0
Deerfield	0	4,595
Dixville	0	510
Dummer	0	787
Lancaster	0	167
Londonderry	1,188	0
Millsfield	0	425
Northumberland	13	492
Pittsburg	0	2,213
Stark	7	2,208
Stewartstown	0	1
Whitefield	0	53
Total (SF):	1,208	12,056
Total (Acres):	0.03	0.28

The four main concerns regarding impacts on vernal pools are:

1. It is very difficult to assess the effects of temporary impacts on vernal pools. Based on the field inventory and examination of existing GIS data, there are likely many vernal pools in the ROW and work could impact them for longer than projected.
2. Each vernal pool was only documented during one season. Based on a four year study done by Watershed to Wildlife, Inc., John and Elise noted a wide variance in hydrology in many of the vernal pools inventoried over the four years. Some may have been missed, or more likely the reported size and impact area could be incorrect.
3. It is also important to assess the upland buffer around vernal pools to determine the effect on the species that not only breed in the pool, but also live most of their lives in the surrounding upland and wetland areas.

4. There could be permanent impacts if work on the transmission lines occurs during the breeding season or during time when the egg masses, insect larvae, crustaceans, tadpoles, salamanders, etc. are developing and require the water level to be undisturbed for a period of time.



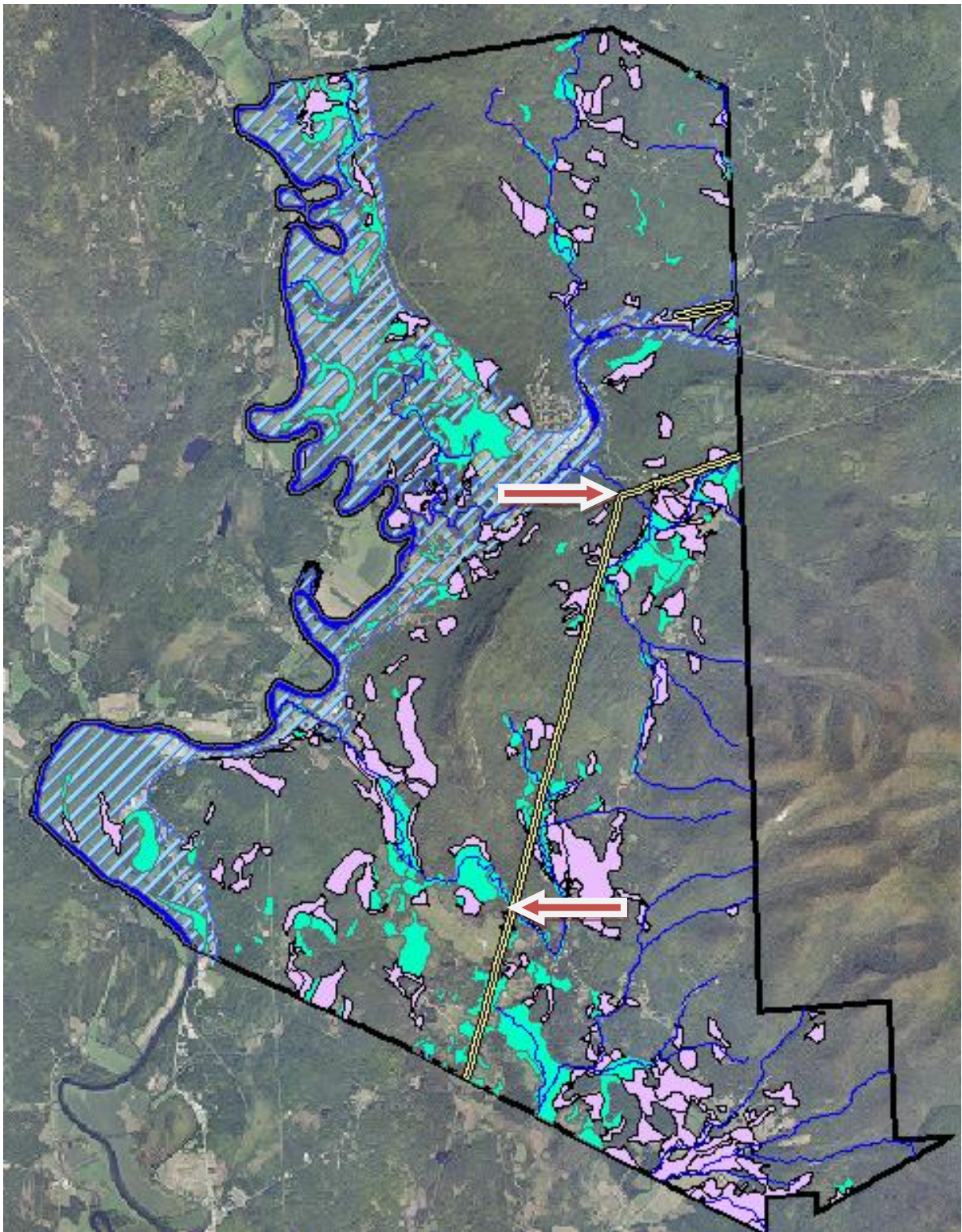
Vernal pools are a subset of wetlands with unique characteristics that support specialized sensitive species, whose existence relies on adjacent uplands as well as the vernal pool. Although not confirmed because of the time of year, vernal pool species are very likely to breed in this body of water in May. ROW power lines are visible adjacent to this pool.

Stratified-Drift Aquifers

There are three types of groundwater aquifers: Stratified-drift; till; and bedrock. The basic difference is that stratified drift and till aquifers are composed of unconsolidated glacial deposits (loose earth materials), while bedrock aquifers are solid rock. In stratified drift aquifers, the materials are sorted sand and gravel. In till aquifers, the material is a gravel, sand, silt and clay mixture. Bedrock aquifers contain fractured rock. Stratified-drift aquifers are an important source of ground water for commercial, industrial, domestic, and public-water supplies in the State of New Hampshire. Approximately 14% of land surface in the State is underlain with stratified-drift aquifers.

Wells used by communities and private landowners draw groundwater from aquifers. The stratified-drift aquifers represent the greatest potential groundwater source for the Town of Northumberland. These aquifers contain potential usable water sources for municipal purposes and should be protected to insure their future quality and availability.

Approximately 4,468 acres or nearly 19% of the area of Northumberland is underlain with Stratified-drift aquifers. They mostly lie along the Upper Ammonoosuc and Connecticut Rivers. In Northumberland the majority of aquifers are made up of sand material. Stratified drift aquifers consisting of sand material tend to be more porous and have a higher potential for quicker transmissivity and recharge. Northumberland is fortunate to have these potential drinking water sources. Runoff, erosion, and soil compaction from this proposed project could all contribute to degradation of water quality in these aquifers.



Aquifers (shown in blue hatch) are found mostly under the Upper Ammonoosuc and Connecticut Rivers. The red arrows show areas of particular concern where water quality degradation could effect future water supply in Town.

Wildlife

All living things need food, water, cover, a space to survive, and a place to raise their young. The area where an organism lives and meets its basic needs for survival is called its habitat. Different species often have different requirements for their habitat. With increasing development by humans, habitats are rapidly disappearing and becoming less able to support life. Habitat loss is considered to be the number one cause in species decline and extinction.

The diversity and abundance of wildlife is directly correlated to the diversity and richness of habitat, plant community types, and vegetation. The Town of Northumberland contains diverse and unfragmented wildlife habitat, in part due to the Cape Horn State Forest, and in part thanks to the Town's Master Plan and private landowners invested in conserving their land.

The concern for wildlife with the proposed project by Northern Pass is primarily the displacement of many wildlife species during construction. During previous field work in Northumberland, most of the existing poles had been marked by black bear. Fur, bite marks and/or claw marks were noted on many of the random poles examined. Deer and coyote sign was also abundant. Although song bird surveys were not conducted, they would be affected both temporarily and possibly permanently during the construction of transmission lines along the ROW.

Many wildlife species tend to follow the edges of wetlands and streams. The extensive wetland complexes noted above, all cross the existing ROW, some several times. It follows that further development of the ROW will cut off travel along these wetlands and streams, at least temporarily, and possibly for long periods of time. Moreover, improvement of roads into the area will increase the likelihood of people driving along the ROW which will further impact wildlife negatively.



Black Bear often mark wooden poles along powerlines. This photo was taken along the ROW in Whitefield NH during field work for an Natural Resource Inventory.

CONCLUSION

Based on fieldwork in Northumberland, current GIS analyses and review of the wetlands application for the NP project, we believe there could be substantial negative impacts from proposed construction along the transmission line ROW through Northumberland, New Hampshire. The extent of the negative impact on all types of wetlands and vernal pools cannot be determined without comprehensive studies to provide science based data on several environmental components that make up the rich diverse matrix of the area. Because the project is so extensive throughout the North Country, the cumulative effects of this work could be quite detrimental to wetlands, wildlife habitat and wildlife movements; many extending well beyond the relatively small impact areas delineated by consultants in the ROW. If the project moves forward, at minimum, there should be careful monitoring by professional biologists to ensure best management practices. The monitoring should continue for at least 3, and ideally 5 growing seasons until the area has stabilized with a goal of revegetation with native, non-invasive species, good water quality, and no erosion.

Functional Assessment of Wetlands throughout Northumberland, NH

November 2006



Report Prepared for:
The Town of Northumberland – Northumberland Conservation Commission

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Introduction

Several wetlands throughout the Town of Northumberland have been identified, inventoried and assessed as part of a three-year region-wide study of wetlands.

In the spring of 2006 Watershed to Wildlife, Inc. and North Country Council, Inc. received a grant from the Upper Connecticut River Mitigation and Enhancement Fund for this three year study. During two recent projects; a four year Vernal Pool Inventory Study funded by the Upper Connecticut River Mitigation and Enhancement Fund, and a Regional Plan for the 51 towns in northern NH, a need to improve comprehensive wetland protection, restoration, buffer improvement, inventory, and assessment has become apparent. Many towns in southern New Hampshire have adopted methods to protect wetlands from development which is occurring at a rapid rate. In the North Country and these selected towns, there are still opportunities for proactive and sustainable management of these resources rather than the more common reactive management.

Watershed to Wildlife, Inc. (WTW) is a natural resource consultant company with wetland expertise. WTW provides natural resource inventories for municipalities, watershed management plans, wetland identification, assessment, classification, delineating and impact permitting, educational workshops, and wildlife studies. "It is the mission of WTW to help maintain the integrity of ecosystems while still achieving land management goals; as well as to promote an understanding of wetland and wildlife ecology, environmental impact, sustainable yield, adaptive management, and short and long range planning." Both co-owners of WTW are NH Certified Wetland Scientists: Elise Lawson – CWS #233 and John Severance – CWS #240.

WTW has partnered with North Country Council (NCC), a regional planning commission serving 51 regional towns in northern New Hampshire providing services in planning, GIS mapping, and sustainability of natural resources. "It is the mission of NCC to encourage effective community and regional planning for the development of economic opportunity and the conservation of natural, cultural and economic resources. This will be accomplished by providing information, regional advocacy, technical assistance, community education, and direct service to the region, its organizations and political subdivisions." Christine Walker, a Natural Resources Planner with NCC will assist Northumberland with their planning options.

Goal and Objectives

The goal of this project is to provide the Town of Northumberland with the ability to work towards protecting or conserving several diverse and critical wetland complexes throughout Town. The objectives are to:

1. Equip Northumberland to implement a program to adopt ordinances and Prime Wetland designations for protection of wetlands.
2. Provide tools for wetland protection to local Planning Boards, Select Boards, and Conservation Commissions who frequently contend with issues directly affecting wetlands.
3. Increase public awareness and education in relation to the importance of protecting wetlands through workshops and presentations.

This study enables the Town of Northumberland, if they choose, to designate Prime Wetlands through methods provided by the State of NH Department of Environmental Services, Wetlands Bureau. The New Hampshire Code of Administrative Rules sets standards for designating Prime Wetlands, using those wetlands that are worthy of extra protection because of their uniqueness, fragility and/or unspoiled character. Chapter Wt700 of these Administrative Rules set the guidelines for designation as well as the permitting process for impacting of a designated Prime Wetland.

Methodology

Evaluating Existing Digital Data

Existing digital data was analyzed to determine which wetlands were to be evaluated in the field. Data evaluated included:

- 1992, 1998, and 2003 Digital Orthophoto Quadrangles
- United States Geologic Survey Topographic Maps (Digital Raster Graphics)
- Natural Resource Conservation Service (NRCS) soil maps
- U.S. Fish and Wildlife – National Wetland Inventory (NWI) data
- Wetlands delineated and mapped from previous private landowner projects in Northumberland conducted by Watershed to Wildlife, Inc.
- Data from a previous four year study of select vernal pools along the Connecticut River floodplain in Northumberland. (Funded by the Upper Connecticut River Mitigation and Enhancement Fund, 2002-06.)

Using the above data sets, wetlands were assessed and ranked in the office to determine whether they should be inventoried further in the field. Several wetlands ranked higher than others, based on examining aerial photographs as well as criteria established in Chapter Wt 700 (Prime Wetlands) of the NH Code of Administrative Rules. Specifically, excerpts from the Rules state the following:

Wt 701.02 Identification of Wetlands for Consideration as Prime.

- a. All wetlands greater than 2.0 acres in size in the municipality shall be identified. Wetlands smaller than 2.0 acres may be identified and included in the functional ranking.

Wt 701.04 Selection of Designated Prime Wetlands.

- c. In addition to their relative ranking, wetlands designated as prime shall meet the following minimum criteria:
 1. The wetlands shall have the presence of hydric soils, hydrophytic vegetation, and wetlands hydrology; and
 2. At least 50% of the prime wetland shall have Hydric A (very poorly drained) soils and the remaining soils shall be hydric B (poorly drained) soils.

NRCS soils maps were used to identify the outer perimeter borders of continuous hydric soil units (soils that are poorly and very poorly drained). Internal units of non-hydric soil units were broken out in determining wetland acreages, but were included in the inventory and assessment of functionality of the wetland complex as a whole.

Very poorly drained soils are typically very soft, mucky, organic soils, with a depth of greater than 60" to bedrock, moderate to rapid permeability, high water potential, and a water table ranging a maximum of 12" below the surface to 12" above the surface. These characteristics make these soils unsuitable sites for agriculture and development, but there can be limited potential for timber harvesting. Due to the deep, soft, wet soil conditions heavy equipment can only successfully access these sites during winter months when the ground is frozen. These soil conditions also create high potential for wind throw and seedling damage. Very careful planning and proper permitting must take place ahead of time in order for timber harvesting to be successful on these sites.

Poorly drained soils are firmer soils, but generally still have moderate to rapid permeability, moderate to high water potential, and have seasonal high water table levels that range from 0" to 18" below the surface. Some of these soils have periods throughout the year when they are drier giving them potential for pasture land and developable sites. If development is to occur on these soils careful, detailed planning must go into particulars such as; drainage and septic systems. These soils typically have the same limitations for forestry practices as very poorly drained soils so access during the winter months or dry periods are recommended. Again careful planning and proper permitting must take place for intense activity to be productive on these soil types.

Prior to conducting field work, permission was sought from landowners, where their land was posted against trespassing. In cases where land was posted and the landowners could not be contacted, ranking of wetlands could not be done in the field. Investigators respect the rights of landowners and their decision to deny open access to their property. In New Hampshire, the public is allowed to access a private property that is not posted. The majority of the wetland complexes were on un-posted land and areas where landowner permission was obtained.

Field Work

Six wetland complexes identified from the maps were scheduled for field onsite assessment. They ranged from 90 - 1036 acres in area. Digital photography, global positioning system (GPS) points, soil auguring, and field notes were used to document spatial and attribute data at all sites observed. A Wetland Function – Value Evaluation Form was filled out onsite as a comparative means for each wetland. The matrix allowed for relative and objective comparison between different wetlands in Town. Appendix A displays a blank Evaluation Form used at each wetland inventoried and assessed in Northumberland. Functional values evaluated included:

1. groundwater recharge/discharge
2. floodflow alteration
3. fish and shellfish habitat
4. sediment/toxicant retention
5. nutrient removal
6. production export
7. sediment/shoreline stabilization
8. wildlife habitat
9. recreation
10. education/scientific value
11. uniqueness/heritage

12. visual quality/aesthetics
13. endangered species habitat
14. other (additional noteworthy qualities)

Mapping Analysis

Field data was processed as point and polygon data with linked attribute tables and photography using ArcView 3.3 software. Polygons and points of new coverages were digitized using aerial photography (DOQs), topographic maps; NRCS soil maps, FWS NWI maps, processed GPS points, and field notes.

Analysis of wetland function and value were conducted by following and modifying the *Method for Comparative Evaluation of Nontidal Wetlands in New Hampshire*, March 1991 by Alan P. Ammann and Amanda Lindley Stone. For each wetland inventoried and rated during field work, a Wetland Function – Value Evaluation Form was filled-out. The matrices and ranking in each evaluation form allowed for side-by-side comparison of the wetlands in Northumberland. Total Wetland Value Units for a wetland were calculated on these data sheets using average Functional Value.

$$(\text{Average Functional Value}) \times (\text{Acre of evaluation area}) = \text{Wetland Value Units}$$

Wetland Value Units were compared for each wetland: the higher the number, the higher the wetland ranks within the Town.

Public Workshop Presentation

At the completion of the fieldwork and GIS analyses, Watershed to Wildlife, Inc. and North Country Council, Inc. will hold a workshop in Northumberland's Town Hall to discuss results of the study and future planning options for the Town. The goal of this meeting is to increase public awareness of the importance of sustainable conservation or protection of some of the Town's wetlands and associated wildlife habitat. In addition, work from this project will be available for public viewing via 8½ by 11 paper handouts as requested through proper venues.

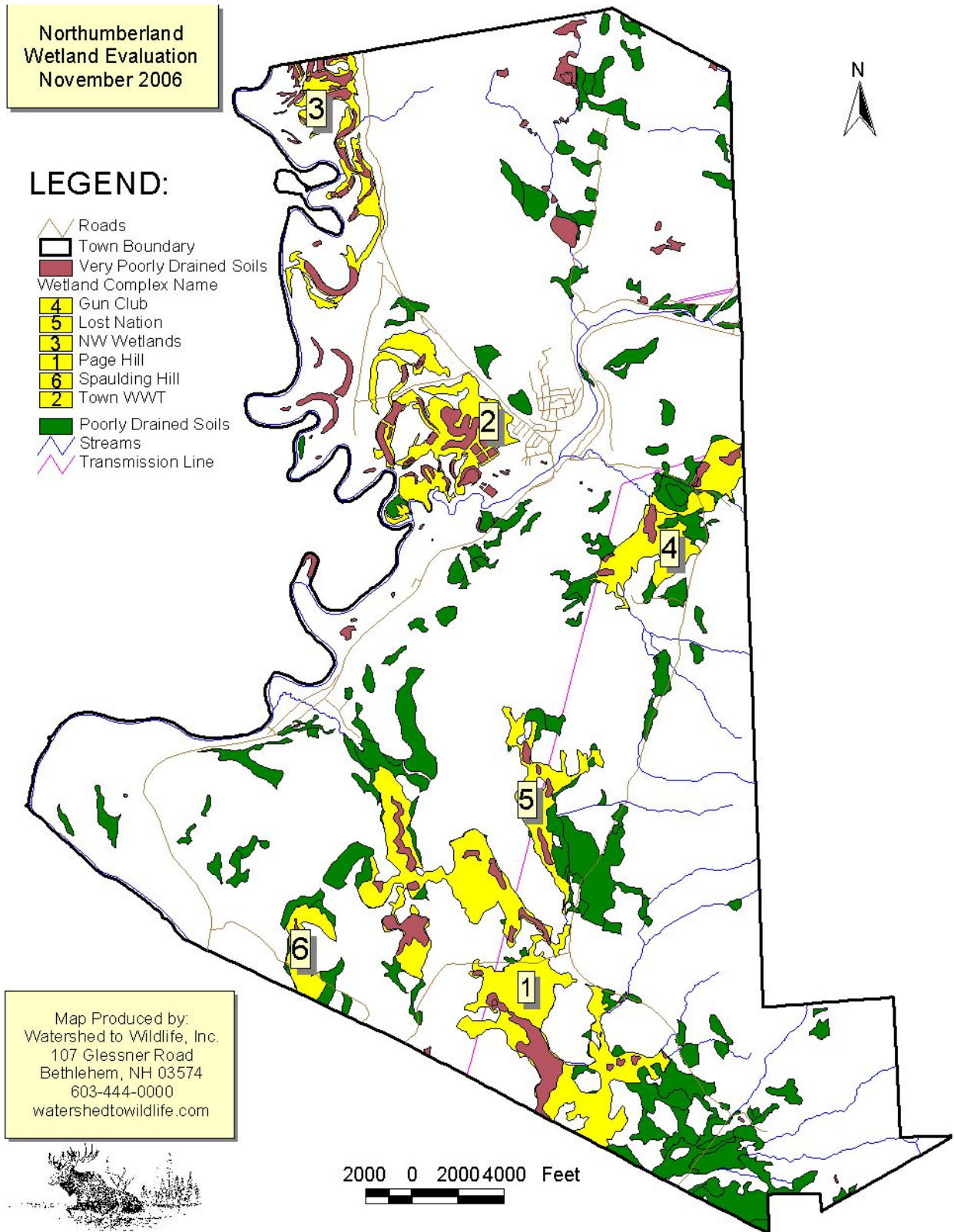
Results

Six wetland complexes were inventoried and ranked in the field after the initial GIS analysis using available data. There are several more wetlands in Northumberland, but these were not inventoried for the following reasons:

1. Lack of very poorly drained soil (Hydric A) in the wetland
2. Denied access to private property
3. Size of wetland was under 2 acres

All six wetlands inventoried were large – the smallest being just under 90 acres in size and the largest just over 1036 acres. All contained over 50% very poorly drained soils and had a diversity of wetland types.

On the following page is a map of the wetland areas in Northumberland where wetlands were assessed and evaluated. Each wetland is numbered and in yellow.



Spaulding Hill Wetland Complex (# 6)

The Spaulding Hill Wetland Complex is the smallest of those inventoried and field assessed in this study. This wetland is just under 90 acres and lies between Route 3, the Page Hill Road and the Northumberland/Lancaster town line. Table 1a. summarizes the National Wetland Inventory (NWI) data and wetland classification by the U.S. Fish and Wildlife Service (Classification of Wetlands and Deepwater Habitats of the United States, 1979, U.S. Department of the Interior, Fish and Wildlife Service, Publication No. FWS/OBS-79/31). The wetland classification types were confirmed during field inventory.

Table 1a.

NWI wetland code	NWI wetland name
PEM1Fb	Palustrine emergent, persistent vegetation, semi-permanently flooded, and beaver
PSS1Eb	Palustrine scrub-shrub, broad-leaved deciduous, seasonally flooded/saturated, and beaver
PUBFb	Palustrine unconsolidated bottom, semi-permanently flooded, and beaver
PFO4E	Palustrine forested, needle-leaved evergreen, seasonally flooded/saturated
PF04/2E	Palustrine forested, needle-leaved evergreen Palustrine forested, needle-leaved deciduous, seasonally flooded/saturated

This wetland occurs in a basin area that is heavily vegetated providing good potential for groundwater recharge and erosion control, as well as potential nutrient and chemical removal, with good wide buffers. Though rated fairly high in flood control potential due to sub-watershed steepness, it is not connected to the Connecticut River and is the headwater source into a much larger wetland complex in the abutting town of Lancaster to the south. This complex contains a variety of wildlife habitat types, lacking only in significant amounts of open water. Beaver (*Castor canadensis*) ('b' in Table 1a.) have directly influenced portions of this wetland helping to create some areas of open water and increased diversity of habitat. These open water areas make up only a very small portion of this wetland and therefore it received a low value for fish and shellfish habitat. This wetland is heavily dominated by forested habitat with mature trees and shrubby vegetation. Recreation and educational value also received a relatively low value in large part to the fact that accessibility is limited to this wetland complex. Compared to other wetlands assessed in Northumberland, this one contains a lower overall diversity and is relatively small (the portion in Northumberland) which affected its score as well.

Peacham and bucksport muck combined give this wetland 50.16% (Summary Table) very poorly drained soils. The remaining percentage of this wetland is made up of mostly pillsbury sandy loam and lyme fine sandy loam (Table 2a.). All four of the soils that make up the Spaulding Hill Wetland Complex are common wetland soils found throughout Northumberland and the surrounding area.

Based on these factors and those outlined in the fieldwork section of the introduction of this report, the assessed functional value of this wetland complex is 10.1 out of a possible high of 14, with the total wetland value being 908.6 (10.1 x 89.96ac.). This functional value is the lowest of the six wetlands inventoried in Northumberland.

Table 2a.

Drainage Class	Soil Description	NRCS Soil Symbol	Acres
Very poorly drained	Peacham muck	549A	34.29
Very poorly drained	Bucksport muck	895A	10.83
Poorly drained, Including open water and NWI listed	Pillsbury sandy loam Lyme fine sandy loam	647B 247C	44.84

Lost Nation Wetland Complex (# 5)

The Lost Nation Wetland Complex is located between the Lost Nation Road, near the junction with Page Hill Road, and the Cape Horn ridge. Hutchins Mountain borders this wetland to the east and steep un-named slopes border it to the north. This 176 acre wetland lies within a narrow valley between these steep slopes giving it a long and narrow shape. The average functional value of the Lost Nation Wetland Complex is 10.65 and the total functional value is 1878.23 (10.65 x 176.36ac.). This wetland is the second smallest in size, with the second lowest average and total functional values of the wetland complexes assessed in Northumberland.

This wetland is a valuable source of wildlife habitat because it is surrounded by forested habitat, along with openings. It is bordered by agricultural fields, the transmission lines, and steep mountains. Within the wetland there are numerous wetland types adding to the overall habitat diversity (Table 1b). This wetland also received high scores because the large amount of forested habitat surrounding it act as excellent buffers and protect the surrounding area from erosion damage. This wetland is also not easily accessed, making it remote. Sediment, toxicant, and nutrient removal also received high scores. There is potential for these problems due to the nearby agricultural land uses and steep slopes, but the large amounts of vegetation, mucky soils, and water work as a filtration source alleviating these issues.

Table 1b.

NWI wetland code	NWI wetland name
PEM1E	Palustrine emergent, persistent vegetation, seasonally flooded/saturated

PFO2E	Palustrine forested, needle-leaved deciduous, seasonally flooded/saturated
PFO4/2E	Palustrine forested, needle-leaved evergreen Palustrine forested, needle-leaved deciduous, seasonally flooded/saturated
PSS1/EM1E	Palustrine scrub-shrub, broad-leaved deciduous Palustrine emergent, persistent vegetation, seasonally flooded/saturated
PSS1Eb	Palustrine scrub-shrub, broad-leaved deciduous, seasonally flooded/saturated, beaver
PFO5Eb	Palustrine forested, dead, seasonally flooded/saturated, beaver
PUBFb	Palustrine unconsolidated bottom, semi-permanently flooded, beaver
PEM1/SS1Eb	Palustrine emergent, persistent vegetation Palustrine scrub-shrub, broad-leaved deciduous, seasonally flooded/saturated, beaver
PFO4E	Palustrine forested, needle-leaved evergreen, seasonally flooded/saturated
PFO4/SS1E	Palustrine forested, needle-leaved evergreen Palustrine scrub-shrub, broad-leaved deciduous, seasonally flooded/saturated

This wetland contains limited amount of open water reducing its scores for fish and shellfish habitat and recreation. Limited access also caused a lower score for recreation along with educational and aesthetic functions. Groundwater recharge and discharge along with floodflow alteration also received lower scores because this wetland is relatively small compared to the other wetlands assessed and lies in a very narrow valley surrounded by steep slopes and is unconnected to any large waterbody.

Very poorly drained soils make up 73.66% (summary table) of the soils in this wetland. Peacham, bucksport and rumney soil complex makes up the largest portion of the very poorly drained soils with medomak mucky silt loam, bucksport muck and peacham

muck making up the remaining amount of very poorly drained. Pillsbury sandy loam is the only poorly drained soil found in the Lost Nation Wetland Complex (Table 2b).

Table 2b.

Drainage Class	Soil Description	NRCS Soil Symbol	Acres
Very poorly drained	Peacham, Bucksport & Rumney Complex	897A	64.00
Very poorly drained	Medomak mucky silt loam	406A	39.29
Very poorly drained	Bucksport muck	895A	30.20
Very poorly drained	Peacham muck	549A	30.08
Poorly drained, Including open water and NWI listed	Pillsbury sandy loam	647B	46.46

Gun Club Wetland Complex (# 4)

The Gun Club Wetland Complex is about 296 acres in size and lies along the northern section of the Lost Nation Road, around the gun club area. The PSNH transmission lines makes up the western and northern boundaries. The eastern boundary is a very steep mountain range, the Lost Nation Road, and the Northumberland/Stark town line. The southern boundary is Roaring Brook. This wetland is not directly adjacent to the Upper Ammonoosuc River, but Roaring Brook drains out of the wetland and into this major River. Along with Roaring Brook, Ames Brook and other un-named tributaries flow into this wetland.

The wetland's location within Northumberland's landscape gives it important functions such as groundwater recharge and discharge and flood flow alteration. This wetland lies within a large, relatively flat area with large amounts of porous soils in between a mountain range and large river. This wetland acts as a buffer to the Upper Ammonoosuc River slowing large amounts of runoff from the adjacent mountain slopes before they reach the River and Town. This wetland is well vegetated and buffered by large amounts of forested uplands making it important for wildlife. There are diverse habitats surrounding the wetland ranging from open fields to forested mountainsides. There are also numerous wetland types within the complex ranging from open water, emergent vegetation, to scrub-shrub habitat and forested wetlands (Table 1c.). Along with numerous habitat and wetland types, the Gun Club Wetland also contains an assortment of soil types. Five different types of very poorly drained soils and five different types of poorly drained soils (Table 2c) make up this wetland. Due to this wetland's proximity to the Upper Ammonoosuc River, it contains more riverine type soils within portions of it.



The Gun Club Wetland Complex contains numerous wetland types including a significant amount of various forested wetlands. The amount/diversity of vegetation typically found in forested wetlands provides a variety of functions and values such as wildlife habitat, buffers, and toxicant retention.

Because of the diversity in soils, wetland types, and surrounding upland habitats, this wetland also has potential for rare and/or endangered species habitat. The greater the diversity of habitat niches the greater the potential for these types of species to exist. Its connectivity to the Upper Ammonoosuc River is another important and unique characteristic that may provide potential habitat for rare/endangered species like Atlantic Salmon. The Gun Club Wetland is less than 1 mile up Roaring Brook from the Upper Ammonoosuc River. Another valuable feature of this wetland is the significant amount of abutting lands that are protected and owned by the Town and State. This characteristic may make long-term protection and/or conservation of this wetland complex more feasible.

Table 1c.

NWI wetland code	NWI wetland name
PSS1E	Palustrine scrub-shrub, broad-leaved deciduous, seasonally flooded/saturated
PFO1E	Palustrine forested, broad-leaved deciduous, seasonally flooded/saturated
PFO1/4E	Palustrine forested, broad-leaved deciduous Palustrine forested, needle-leaved evergreen, seasonally flooded/saturated
PEM1E	Palustrine emergent, persistent vegetation, seasonally flooded/saturated

PSS1Eb	Palustrine scrub-shrub, broad-leaved deciduous, seasonally flooded/saturated, and beaver
PUBFb	Palustrine unconsolidated bottom, semi-permanently flooded, and beaver
PSS1Fh	Palustrine scrub-shrub, broad-leaved deciduous, semi-permanently flooded, and diked/impounded
PEM1Eb	Palustrine emergent, persistent vegetation, seasonally flooded/saturated, and beaver
PFO4E	Palustrine forested, needle-leaved evergreen, seasonally flooded/saturated
PSS1/FO1Eb	Palustrine scrub-shrub, broad-leaved deciduous Palustrine forested, broad-leaved deciduous, seasonally flooded/saturated, beaver
PSS1/4Eb	Palustrine scrub-shrub, broad-leaved deciduous Palustrine scrub-shrub, needle-leaved evergreen, seasonally flooded/saturated, beaver
PSS1/EM1Eb	Palustrine scrub-shrub, broad-leaved deciduous Palustrine emergent, persistent vegetation, seasonally flooded/saturated, beaver

Despite the internal diversity within this wetland complex, it received lower scores due to its relatively low diversity when looking at Northumberland as a whole. These varying habitat, wetland, and soil types are all common within the Town. There are also limited amounts of open water habitat causing low scores for fish and shellfish habitat and recreation. Even though Roaring Brook connects the wetland with the Upper Ammonoosuc River, it is a great enough distance and a small enough brook so that this did not significantly raise the scores for these functions. Accessibility is also a limiting factor for human uses such as recreation, education, and aesthetics. This wetland also experiences a degree of fragmentation due to the Lost Nation Road and Brook Road running through sections of it.

Table 2c.

Drainage Class	Soil Description	NRCS Soil Symbol	Acres
Very poorly drained	Bucksport muck	895A	52.47
Very poorly drained	Peacham, Bucksport & Rumney soils	897A	45.41
Very poorly drained	Pondicherry muck	992A	43.05
Very poorly drained	Peacham muck	549A	37.58
Very poorly drained	Wonsqueak muck	995A	32.03
Poorly drained, Including open water and NWI listed	Cohos loam Lyme fine sandy loam Moosilauke loam Rumney fine sandy loam Grange silt loam Charles silt loam	505A 247B 415A,B 105A 433A 209A	85.36

The Gun Club Wetland Complex received an average functional value of 11 out of 14 and a total functional value of 3254.9 (11 x 295.9) (Summary Table). This wetland contains numerous important functions and values, but its relatively low diversity and limited open water cause it to rank lower than some of the other wetland complexes within Northumberland.



This wet field near Roaring Brook within the Gun Club Wetland Complex transitions into a scrub-shrub wetland and then into a tamarack dominated forested wetland. Tamarack bogs are a common wetland type in Northumberland.

NW Wetland Complex (# 3)

The NW Wetland Complex lies within the northwestern corner of Northumberland. Its boundaries are made up by the Connecticut River (west), Route 3 (east) and the Northumberland/Stratford town line (north). On the opposite side of Route 3 in this area, lies Morse Mountain. This wetland is ranked as the third most valuable wetland in

Northumberland by this assessment, but it is fourth in size with 293.51 acres (the Gun Club Wetland is slightly larger). It is ranked higher than the previous three wetlands because of its high functional values. This wetland received an average functional value of 12.4 and a total functional value of 3639.52 (12.4 x 293.51ac.) (Summary Table).



Floodplain forests, such as the one in this photograph abutting the Connecticut River, are unique habitats. They are comprised of vegetation (often dominated by silver maple) that is specially adapted to periods of inundation and periods of drier conditions. This vegetation along with the deep mucky soils present absorbs and holds large quantities of water protecting surrounding areas from the flood waters.

This wetland lies within the floodplains of the Connecticut River making flood control an important function. The deep mucky soils and significant amount of vegetation allow this wetland to absorb excess water from the Connecticut River reducing the affect flood events have on Route 3, the houses along this road, and downtown Northumberland which lies just south of the wetland. The dominant soil in this wetland is medomak mucky silt loam and the subdominant is charles silt loam (Table 1d). Medomak is a very poorly drained soil typical of floodplain and old streambed areas. The characteristics of this soil allow it to store excess/runoff water. Charles sit loam is a soil typically found with medomak mucky silt loam in floodplain or old riverbed areas. This soil typically holds large amounts of water, but not as much as medomak. Pastureland is a common land use on this soil type because it is rich and is typically found in very flat areas. This is true in Northumberland; great deals of pasturelands are found on charles silt loam along the Connecticut River.

Table 1d.

Drainage Class	Soil Description	NRCS Soil Symbol	Acres
Very poorly drained	Medomak mucky silt loam	406 A	144.65
Very poorly drained	Wonsqueak muck	995A	13.03
Very poorly drained	Peacham, Bucksport & Rumney soils	897A	7.68
Poorly drained, Including open water and NWI listed	Charles silt loam	209A	125.69

Along with controlling floodwaters, medomak soils are also able to maintain and improve water quality. They act as a natural filter retaining a significant amount of sediments, toxicants and potentially harmful nutrients from the surrounding aquatic systems and other soils. The large amounts of agricultural lands, busy Route 3, and floodwaters from the Connecticut River abutting this wetland, are typically significant sources of excess sediments, nutrients, and toxicants which can be harmful pollutants to waters and soils. This wetland is also an important source of groundwater recharge and discharge. Its connectivity to the Connecticut River, adjacency to a steep mountain range, and the mucky and sandier soils along the River, make this wetland very efficient at this function. All of the previously mentioned functions/values received perfect to near perfect scores.

Table 2d.

NWI wetland code	NWI wetland name
PSS1E	Palustrine scrub-shrub, broad-leaved deciduous, seasonally flooded/saturated
PEM1E	Palustrine emergent, persistent vegetation, seasonally flooded/saturated
PFO4E	Palustrine forested, needle-leaved evergreen, seasonally flooded/saturated
PEM1F	Palustrine emergent, persistent vegetation, semi-permanently flooded
PUBF	Palustrine unconsolidated bottom, semi-permanently flooded
PABF	Palustrine, aquatic bed, semi-permanently flooded
PEM1/SS1E	Palustrine emergent, persistent vegetation Palustrine scrub-shrub, broad-leaved deciduous, seasonally flooded/saturated

NWI wetland code	NWI wetland name
PEM1/SS1F	Palustrine emergent, persistent vegetation Palustrine scrub-shrub, broad-leaved deciduous, semi-permanently flooded
PFO1E	Palustrine forested, broad-leaved deciduous, seasonally flooded/saturated
PEM1A	Palustrine emergent, persistent vegetation, temporarily flooded
PSS1C	Palustrine scrub-shrub, broad-leaved deciduous, seasonally flooded
PFO1C	Palustrine forested, broad-leaved deciduous, seasonally flooded
PSS1A	Palustrine scrub-shrub, broad-leaved deciduous, temporarily flooded

The NW Wetland contains numerous and diverse wetland/habitat types (Table 2d). Along with forested and scrub-shrub wetlands, there is a great deal of emergent and open water habitat. These significant amounts of open water give it potential for recreational activities such as kayaking, canoeing, fishing and duck hunting. There are also multiple ways to access this wetland from Route 3 and the railroad bed running through much of it.



Lack of buffers between the Connecticut River and agricultural fields have caused significant amounts of erosion, as seen in this photograph. Severe erosion can cause damage to the landscape and an increase in sedimentation to the area's water.

The open water and easy access along with its overall diversity make this wetland a good source of recreation, education and aesthetics. The one component of this wetland

that lowered these scores slightly is its limited pristine component due to the fact that it is so closely surrounded by human activity.

There are two features of this wetland that reduced some of its scores in this assessment; the lack of overall buffers and the presence of some fragmentation. There is a great deal of habitat diversity within and around this wetland, but unfortunately fragmentation and lack of buffers degrade their quality. This wetland is fragmented from the nearby forested mountain range to the west side by Route 3. This road is busy and large enough to prevent/reduce the use of this wetland by some wildlife species. The railroad bed running through much of the wetland also causes fragmentation for certain wildlife species. There are structures that reduce this fragmentation and the affect on the overall hydrology of the wetland system: the railroad bed allows the hydrology of the wetland and the Connecticut River to remain connected with the use of bridges and trestles, and Route 3 allows runoff water from the surrounding mountains to flow into the wetland through culverts.

Lack of buffers negatively affects the quality of available wildlife habitat and water quality. Buffers can help to reduce and/or slow the amount of sediments, toxicants and nutrients entering the aquatic system. They are also very important in shoreline stabilization and reducing the amount of erosion that takes place in areas of fast moving water, particularly in times of high water and flooding. This is especially a problem within this wetland complex and along the stretches of the Connecticut River that are adjacent to it. The root systems of shrubs and trees typically found in buffers run much deeper and are much stronger than the roots of grasses found in open fields. Buffers are also very important for the movement of wildlife species between varying habitat types. Wildlife, ranging from amphibians to moose, which often travel to and from wetlands, need adequate cover when making these journeys. This wetland does contain buffers and potential wildlife travel corridors in many areas, but is lacking them in others.

Overall this wetland is a unique and very valuable wetland within Northumberland. It serves numerous functions that are valued by both the people and the wildlife in the area.



This photograph, taken from Route 3, shows the steep slope and trees and shrubs that buffer this wetland from the nearby busy road. Through the trees the open water, emergent vegetation, and scrub-shrub habitats that are preferred by muskrats, waterfowl and numerous other wildlife species can be seen

Town WWT Wetland Complex (# 2)

This photograph, taken behind the old Northumberland Town landfill, illustrates the significant amount of navigable channeled open water found in this wetland, and the abrupt transition from wetland to upland habitat. In the center of this photo at the edge of the emergent vegetation and open water is a beaver lodge. Numerous muskrat huts were also observed in this emergent habitat.

The Town WWT Wetland Complex lies just above the confluence of the Upper Ammonoosuc River and the Connecticut River and between the downtown area of Northumberland and the Connecticut River. The northern section of it is situated between Route 3 and the Brown Road. This wetland is just over 462 acres making it the second largest wetland inventoried in Northumberland. This wetland received the highest average functional value, 12.7, and the second highest total functional value, 5869.31 (12.7 x 462.15ac.) (Summary Table).

This wetland contains a wide diversity of wetland types (Table 1e) with various upland habitats dispersed within. Areas of ponded and channeled open water with emergent vegetation, floodplain forests, forested acidic sphagnum bogs, softwood stands, oak and maple stands, scrub-shrub habitats, open fields and regenerating clear-cuts to name a few, were observed within and around this wetland. The high diversity in habitat types creates assorted opportunities for aquatic, semi-aquatic, and terrestrial plant and wildlife species to find suitable habitat for food, cover, travel, resting, mating, and birthing sites. Even though this wetland was assessed in November, making complete plant and bird

species observations difficult, bird nests, deer, moose, bear, snowshoe-hare, woodpecker, beaver, and muskrat sign were all directly observed. A significant amount of moose sign was observed on a small, steep flat-topped knoll surrounded within these wetlands. The characteristics of this knoll make it suitable as a potential moose calving site. A great deal of mast trees and shrubs such as oak, beech, wild raisin, highbush cranberry, beaked-hazelnut and winterberry were observed and documented in this wetland. Another reason why this wetland is such unique wildlife habitat is because it is so close to downtown, yet very large at the same time. This wetland, with its diverse upland and wetland habitats, has the potential to serve as a haven for a large number of Northumberland's wildlife species.

Table 1e.

NWI wetland code	NWI wetland name
PFO4E	Palustrine forested, needle-leaved evergreen, seasonally flooded/saturated
PSS1/EM1E	Palustrine scrub-shrub, broad-leaved deciduous Palustrine emergent, persistent vegetation, seasonally flooded/saturated
PUBF	Palustrine unconsolidated bottom, semi-permanently flooded
PSS1Eb	Palustrine scrub-shrub, broad-leaved deciduous, seasonally flooded/saturated, beaver
PFO1/SS1A	Palustrine forested, broad-leaved deciduous Palustrine scrub-shrub, broad-leaved deciduous, temporarily flooded
PEM1E	Palustrine emergent, persistent vegetation, seasonally flooded/saturated
PSS1C	Palustrine scrub-shrub, broad-leaved deciduous, seasonally flooded
PSS1E	Palustrine scrub-shrub, broad-leaved deciduous, seasonally flooded/saturated
PUBH	Palustrine unconsolidated bottom, permanently flooded
L1UBHh	Lacustrine limnetic, unconsolidated bottom, permanently flooded, diked/impounded
PFO1E	Palustrine forested, broad-leaved deciduous, seasonally flooded/saturated
PSS1A	Palustrine scrub-shrub, broad-leaved deciduous, temporarily flooded
PFO1A	Palustrine forested, needle-leaved deciduous, temporarily flooded

NWI wetland code	NWI wetland name
PFO1C	Palustrine forested, broad-leaved deciduous, seasonally flooded
PSS1/EM1F	Palustrine scrub-shrub, broad-leaved deciduous Palustrine emergent, persistent vegetation, semi-permanently flooded
PUBHx	Palustrine unconsolidated bottom, permanently flooded, excavated
PFO1A	Palustrine forested, broad-leaved deciduous, temporarily flooded
PSS1/4E	Palustrine scrub-shrub, broad-leaved deciduous Palustrine scrub-shrub, needle-leaved evergreen seasonally flooded/saturated
PEM1F	Palustrine emergent, persistent vegetation, semi-permanently flooded



These photographs illustrate some of the abrupt transitions from wetland to upland habitats within the Town WWT Wetland Complex. The photo on the left shows a steep hillside that drops from a plateau-like knoll to a floodplain, forested wetland while the photo on the right shows an oak forest immediately dropping into an emergent/open water wetland. These edge/transition habitats provide unique areas for wildlife because resources from both wetland and upland habitats can quickly and easily be accessed.

A large portion of this wetland complex is situated within the floodplains of the Connecticut River and the Upper Ammonoosuc River, and is directly connected to both in sections. This along with the fact that it is heavily vegetated with portions of open water, makes it an important source of groundwater recharge and discharge. Due to its location this wetland is also very important to the Town for its ability to control flood waters. The wetland is the only remaining buffer between downtown Northumberland, the Connecticut River, and a section of the Upper Ammonoosuc River. The wetland is able to absorb

significant amount of excess water energy before it reaches Town. The wetland also works as a buffer in the opposite direction by filtering excess sediments, toxicants, and nutrients produced through human land use and activity in Town, before it reaches the Connecticut and Upper Ammonoosuc Rivers.



This vernal pool was observed and documented within a floodplain forest of this wetland. To the west of this vernal pool lies a large open water channel surrounded by emergent and scrub-shrub wetlands. To the east is a forested, scrub-shrub bog.

Recreation scored relatively high for this wetland because of the numerous opportunities that exist. There is enough open water so that kayaking, canoeing and fishing are possible in some portions however navigable connectivity to the Connecticut and Upper Ammonoosuc Rivers is limited except during flood stage water levels. Due to the excellent wildlife habitat and abundant sign observed, hunting, trapping and wildlife viewing are other possible uses for this wetland. In fact, Emerson's Outfitters have set up a trail network with targets for a bow and arrow practice course. These trails can be accessed directly from the store and run throughout a section of this wetland complex. Due to its proximity to downtown Northumberland, this wetland would make a suitable choice for educational projects and programs. Accessibility is available at numerous locations such as along Brown Road, Route 3, Emerson's, and the Northumberland sewer lagoons. The easiest access to the navigable water is, unfortunately, behind the old transfer station which is posted to the general public. Another deterrent to this access point is the significant amount of trash and debris scattered throughout this portion of the wetland complex degrading its recreational and aesthetic quality.

The dominant soil in this wetland is bucksport muck, with peacham, pondicherry muck, and searsport muck making up the rest of the very poorly drained soils (Table 2e). Peacham, bucksport and rumney complex soils are typically sites of open water, emergent, and some scrub-shrub wetlands. Bucksport, pondicherry, and searsport mucks tend to be more forested and contain more bog like conditions. Black spruce, tamarack, and northern white cedar are usually found growing on these soils with a thick groundcover of sphagnum moss. All of these wetland types were observed during field assessment.

Table 2e.

Drainage Class	Soil Description	NRCS Soil Symbol	Acres
Very poorly drained	Bucksport muck	895A	120.56
Very poorly drained	Peacham, Bucksport & Rumney complex	897A	50.92
Very poorly drained	Pondicherry muck	992A	45.26
Very poorly drained	Searsport muck	15A	18.91
Poorly drained,	Charles silt loam	209A	226.5
	Rumney fine sandy loam	105A	
Including open water and NWI listed			



Spruce, fir, and tamarack bogs with sphagnum hummocks are commonly found dispersed within this complex. These types of vegetation and hydrology are typically found on bucksport, pondicherry, and searsport mucks, which are some of the dominant soils in this wetland.

The Town WWT Wetland Complex is an extremely valuable wetland to the town of Northumberland for its functions as a buffer between the downtown area and the Connecticut and Upper Ammonoosuc Rivers, its wildlife habitat, recreation options and overall size and diversity. Being in close proximity to such intense human activity has had some negative effects on the wetland. A section of the Brown Road runs through the

northern corner of this wetland causing some fragmentation. This is not a major road and therefore its impacts are minimal. The most apparent human influence on this wetland is the amount of trash scattered throughout it. Portions of it are bordered by homes and roads causing incidental trash to find its way in. The largest source of this trash is from the old Northumberland landfill. Trash of various kinds was found large distances away from the actual old dump site. Northumberland's sewer lagoons are also located within this wetland complex. All these components reduce the visual and pristine qualities of portions of this wetland. Despite the amount of human influence on this wetland there are still many areas within the wetland that have a remote, "untouched" quality.



Beaver ponds, even if they are no longer in current use as this one, create important habitat for a wide variety of plant and animal species. The snags and scrub-shrub border along the open water are important features preferred by waterfowl. Bear, moose, and deer sign were directly observed. Numerous mature and regenerating northern white cedar trees were found growing in this area along with tamarack, spruce, and fir. This particular pond lies less than ½ mile from houses and human activities yet portrays a sense of remoteness.

Page Hill Wetland Complex (# 1)

The Page Hill Wetland Complex is by far the largest in Northumberland, spanning over 1,000 acres. Due to its large size and topography, a great deal of diversity exists within it. This photograph was taken at an old beaver pond near the power lines. Within this area open water and emergent habitat was observed along with a northern white cedar swamp, sphagnum/meadow bog, black spruce bog, and tamarack/heath bog with adjacent uplands.

The Page Hill Road Wetland Complex lies between the Northumberland/Lancaster town line and the Lost Nation Road, with a portion of the Page Hill Road bisecting it. The electric transmission line also runs a distance through it. This wetland is by far the largest complex in Northumberland at 1036 acres. It is important to note that this complex extends for over 1800 acres in abutting Lancaster as their largest wetland complex as well. This wetland received a relatively high average functional value of 12 out of 14 giving it a total functional value of 12432.84 (12 x 1036.07ac.) (Summary Table).

This wetland is not only very large, but also extremely diverse. The NWI data and classification done by the National Fish and Wildlife Service classified 22 various wetland types/combinations within this wetland, most of which were observed in the field (Table 1f). This diversity along with the large size gave this wetland complex a very high score for its production export value. For the same reason this wetland also scored very high for wildlife habitat. Within the wetland there are numerous habitat types to accommodate for a variety of plant and wildlife species. In particular there is a significant amount of beaver activity in this complex. Beavers are continually altering their surroundings by creating new ponded areas. They don't tend to stay in one area for their entire lifetime preventing the landscape from remaining static and are therefore considered

a beneficial component for wildlife diversity. Once beaver move to a new location, their dams tend to slowly degrade allowing the water levels to drop and form wet-meadows in areas of their past activities. The constant yet gradual changes they create tend to increase the areas' overall plant and wildlife species richness. The surrounding uplands of this wetland complex also contribute to its importance of a source of wildlife habitat. The uplands in this wetland complex extend for a great distance with relatively little to no human development activities.

Table 1f.

NWI wetland code	NWI wetland name
PFO4E	Palustrine forested, needle-leaved evergreen, seasonally flooded/saturated
PEM1/SS1Eb	Palustrine emergent, persistent vegetation Palustrine scrub-shrub, broad-leaved deciduous, seasonally flooded/saturated, beaver
PUBFb	Palustrine unconsolidated bottom, Semi-permanently flooded, beaver
PSS1Eb	Palustrine scrub-shrub, broad-leaved deciduous, seasonally flooded/saturated, beaver
PFO2/SS3Ba	Palustrine forested, needle-leaved deciduous Palustrine scrub-shrub, broad-leaved evergreen, saturated, acidic
PEM1Eb	Palustrine emergent, persistent vegetation, seasonally flooded/saturated, beaver
PSS1E	Palustrine scrub-shrub, broad-leaved deciduous, seasonally flooded/saturated
PSS4Ba	Palustrine scrub-shrub, needle-leaved evergreen, saturated, acidic
PSS1/EM1E	Palustrine scrub-shrub, broad-leaved deciduous Palustrine emergent, persistent vegetation, seasonally flooded/saturated
PUBHh	Palustrine unconsolidated bottom, permanently flooded, diked/impounded
PEM1E	Palustrine emergent, persistent vegetation, seasonally flooded/saturated
PFO1/2Ba	Palustrine forested, broad-leaved deciduous Palustrine forested, needle-leaved deciduous, saturated, acidic

NWI wetland code	NWI wetland name
PSS3Ba	Palustrine scrub-shrub, broad-leaved evergreen, saturated, acidic
PFO4/2E	Palustrine forested, needle-leaved evergreen Palustrine forested, needle-leaved deciduous, seasonally flooded/saturated
PSS1Fb	Palustrine scrub-shrub, broad-leaved deciduous, semi-permanently flooded, beaver
PEM1Eh	Palustrine emergent, persistent vegetation, seasonally flooded/saturated, diked/impounded
PUBHx	Palustrine unconsolidated bottom, permanently flooded, excavated
PFO5/SS1Fb	Palustrine forested, dead Palustrine scrub-shrub, broad-leaved deciduous, semi-permanently flooded, beaver
PSS1/FO4E	Palustrine scrub-shrub, broad-leaved deciduous Palustrine forested, needle-leaved evergreen, seasonally flooded/saturated
PFO2/SS3E	Palustrine forested, needle-leaved deciduous Palustrine scrub-shrub, broad-leaved evergreen, seasonally flooded/saturated
PSS2Ba	Palustrine scrub-shrub, needle-leaved deciduous, saturated, acidic
PEM1Fb	Palustrine emergent, persistent vegetation, semi-permanently flooded, beaver
PSS1/3Ba	Palustrine scrub-shrub, broad-leaved deciduous Palustrine scrub-shrub, broad-leaved evergreen, saturated, acidic
PEM1C	Palustrine emergent, persistent vegetation, seasonally flooded
R3UBH	Riverine upper perennial, unconsolidated bottom, permanently flooded

Numerous plant species were observed throughout this wetland complex adding to the diversity of various habitat types. Forested bogs are a common sight within this complex. They tended to be dominated by black spruce, tamaracks, and balsam fir.

A unique tree that is no longer typically found in abundance throughout northern New Hampshire is the northern white cedar. A significant number of groves were found growing in many of Northumberland's wetlands, especially in this wetland. The cedar along with the overall diversity of this wetland complex resulted in a relatively high score for the overall uniqueness of the complex. The understories of these forests were dominated by mast producing shrubs such as alder, winterberry, high-bush cranberry, blueberry, elderberry, mountain holly and nannyberry. In many areas, bog plants such as rhodura, Labrador tea, leatherleaf, cotton grass, pitcher plants, and sphagnum mosses were also recorded. This variability also creates a significant potential for exemplary plant communities, and rare and/or endangered plant and animal species to exist.



This forested wetland dominated by softwoods is a common sight in the Page Hill Wetland. Spruce, fir, and tamarack are often observed in this wetland and throughout the surrounding area's wetlands. The northern white cedar is another tree often observed in Northumberland's wetlands, but is not seen as commonly as it once was in the north. Northumberland has a significant amount of mature and regenerating cedars and should consider this an important and unique component of its wetlands.

The diversity of soils within this wetland is also high. Six different types of very poorly drained soils (64.73%) and four different poorly drained soils (32.27%) make up this complex (Table 2f). They are all soils that are found within other wetlands in Northumberland preventing them from being documented as unique, but they contribute to the diversity of the complex. These mucky soils along with the vegetation and large size of

this wetland make it an important groundwater recharge and discharge source, and an important filter for the surrounding area.



Winterberry was found growing through various parts of this wetland. This shrub along with other mast producing shrubs, such as high-bush cranberry and elderberry, are important food sources for a variety of wildlife species, especially migratory and resident birds.

Table 2f.

Drainage Class	Soil Description	NRCS Soil Symbol	Acres
Very poorly drained	Bucksport muck	895A	394.24
Very poorly drained	Peacham muck	549A	105.87
Very poorly drained	Peacham, Bucksport & Rumney complex	897A	78.81
Very poorly drained	Medomak mucky silt loam	406A	35.97
Very poorly drained	Wonsqueak muck	995A	29.26
Very poorly drained	Pondicherry muck	992A	26.48
Poorly drained, Including open water and NWI listed	Pillsbury sandy loam Lyme fine sandy loam Grange silt loam Cohos loam	647A,B 247A,B,C 433A 505A	365.44

This wetland received slightly lower scores for recreation and educational values. Wildlife viewing, hunting, and trapping can easily be carried out within this wetland, but access is somewhat limited. The stretch that borders Lost Nation Road is surrounded by posted property, but there is some access along Page Hill Road specifically along the power lines. This is a very aesthetic wetland but visual access is limited. There are no easily accessible overlook spots. Once in the wetland the amount of navigable water is limited. There is a channel of water running a good distance through the wetland, but it is hard to access and navigability via kayak or canoe is questionable.

This wetland is well buffered by large expanses of undeveloped land with only minimal fragmentation from Page Hill and Lost Nation roads. It is well vegetated, diverse, large and connected to an even larger wetland in the neighboring town of Lancaster. This wetland should be considered an important natural resource for the town of Northumberland.



This tamarack heath bog was a unique wetland observed within the Page Hill Wetland complex. It quickly transitioned into a bog meadow and then into an old beaver pond. Within this bog various heath plant species, cotton grass, and pitcher plants were noted. A network of well traveled deer trails were also observed throughout the bog.

Summary Table. Summary of soil percentages, size, value, and rank of wetlands inventoried in Northumberland, New Hampshire

Wetland Name	Percent very poorly drained soil	Percent poorly drained soil, open water and NWI listed	Functional Value	Number of Acres	Wetland Value Units	Rank
Spaulding Hill Wetland Complex	50.16	49.84	10.1	89.96	908.6	6
Lost Nation Wetland Complex	73.66	26.34	10.65	176.36	1878.23	5
Gun Club Wetland Complex	71.15	28.85	11	295.90	3254.9	4
NW Wetland Complex	57.18	42.82	12.4	293.51	3639.52	3
Town WWT Wetland Complex	50.99	49.01	12.7	462.15	5869.31	2
Page Hill Wetland Complex	64.73	35.27	12	1036.07	12432.84	1

Discussion and Future Applications

This study was done to equip the Town of Northumberland to implement Prime Wetland Designation if residents choose to do so. The project was funded through the Upper Connecticut River Mitigation and Enhancement Fund, and is part of a three year study to assist nine towns in the region to work towards protection of some of their more “valuable” (higher ranked) wetland resources.

It is recommended that Northumberland residents consider establishing Prime Wetlands in Town as a means to help protect these areas from developmental pressures. A town vote in favor of this special designation of wetlands is necessary first. If the Town of Northumberland decides to proceed with designating Prime Wetlands, it must submit a report with appropriate maps to the State of New Hampshire, Department of Environmental Services - Wetlands Bureau. The Wetlands Bureau will review the submission, and grant the designation if the submission is complete. At the time of this report 24 towns in NH have designated prime wetlands: Andover, Barrington, Bow,

Brookline, Derry, Enfield, Exeter, Fremont, Gilford, Goffstown, Holderness, Hooksett, Meredith, Newington, Northwood, Nashua, New London, Pelham, Salem, Sanbornton, Sandwich, Tamworth, Weare, and Wolfeboro; none in the North Country.

The six wetland complexes inventoried for this project are all valuable to the Town of Northumberland. Northumberland has a rare opportunity compared to many other parts of the state – an ability to proactively protect large wetland areas from development. The wetlands inventoried are very unique in Northumberland just due to their large sizes. Five of the six wetlands are over 100 acres, with the largest over 1,000 acres. Where many towns in the southern part of NH would consider 15 acres to be a large tract of land, Northumberland's smallest wetland assessed and ranked is six times this size. It should also be noted that all of these wetland complexes are larger than the figures given in this report due to the guidelines that, for the purposes of Prime Wetland Designation, require that at least 50 % of the wetland needs to have very poorly drained hydric soil. Therefore many of the poorly drained soils were omitted to keep the ratio of very poorly to poorly drained soils at least 1.1 to 0.9.

Northumberland has the opportunity to do something very few communities can: proactively protect some large, unique, valuable, and diverse natural resources before fragmentation occurs.

References

- Ammann, A.P. and A.L. Stone, 1991. *Method for the Comparative Evaluation of Nontidal Wetlands in New Hampshire*. New Hampshire Department of Environmental Services, Concord, NH.
- Cowardin, L.M., V. Carter, F.C. Golet and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Department of the Interior, Fish and Wildlife Service, Office of Biological Services, Washington, D.C. Publication Number FWS/OBS-79/31.
- State of New Hampshire. 2004. *New Hampshire Code of Administrative Rules: Wt 100-800*. Department of Environmental Services, Public Information and Permitting Office.
- Watershed to Wildlife, Inc. 2003-2006. *Vernal Pool Study*. Funded through the MEF, (portion within Northumberland, NH).

Appendix – Copy of Field Inventory and Assessment Form

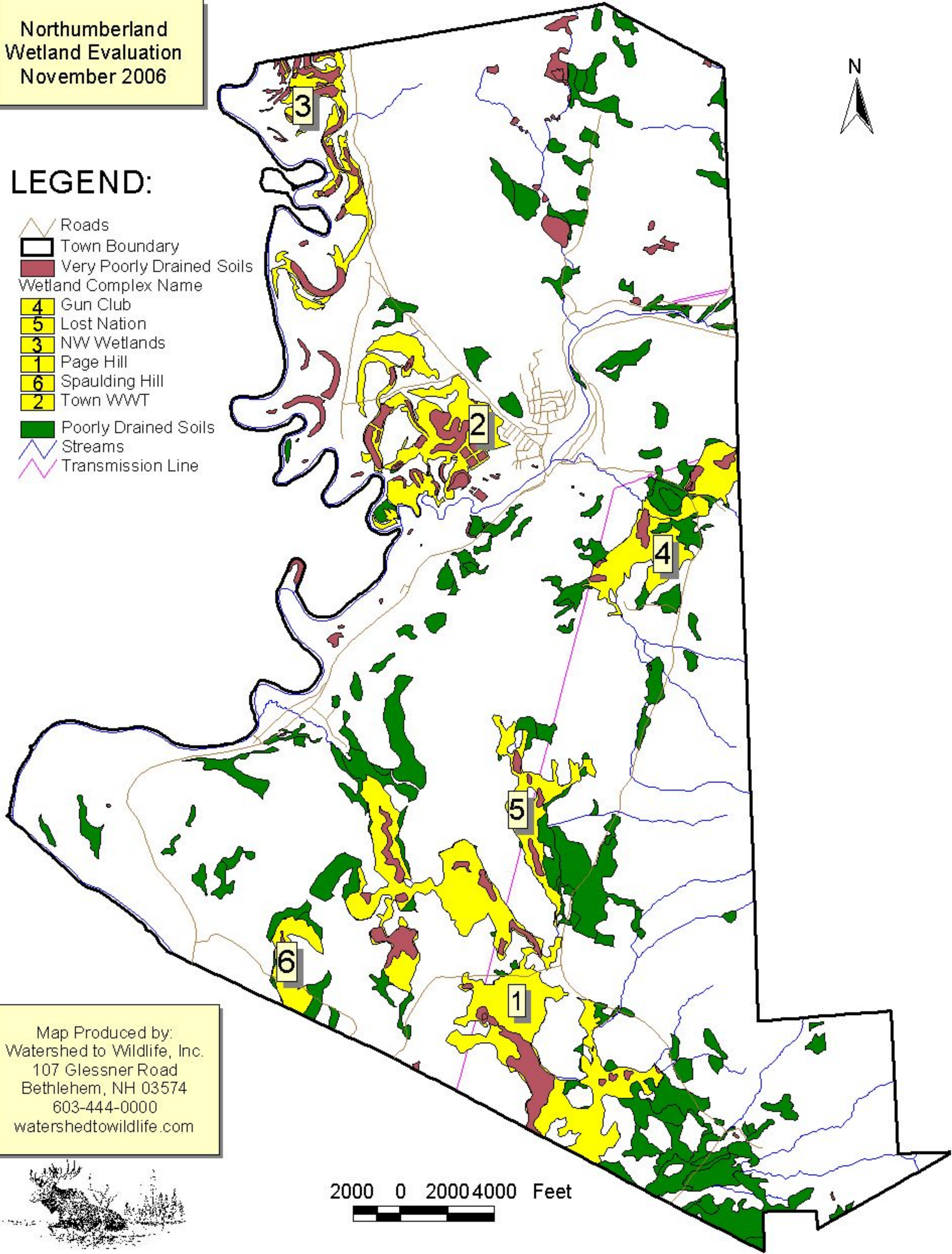
WETLAND FUNCTION – VALUE EVALUATION FORM (draft 6/3/2004)

Wetland Description:		File Number:	
		Wetland Identifier:	
		Latitude:	Longitude:
		Preparer(s):	
		Date:	
Function/Value	Capacity Y N	Summary	Principal Yes/No
Groundwater Recharge/Discharge			
Floodflow Alteration			
Fish and Shellfish Habitat			
Sediment/Toxicant Retention			
Nutrient Removal			
Production Export			
Sediment/Shoreline Stabilization			
Wildlife Habitat			
Recreation			
Educational/Scientific Value			
Uniqueness/Heritage			
Visual Quality/Aesthetics			
ES Endangered Species Habitat			
Other			

Notes: *attach list of considerations

LEGEND:

-  Roads
-  Town Boundary
-  Very Poorly Drained Soils
- Wetland Complex Name**
-  4 Gun Club
-  5 Lost Nation
-  3 NW Wetlands
-  1 Page Hill
-  6 Spaulding Hill
-  2 Town WWT
-  Poorly Drained Soils
-  Streams
-  Transmission Line



Map Produced by:
Watershed to Wildlife, Inc.
107 Glessner Road
Bethlehem, NH 03574
603-444-0000
watershedtowildlife.com

2000 0 2000 4000 Feet



Nov. 20, 2015

NH Site Evaluation committee Martin Honigberg martin.honigberg@puc.nh.gov

NHDES Collin Adams collisadams@des.nh.gov

Northumberland Conservation Committee

Edwin Mellett, Chairman

Please reply to: goldenrockfarm@hotmail.com

The Northumberland Conservation Committee has reviewed the Northern Pass Transmission Project and offer the following observations.

The transmission line will enter the town at the Stark town line and then go west and south crossing Lost Nation Road and Page Hill Road exiting the town at the Lancaster town line following an existing ROW. Most of this existing ROW is in wetlands. They have been delineated by NP only to the extent that they are within the ROW. These wetland extend beyond their ROW and the impact of this project will also extend beyond the ROW. They have not detailed how they will mitigate these impacts within the town so we cannot comment on this aspect of the project and submit that the application is incomplete without this information. We also believe that NP should address the impact of the project on wetlands beyond the ROW.

In 2006 the wetlands in the town were mapped by Watershed To Wildlife, INC. One of the goals of this project was to provide to the town the background for the adoption of local ordinances and designation of Prime Wetlands. The town has not completed that part of this project at this time. There were six wetland complexes that were identified that would meet the qualifications for Prime Wetlands. Three of the six would be impacted by the NP project. The NP project enters the town at the Stark line in the Gun Club Wetland Complex (#4). This wetland is 296 acres in size within the town and also extends into the town of Stark. The ROW then crosses The Lost Nation Wetland Complex(#5) that is 176 acres in size. The third wetland that NP project crosses is the Page Hill Complex(#1). This wetland is the largest in the town at 1036 acres. It connects to an 1800 acre wetland in Lancaster that the NP project also crosses. This wetland could be one the largest upland wetlands in NH at 2836 acres. This is an extremely diverse wetland and should be considered an important natural resource for the town. In summary the NP project is crossing three wetlands that total over 1500 acres in the Town of Northumberland.

The existing transmission line was built a long time ago before we understood the importance of wetland to the ecology of the region. We would doubt if a transmission line could get permitted from scratch today that impacted that much wetland.

Secondly the impact of this project on the aesthetics of our town is unacceptable. It will cross both Lost Nation Rd. and Page Hill Rd. This town and the North Country has changed and our survival now depends on tourism. The town has endorsed the Ride the Wilds project and have opened both Page Hill and Lost Nation Roads to ATV's. Lost Nation Rd. is one of the most scenic in the state. If this project is allowed to proceed it is noted that some of the tallest towers (130 feet) are planned for the crossing of Lost Nation Rd.

For these reasons we do not support this project as proposed and if it get built should be buried in State Owned ROW,s. We support the SPNHF position that the entire project be buried.

Very Truly Yours,

Ed Mellett, Chairman

Northumberland Conservation Committee

CC: Northumberland Selectmen

Ms. Jane Difley, President SPNHF

Ms. Tracie Sales, NHDES Interim River Management Coordinator

Mr. Nick Coates, NHAOCC

NCC

Town of Lancaster Selectmen

**State of New Hampshire
Town of Northumberland
2011 Results of Town Meeting**

At 9:00 AM on 3/8/2011 Moderator Barry Colebank announced:

“To the inhabitants of the Town of Northumberland, Coos County and State of New Hampshire, qualified to vote in Town affairs:

You are hereby notified to meet at the Northumberland Town Office, Selectmen's Meeting Room, 10 Station Square on the second Tuesday in March next, March 8, 2011, to act upon the subjects hereinafter mentioned. You are hereby warned that on said date and at said place the polls will be opened at **9:00** in the forenoon and will remain open until **5:00** in the evening for the reception of your ballots under the Non-Partisan Ballot System. You are also hereby warned that on said date and at the Groveton High School Ryan's Auditorium in said Town, at **7:00** in the evening, the matter of appropriations and such other business properly coming before said meeting will be taken up for your consideration and action.”

The Annual Town Election for the Town of Northumberland and the Northumberland School District was opened at 9:00 AM Tuesday, March 8, 2011 to act upon the subjects hereinafter mentioned. The polls were declared open for the reception of ballots. Moderator Colebank announced that the absentee ballots would be opened at 1:00 PM. At 5:00 Moderator Colebank announced that the polls were closed.

Moderator Colebank opened the business meeting at 7:00 PM with the local Boy Scout Pack 233 leading residents with the Pledge of Allegiance. Moderator Colebank introduced the head table of Town Officials and the Supervisors of the Checklist and went over his rules of the meeting.

The results of the ballot vote and Town Meeting are as follows:

**Election day ballots-264
Absentee ballots- 61
Total Ballots cast- 325**

*Articles 1-2 were printed on official ballot.

***Article 1:** To choose by ballot the following Town Officers for the ensuing three years: one Selectman, Town Clerk/ Tax Collector, Town Treasurer, two Budget Committee, one Library Trustee, one Trustee of Trust Funds and one Cemetery Trustee.

Results:
Selectman-Michael Phillips (237)

Town Clerk/Tax Collector-Melinda Kennett (293)
Town Treasurer: Melody Barney (293)
Budget Committee-
Tracey Morrill (253) and Write in James Tierney
Library Trustee-Madeline Hart (283)
Trustee of Trust Funds-Deborah Weeks (270)
Cemetery Trustee-Terri Charron (289)

***Article 2: To** choose by ballot the following Town Officers for the ensuing two years: one Trustee of Trust Funds and two Budget Committee.

Results:

Trustee of Trust Funds-Kimberly DeBlois (293)
Budget Committee-Debra Lakin (203) and Uldric Bernard (199)

Article 3: To see if the Town will vote to raise and appropriate the sum of \$ 184,900 dollars to purchase the current Town Office Building located at 10 Station Square in Northumberland and to authorize the issuance of not more than \$122,500 dollars of bonds or notes in accordance with the provisions of the Municipal Finance Act (RSA 33), and to authorize the Board of Selectmen to issue and negotiate the terms of such bonds or notes and to determine the rate of interest thereon. The remaining \$62,400 dollars will come in the form of a \$50,000 grant from Rural Development, \$10,000 dollars from the Municipal Office Fund and \$2,400 from monthly rent payments. If the grant is not received, the money will not be raised and appropriated. (2/3 Ballot vote required) (Recommended by the Selectmen 2-1)
(Not Recommended by the Budget Committee 6-1)

Motion made by James Tierney and seconded by Mario Audit to accept article as read.

Discussion: Al Beland asked if the Selectmen had a building inspector come to the building yet. Jim Tierney responded that Terrance Bedell was our building inspector and that he had come to the building. Terrance Bedell added that during the construction stages he had been over and looked over the work that was done. Al Beland said that he noticed that the chimney looked like it was ready to come down and added that he thought it was an issue. Terrance Bedell answered that the State Fire Marshal office came and the chimney issue was cosmetic and added that inside of the chimney was fine. Mark Robinson asked if there was a fire system or sprinkler system inside the current building. Terrance Bedell answered that the square footage of the building didn't require it. John Robbins asked why we would want this building and added that the police department should go into the meeting room. Mr. Robbins said that the current building wasn't efficiency based. James Tierney said that Groveton Acquisitions is going to donate the land where the Eagle Hotel used to sit. He added that the paperwork is being drawn up by the attorney giving the town the piece of property. Mr. Tierney said that the school board off the modular classroom and

that would be moved to the land given to us. He added that the police department would be moved into that. Mr. Tierney said that the town would own the land and the buildings and that everything would be right there together and would be paying only a mortgage on the Town Hall building. Addison Hall said that the town had already invested \$27,000 into the building so the price of buying it would be \$209,000. James Tierney answered that it was the same as any other business for repairs and such. He added that the owners of the building say "thank you very much" and said that if we moved we would lose the investment already put into the building. Mr. Tierney said what we spend we won't get back. Norman Cotter asked if the town could get the land behind town hall and also asked if the town ever considered a new building and he added that he thought that it made more sense to looking into building new. James Tierney answered that the building was built in 1930 and added that the building committee looked at new construction and recommended buying the current building at this time. Mr. Tierney also added that the town could buy the building and sell it at a later date to build new as an option. Tierney said that it would be the same with the piece of property that is going to be given to us. Tierney said that there would be no increase in what we are paying for rent right now. Sally Pelletier asked who was approached in the school board because she didn't recall it being approached at any meeting. James Tierney answered that this offer had come from the school board to the building committee. Paul Bouchard asked what the time frame was for all of this to be done. James Tierney answered that the rent was month to month and the modular was going to be free after June. Deborah Weeks said that Dave Peel wrote her personally that the school board would be done with the modular this summer and would like to set it up with the selectmen to turn it over to the town. Uldric Bernard said that the price of \$182,000 for the building and then maybe spending \$10,000 to put the modular into the empty lot and probably would need some maintenance as well and then the chimney on the current building, the leaks in the bathroom were all a bunch of band aides. Mr. Bernard added that the town would be further ahead with building a new building. Karen Grant asked why the town was considering purchasing the building for a higher price than the assessment. James Tierney said that the price was higher than the assessment and that was the owners asking price. Ron Caron asked if the building committee was aware of the free land and if they had gone to the Mayhew building. Alan Rossetto answered that the building committee came to this conclusion to purchase the town complex where it is now because the Mayhew building, Groveton Paper Board office and others talked about were inadequate without any parking or extra land. He added that with the gift of the land the building that we are currently in was very adequate. He said that building a new building for about \$200 per square foot that met the requirements was too much. Mr. Rossetto said that the building that the town is currently in has an appraised value of \$155,000-\$160,000 and that's what the building committee suggested to put in for an offer and that was without knowing about the land as part of the equation to make it all work. He added that this was for a municipal building and he wanted to see it all work. Amanda King added that if this doesn't work what happens to the money that we spent? Alan Rossetto said that he wanted to negotiate that off of the price and it was

reasonable to ask the current owners to do that. Tracey Morrill asked if the money was in the budget to move the modular. Marcel Platt told him that it was not. Kathy Wiles asked what moving the modular to the new location would save. James Tierney said that if we bought the building it would save \$1200 for rent from the town and \$500 for rent of the police station. Kathy asked if the total was \$1700 which James Tierney confirmed was correct. James Tierney said that the payment would be less than \$1700 for the new building as the loans are roughly 4% for 10 years at #1225-\$1250 or 12 years for about \$1200. He added that what we are paying now could be paying a mortgage and that the town could own the building in 10-12 years. Barbara Wheelock said that there were too many "ifs" and what if the modular were not up to code and also wondered why we offered more than the assessment of the current building. Arnold Tilton added that we would still have operational costs. James Tierney answered that we pay for all of that now. Dave Auger said that he supported this article but that the modular were still being used and he had no answer yet on them. Carl Coulombe asked what the age of the building was and how much heat was costing. James Tierney ran the math and said about \$600 per month. Nancy Merrow asked if there was a lien on the Groveton Paper Board office building and stated that it was a viable building that we could also look into using. James Tierney said that in 2012 we could take that building for the Tax Collectors deed for non payment of taxes but they had declared bankruptcy so we can't touch it. He added that bankruptcy would have to release it before we could take it and it was the judges call. Alan Rossetto answered that the committee went and looked at the paper board office and it would need a small addition to meet the needs of the town and that the money that was already put in the current building and with some grants thought the current building was the best place. He added that he thought the modular was available until tonight's revelation that it wasn't which puts a monkey wrench into the plans because he was under the impression that it would happen. Mark Robinson asked about any negotiations and said that this building was way over priced. He added that it needed to be reassessed and bet that the building was only worth \$50-\$60,000 and we keep putting money into it. He suggested that we did not purchase this building. Ron Caron said that the budget committee approved this warrant if they were sure that they got both lots. He added that the town pays the taxes now so if we were to build our own new building the owners would have to pay taxes if we moved out. James Tierney said the building committee recommended the building plus 1 lot, the old Eagle Hotel lot. He added that the L shaped one the selectmen brought up but Groveton Acquisitions wasn't willing to give that away at this time. John Robbins said that the mill was only assessed at \$1.3 million so the current building we are in must only be worth \$30,000-\$40,000. Rae Hurlbutt said that deciding on this would be premature. She added that she felt the building committee and the select board needed to do their homework and it made sense to wait. Addison Hall said that the ambulance office was upstairs and thought it needed to be handicapped accessible. He also stated that we are paying \$1500 a month because we also pay the taxes on the current building. James Tierney said that the downstairs is handicapped accessible and no one was allowed upstairs. He said that if someone comes in they call up and the ambulance personnel comes downstairs. Beverly

McFarland asked that if all state buildings had to be handicapped accessible. Barry Colebank responded that the ground floor was handicapped accessible. James Tierney added that no handicapped person was being denied services which is exactly what the law states. Kathy Wiles made a motion to move the question. Richard Cotter seconded it. No further discussion.

This is a 1 hr secret ballot vote. (7:50-8:50)

Ballot vote: Yes 23 No 166 Article 3 failed.

Article 4: To see if the Town will vote to raise and appropriate the sum of \$ 444,744 dollars for the purpose of operating and maintaining the water department. Said funds to be offset by the water user fees. Any shortfalls in the water user fees will be made up from the accumulated surplus in the "regular water account". (Recommended by the Selectmen 3-0) (Recommended by the Budget Committee 7-0)

Motion made by Mario Audit and seconded by James Tierney to accept article as read.

Discussion: Ron Caron asked if the general fund or sewer owes money to the water department. He also asked which quarter for 2011 we could expect an increase in the water/sewer bill. James Tierney answered that as of yesterday the sewer owed the general fund and also owes water. Mr. Tierney added that there would be a rate hike for about 3 years. Tierney gave some rates and said that the selectmen could lower the sewer rate in 3 years or keep the rate flat to get the surplus built up again. Ron Caron asked if it would be 3 years before we saw a savings and James Tierney confirmed that. Ron Caron said that he wanted to hear from Mario Audit and Rob Gauthier of the increase and when. Rob Gauthier answered that the water would not be increased and that they would discuss the sewer rate. No further discussion.

Voice vote. Article 4 passed as read.

Article 5: To see if the Town will vote to raise and appropriate the sum of \$ 308,670 dollars for the purpose of operating and maintaining the sewer department. Said funds to be offset by the sewer user fees. Any shortfalls in the sewer user fees will be made up from the accumulated surplus in the "regular sewer account". (Recommended by the Selectmen 3-0) (Recommended by the Budget Committee 7-0)

Motion made by Mario Audit and seconded by James Tierney to accept article as read.

Discussion: Ron Caron said that he was hoping someone else would talk but never the less he wanted to ask about an increase. Rob Gauthier answered that he wasn't sure which quarter would reflect the increase but they were talking

about a 50 cent per thousand gallon increase. Uldric Bernard said that the sewer department owed the water department and wanted to know when it would be paid back. James Tierney stated that right now we are currently billing out \$195,000 per year and said that the town pays \$70,000 for the street drainage. He said that the town brings in septage hollage fees and fees from the swimming pool. He added that the 50 cent increase didn't include paying back the water department and that it would take a substantial increase or a big sewer user coming into town to do that. Ron Caron said that it stated in the town report that the town pays \$60,000 for the run off to the lagoons and now it was proposed for \$70,000. He asked that percentage of ground water goes into the drains. He added that on page 108 of the town report quarter 4 had not been billed or collected and not included in the town report unpaid. James Tierney answered that the percentage of storm water was about 55-60% and that the town as a whole was not paying to what is actually run off. He added that it wasn't as polluted as what comes from home. Ron Caron added that he wouldn't drink it. James Tierney said that on page 104 of the town report are from how they were balanced. He said that the reason they are not showing is because the quarter 4 was not billed yet. James said that he had the actual numbers as of yesterday. Ron Caron stated that another quarter needed to be listed in there to balance. John Robbin said that we should use a quarter from the year before. James Tierney said the page wasn't there before. He added that quarter 4 went into bookkeeping for 2010 but the money hadn't been collected yet. Robbins added that it could be estimated. James Tierney said he wanted to put the right year and right numbers in there. Barry Colebank said that the fourth quarter billing for 2009 was billed in 2010 and that it does go into the bookkeeping for 2009 and it took him a bit to understand it too, but that he did. Richard Cotter made a motion to move the question which was seconded by Harry Lee Rice, Jr. There were more questions so Moderator Colebank couldn't recognize the motion. Mark Robinson asked why the sewer owes the water department. James Tierney said that it was when we cleaned the lagoons last time. He added that the water department paid for it because the sewer department needed to borrow it. Mark Robinson stated that he thought we would never get that caught up. James Tierney said that Mark was correct and the rate would have to be significantly higher to pay it back. Theresa Brooks asked why the water was still the same way in the town book. Richard Cotter made a motion to move the question and that was seconded by Harry Lee Rice, Jr. No further discussion.

Voice vote. Article 5 passed as read.

Article 6: To see if the Town will vote to raise and appropriate the sum of \$ 1,823,819 dollars which represents the operating budget of the Town, said sum exclusive of special or individual articles addressed. (Recommended by the Selectmen 3-0) (Recommended by the Budget Committee 6-1)

Motion made by Mario Audit and seconded by James Tierney to accept article as read.

Discussion: Nancy Merrow asked about the status of the TAN notes as far as where we are now and what the prediction is going to be over the next 2-3 months. James Tierney answered that the town has used 200,000 as of today there was \$128,000 in the checkbook. He added that also that as of today's bills, wages, AP and the payment to the school it added up to \$213,000 and with only \$128,000 in the checkbook there was a \$85,000 shortage.

Mark Robinson made a motion to amend the article to change the dollar amount to \$1,700,819.00 and was seconded by Edmund Robinson. Uldric Bernard said that in 2005 the unpaid balance in the town report people were behind \$297,000 and 5 years later it is \$769,403 which reflects people having a difficult time.

Uldric added that he supported the cut as it was a modest cut. Terrance Bedell said that there were already 10 people looking at the budget now. James Tierney answered that the total unpaid was \$735,316.78 of that it was water, sewer, taxes, back taxes, land use change, timber tax. James added that it were also some from 2008 and 2009 unpaid. Paula Colebank asked what would get paid and what wouldn't get paid with a reduced budget amount. James Tierney said that the Selectmen would talk about it and hadn't decided yet. He added that the select board would have to come up with what wouldn't get paid. Amanda King said that Jim was the leader and wanted to know what the other 2 selectmen said about this. Robert Gauthier said that he didn't know where to cut that amount of \$123,000. He added that Jim had taken on that roll and he was hoping to work on that with Becky. Deborah Weeks asked where Mark came up with the \$123,000 cut. Mark Robinson said that there were too many guys on the crew that we do not need and too many people not paying their taxes. He added that it was a modest cut. Sam Oakes asked what the proposed budget would be calculated at for a tax impact. James Tierney answered that the 2010 assessed evaluation and \$123,000 cut would be about 93 cents cut. He added that the granted abatement list had already been cut by \$85,000 and 20 more abatement requests left. He said that if they were granted it would go into the following year. He also said that the town's tax rate is all of the meetings. Dave Auger said that he wanted to hear from the budget committee chair about the numbers approved. Alan Rossetto said that all that we are faced with this year and with demand increasing because the age is increasing. He added that the budget committee tried to hold the line and maintain the services to the town. Rossetto said that he wanted everyone to be aware that the taxes were going up we needed to set a common ground to maintain the services at a lowest cost that we could produce. Rossetto added that there was no 25 cent raise due to the economic situation. He said that the real issue was talking to people and working together to make the budgets as low as we could get them. Rossetto said that he has been watching the news and we are losing 25% that the state kicks in. He said that the employees would be paying more and that he wanted to work with all the employees all over town. Rossetto said that the budget committee worked on a middle level budget and didn't want to destroy what the town already has. He added that if we cut the budget we cut the services, where the rubber hits the road. Wade White said that he was all for cutting the budget but asked if fuel costs were figured in on the new budget. Alan Rossetto answered that they had considered it but added that he didn't know where the fuel prices were going.

John Robbins said that he couldn't understand why we are a town that was big on overtime. He added that Stark was a small town that cut their budget by \$200,000. Ron Caron asked what the select board is doing to increase revenues. He asked about the dump disposal collected. Mario Audit said that right now they were looking as a "pay as you throw". Ron Caron asked Mario about asked about the open top fees and Mario Audit answered that there would be fees. Brian Bresnahan asked if we cut services for a lower cost would it hurt attracting new business's to town. Alan Rossetto said that the budget was the selectmen dollar and they can spend it however. He added that if we cut the \$123,000 out of the budget that we would see a reduction in services and that would impact getting business's here. He added that they looked at everything including cutting the budget and only doing 2 water billings a year and they did their best to hold the line. Brian Bresnahan asked if he believed that if we cut the budget would it affect the ability new businesses into town and the economic development. Kathy Wiles asked why the tax impact wasn't in the town report. Barry Colebank answered her that the DRA doesn't recommend that it be done anymore because we cannot make an accurate prediction. Nancy Merrow asked how we could keep spending what we do not have. Moderator read the amendment to cut the budget. No further discussion.

Hand held card vote. 68 yes 86 no. Amendment to Article 6 failed.

Article 6 as written was put back on the floor.

Voice vote. Hand held card vote due to voice vote being too close. Article 6 passed as originally read.

Article 7: Vote yes to disband the Budget Committee and allow the elected school board members and the elected selectmen to oversee their respective budgets. (Inserted by petition of voters) (Ballot vote required RSA 32: 14, III)

Motion made by Harry Lee Rice, Jr. and seconded by Richard Paradis to accept article as read.

Discussion: Tonya Cloutier said that we elected our selectmen and had our department heads to run our budgets. She added that everyone decided they needed a budget committee to babysit and what she was seeing tonight that even the babysitting didn't make anyone happy. Mrs. Cloutier said that all year there were meetings and the people were still not happy so we may as well get rid of them. Mark Robinson said that having the budget committee didn't cost the town anything. Terrance Bedell said it cost him time with his family if you have to go to the meetings. Michael Phillips said that he was on the budget committee and said that he admires the department heads for what they went through and how it all works. He added that the budget committee has a process of looking at the whole picture of the town, school, and precinct budgets. Mr. Phillips added that citizen involvement would be a good thing. Mike Cloutier asked what the attendance was and wondered if people show up. James Tierney said that 1/2

dozen to 9 people are all that show up. Samantha Canton that we already have a system in place and we didn't need to reinvent the wheel. She added that the budget committee made no difference and that our board members were also tax payers. Mrs. Canton said that this was a waste of time. Harry Lee Rice Jr. said that he was involved in town politics for a number of years. Mr. Rice said the budget committee wasn't a bad thing in theory but that taking a number out of hat with no rhyme or reason divides the town being them against us. Tracey Morrill said that there was a lot of money cut that if the budget committee hadn't suggested it that the department heads wouldn't have cut. Dave Hurlbutt said that it all depended on who was being effected or not. Mike Cloutier said that he didn't need any guidance because the precinct and every other department would cut if they could. He added that he was elected and he did answer to the people. Craig Hersom made a motion to move the question. Harry Lee Rice Jr. seconded it. No further discussion. Polls were open from 9:10-10:10

Ballot vote. Yes 87 No 103. Article 7 failed.

Article 8: To see if the Town will vote to raise and appropriate the sum of \$ 37,832 dollars, to fund the following charitable organizations at the amounts shown:

Senior Meals	\$13,000
Home Health & Hospice	\$12,759
Caleb Interfaith Volunteer Caregivers	\$ 1,650
Northern Human Services	\$ 3,100
Tri-County Community Action	\$ 4,145
American Red Cross	\$ 1,108
North Country Elder Programs	\$ 1,970
Lancaster Comm. Cupboard & Kitchen Table	\$ 100

(Recommended by the Selectmen 3-0) (Recommended by the Budget Committee 6-1)

Motion made by Mario Audit and seconded by James Tierney to accept article as read.

Discussion: Nancy Merrow said that she had a question on the charitable organizations. She wanted to know their criteria. She added that if they are approved we don't really know who is being serviced. Mrs. Merrow asked that someone from each organization represent themselves and tell her how much is spent in Northumberland. Mrs. Merrow said that if no one was there to support or represent it that we should cut it. Deb Montgomery coordinator for Senior meals and they only asked for \$13,000 which is \$1000 less than in 2010. She said that 5000 meals were served this past year and that it was the only program in Groveton for Seniors. She said that they paid directly for the gas used at Carter Hall to cook and for the food out of this money. The Caleb director said that they served 36 Groveton seniors for transportation. She added that it was mostly volunteer. She said that in 2010 they donated 305 hours, 4607 miles, 333 trips and 1/2 ton of pet food worth about \$2000. Northern Human services

representative Kathy Shannon said that there was a letter in the town report on page 127 from the agency. She added that they serviced 103 residents and 1919 hours of service. Judith Szurley spoke for Tri County CAP (Amy) and said that the \$4145 was for administrative costs to continue to run their office for fuel assistance. She added that in 2010 they serviced 386 residents from Northumberland. She added \$100,300 was spent for the free programs and 2100 meals to the residents. American Red Cross was represented by Robert Gauthier. He said that the Red Cross was a good resource we can tap for emergency management. John Normand said that he gets the meals delivered out of Whitefield which are served 3 days a week and cost only about 15 cents a meal. He added that he had 34 clients for 7 days a week. James Tierney said that a letter from the Lancaster people stated that there were 262 Groveton families serviced and asked for \$100 that's why it's in the warrant. Nancy Merrow asked Deb Montgomery about the propane. She said that she thought the propane was paid for by the Groveton Foundation. Becky Craggy said that the town paid for the propane. Nancy Merrow asked what the \$3.00 fee for citizens was for. Deb Montgomery said that it used to be free but 7 years they implanted a fee. She added that they used to accept donations but it wasn't enough to pay the cooks. Mrs. Montgomery said that they spend \$11,350 on their cooks, her salary and gas and paid for some of the food with about \$40 left over. Alan Holmes said that Red Cross helped him out once and then gave him a bill. Paul Bouchard said that when he burned out and the Red Cross was there for him. Mario Audit said that the Home Health Hospice was a great program and that many residents receive benefits and it's a good program. Norman Cotter added that the Home Health was a great program. Kathy Frechette said that the Home Health also runs a grief counseling group that costs nothing. Dan Becker stated that he thought we were getting pretty good services for our buck due to the cost of fuel and such it was money well spent. Brian Bresnahan said that with the economy we should be supporting all of them. Uldric Bernard said that he would like to see accounting for the money that we give and he would vote it in. Harry Lee Rice Jr said that perhaps next year in the town report we could get numbers. No further discussion.

Voice vote. Article 8 passed as read.

Article 9: To see if the Town will vote to raise and appropriate the sum of \$2,500 dollars for the Groveton Cal Ripken Baseball program, to be used to cover accident and liability insurance, tournaments and registration fees. (Inserted by petition of voters) (Recommended by the Selectmen 3-0) (Recommended by the Budget Committee 4-3)

Motion made by Harry Lee Rice, Jr. and seconded by Richard Paradis to accept article as read.

Discussion: Mark Robinson asked if this was part of the summer rec program for away games and such. Samantha Canton answered that it was completely separate. She added that it serviced kids 4-12 years of age to play baseball. She

added that last year there was about 110 kids that participated and it helps to offset their costs. Mark Robinson asked if all the kids were from this town. No further discussion.

Voice vote. Article 9 passed as read.

Article 10: To request that the Town vote to raise and appropriate the sum of \$ 1,500 dollars for the purpose of supporting the Groveton High School Chem.- Free Graduation Fund, these funds to be used to promote and support alcohol-free and drug-free youth, by sponsoring a chemical-free graduation celebration. (Inserted by petition of voters)(Recommended by the Selectmen 3-0)
(Recommended by the Budget Committee 4-3)

Motion made by Louise Collins and seconded by Deborah Weeks to accept article as read.

Discussion: Louise Collins, the President, said that she had a sheet with a breakdown of the costs and explained to the crowd about the chem. Free party. She said that the kids had been doing fund raisers since the fall. She added that they needed to raise \$9315 and that each senior gets a gift. Uldric Bernard asked what they did with the rest of the money after the bills were paid. Louise Collins said that they are at \$5200 and they are asking the town for \$1500. Uldic Bernard asked when they reached their goal what did they do with the rest of the money. Louise Collins answered that they left the rest for the next up and coming class and would like to leave \$500. Kathy Wiles said that she guaranteed that the seniors got the money and that she chaperoned it and it was great. She added that the money goes to entertainment for the kids benefit. No further discussion.

Voice vote. Article 10 passed as read.

Article 11: To see if the Town of Northumberland will vote to raise and appropriate the sum of \$2,500 (Twenty-five hundred dollars) to support North Country Transit's Senior Transportation. (Inserted by petition of voters)
(Recommended by the Selectmen 3-0)
(Recommended by the Budget Committee 7-0)

Motion made by John Normand and seconded by Paul Bouchard to accept article as read.

Discussion: John Normand said that anyone can ride and it wasn't only for seniors. He added that for over 60 it was asked that a donation be made and that it was in Groveton 3-4 days a week and about 3 times per day even in Lost Nation, Stratford, Stratford Hollow even considering the cost of fuel. No further discussion.

Voice vote. Article 11 passed as read.

Article 12: To see if the Town will vote to raise and appropriate the sum of \$2,500 dollars for the Groveton Community Christmas Organization. (Recommended by the Selectmen 3-0) (Recommended by the Budget Committee 4-2-1)

Motion made by Mario Audit and seconded James Tierney to accept article as read.

No discussion.

Voice vote. Article 12 passed as read.

Article 13: To see if the Town will vote to establish a Capital Reserve Fund for the purpose of conservation and conservation projects, to raise and appropriate \$191,606.55 dollars, with said funds to come from the town's forest maintenance/forestry funds. And furthermore, to name the Conservation Commission as agents to expend. (Recommended by the Selectmen 3-0) (Recommended by the Budget Committee 4-3)

Motion made by James Tierney and seconded by Mario Audit to accept article as read.

Motion made by Tracey Morrill to change the dollar amount to \$50,000 and seconded by Elizabeth Pearce. Motion to amend passed by voice vote.

No discussion.

Voice vote. Article 13 passed as amended.

Article 14: To see if the Town will vote to appropriate up to the sum of \$10,000 dollars from the Forest Maintenance Fund for the purpose of paying for the conservation/forestry portion of the Town operating budget. If Article 13 passes, this article will be passed over. (Recommended by the Selectmen 3-0) (Recommended by the Budget Committee 6-0-1)

Motion made by Jim Tierney to pass over Article 14 and seconded by Mario Audit.

Voice vote. Article 14 passed over.

Article 15: To see if the Town will vote to accept the provisions of RSA 41:11-a, which would allow the Board of Selectmen to manage town property, including the renting/leasing of said town property for a period of up to 5 years.

Motion made by James Tierney and seconded by Mario Audit to accept article as read.

Discussion: Ron Caron asked if there was a tax deed did the selectmen intend to rent if no one bid and become a land lord. James Tierney said that wasn't the intent of the article but wanted to keep options open. He added that it was a request from the conservation commission. Ron Caron said that the way this was worded it sounded it. James Tierney said that if the selectmen chose to they could but that they would be crazy too with the liability of it. Ron Caron said he would like to hear that from the other members of the select board. Mario Audit and Rob Gauthier both said that they didn't want to rent. No further discussion.

Voice vote. Article 15 passed as read.

Article 16: To see if the Town will vote to raise and appropriate the sum of \$ 95,000 dollars for sidewalk repair/replacement along Main Street, Church Street and State Street. These funds will come from a grant already applied for, and no funds will come from taxes. If the grant is not received, the money will not be raised and appropriated. (Recommended by the Selectmen 3-0) (Recommended by the Budget Committee 7-0)

Motion made by James Tierney and seconded by Mario Audit to accept article as read.

Discussion: Tom Young asked if Preble Street could be done too. James Tierney answered that it was the Safe Routes program which is the main walking route to and from school. He added that if there was no money in the grant then we don't spend the money. Mark Robinson asked if it included labor and if it was local contractors. James Tierney answered that it would be a bid out. No further discussion.

Voice vote. Article 16 passed as read.

Article 17: To see if the Town will vote to enter into a lease/purchase contract for the purchase and outfitting of a new ambulance. The contract is for 10 years. The approximate cost of the ambulance is \$192,852. The contract contains an "escape clause". The cost of the contract is as follows:

2012	\$23,742
2013	\$23,742
2014	\$23,742
2015	\$23,742
2016	\$23,742
2017	\$23,742
2018	\$23,742
2019	\$23,742
2020	\$23,742
2021	\$23,742

(Recommended by the Selectmen 3-0) (Not Recommended by the Budget Committee 4-1-2)

Motion made by James Tierney and seconded by Mario Audit to accept article as read.

Discussion: Uldric Bernard said that this was too much money and being on the budget committee he voted against it. Sandy Mason said that she put it in for 10 years but we can pay it off sooner if they make more. She added that \$23,742 comes from the revenues above and beyond the budget. Sandy said that \$11,000 is in maintenance right now. Tracey Morrill asked what the “escape clause” meant. James Tierney said that the first year payment was already in and that the escape clause was meant so that the lending organization will take it back with no ill will. Tracey Morrill asked how they take it out of their budget. James Tierney said that to take it back it would zero out the budget. Ron Caron asked if this was a purchase or a lease. James Tierney said that it was a purchase and the amount of interest for 10 years was \$42,000. Ron Caron asked how much would the purchase be without the escape clause. James Tierney said that we went to this bank to finance it and it would take a 2/3 majority to do it. Sandy Mason said that they would be shopping for cheaper and looking at demos. John Robbin asked if the deposits made were \$260,000. Rae Davenport said that she doesn’t like the escape clause because she isn’t going to let the town go without an ambulance service budget. James Tierney said the good thing about this is that they would take it back and we would owe nothing. Al Rossetto said that there was no question that they need another vehicle but they don’t need new and would like to change that in the warrant article.

Motion made by Alan Rossetto to amend the article to take out the word “new” and seconded by Michael Phillips. Voice vote. Amendment accepted.

Discussion: Amanda King asked if the ambulance was self sustaining. Denise Normand asked how much of the budget pays for the Weeks paramedic. Sandy Mason responded that we pay nothing. Uldric Bernard asked what the intent was. Barry Colebank answered that the intent wasn’t changed. James Tierney said that the escape clause needs to be in the article. Wade White wondered why we wanted to buy a used one and beat ourselves to death. James Tierney said that perhaps it would be a demo which are all over the country. James added that those would be sold like a used one but it is really a new vehicle. Roger Chauvette asked what the tax impact would be. James Tierney said it would be zero out because the ambulance supports itself and it’s above the total revenue. Roger Chauvette wondered what the overall budget increase would be. James Tierney said it had no tax impact. Roger Chauvette asked that it wouldn’t increase. James Tierney said the 1st payment is already sitting in the trust fund. James added that the money for years after will be generated from excess. Roger Chauvette added that we wouldn’t know if we would have any excess 5 years from now. James Tierney said that to get rid of it we would totally eliminate the ambulance budget. Roger Chauvette asked if it was in our budget then why are we voting on an escape clause. Chauvette added that if we turn it in we would lose the equity and have nothing to show for it. Sandy Mason said that if they didn’t have the call volume to make the payment they would watch the money

very well. Roger Chauvette said that he was a paramedic in Lancaster and said that medicare was getting harder and doesn't want the town funding this. Barry Colebank asked if Al and Mike wanted to withdraw the amendment. Al Rossetto and Michael Phillips withdrew their amendment and then redid it properly. Tracey Morrill asked how much the ambulance brought in on average. Sandy Mason answered that she brought in \$58,000 in 2009. Roger Chauvette said that this wasn't a good set up. James Tierney said that they brought in \$27,000 in 2010. Kathy Frechette said that it could be less each year if we bought one cheaper. No further discussion.

Voice vote. Article 17 passed as amended.

Article 18: To see if the Town will vote to appropriate the sum of \$25,583 dollars to be placed into the Ambulance Capital Reserve Fund, previously established. This sum to come from fund balance (surplus) revenues collected by the Groveton Emergency Medical Services during the 2010 fiscal year. (Recommended by the Selectmen 3-0) (Recommended by the Budget Committee 7-0)

Motion made by Mario Audit and seconded by James Tierney to accept article as read.

Motion made by Sandra Mason to change the dollar amount to \$27,995 and seconded by Terrance Bedell. Voice vote. Amendment accepted.

Discussion: Sandy Mason said that the reason for the amendment is because medicare made a direct deposit into the checking account that wasn't considered in the original article. Voice vote. Amendment accepted. No further discussion.

Voice vote. Article 18 passed as amended.

Article 19: To see if the Town will vote to raise and appropriate the sum of \$20,000 dollars to be placed in the Road Construction Maintenance Capital Reserve Fund, previously established. (Recommended by the Selectmen 3-0) (Not Recommended by the Budget Committee 3-3-1)

Motion made by James Tierney and seconded by Mario Audit to accept article as read.

No discussion.

Voice vote. Article 19 passed at read.

Article 20: To see if the Town will vote to raise and appropriate the sum of \$25,000 dollars to be placed in the Highway Equipment Capital Reserve Fund, previously established. (Recommended by the Selectmen 3-0) (Recommended by the Budget Committee 5-0-2)

Motion made by Robert Gauthier and seconded by Mario Audit to accept article as read.

No discussion.

Voice vote. Article 20 passed as read.

Article 21: To see if the Town will vote to raise and appropriate the sum of \$15,000 dollars to be placed in the Police Cruiser Expendable Trust Fund, previously established. (Recommended by the Selectmen 3-0) (Recommended by the Budget Committee 6-0-1)

Motion made by Robert Gauthier and seconded by Mario Audit to accept article as read.

No discussion.

Voice vote. Article 21 passed as read.

Article 22: To see if the Town will vote to raise and appropriate the sum of \$6,800 dollars for the purchase of 4 digital radios to be placed into town vehicles. These funds will come from a 50/50 EMPG grant already applied for, in the amount of \$3,400 dollars, \$700 dollars from soft match and \$2,700 dollars from taxes. If the grant is not received, the money will not be raised and appropriated. (Recommended by the Selectmen 2-0-1) (Recommended by the Budget Committee 7-0)

Motion made by Mario Audit and seconded by Alan Rossetto to accept article as read.

Discussion: Barbara Weagle asked what this meant. Robert Gauthier said that this was replacing the radios to comply. This was for 4 to start and in total we need 8. John Robbin asked what vehicles they were going to be put in and if they were also gonna have GPS. Robert Gauthier said said that they hadn't identified the replacement places yet and not having GPS. No further discussion.

Voice vote. Article 22 passed as read.

Article 23: To see if the Town will vote to establish an Expendable Trust Fund (ETF) under the provisions of RSA 31:19-a for the purpose of sludge removal from the town lagoons. Additionally, to raise and appropriate the sum of \$10,000 dollars to be placed into the aforementioned ETF. Furthermore to name the Board of Selectmen as agents to expend. (Recommended by the Selectmen 3-0) (Recommended by the Budget Committee 6-0-1)

Motion made by James Tierney and seconded by Mario Audit to accept article as

read.

Discussion: Ron Caron asked why this was being funded through taxation. James Tierney said that the town is not paying their fare share and that this was a start. No further discussion.

Voice vote. Article 23 passed as read.

Article 24: To see if the Town will vote to establish a Capital Reserve Fund under the provisions of RSA 35:1 for the purpose of the purchase of pumps for the town water system. Additionally, to raise and appropriate the sum of \$5,000 dollars to be placed into the aforementioned CRF. Furthermore to name the Board of Selectmen as agents to expend. (Recommended by the Selectmen 3-0) (Recommended by the Budget Committee 5-2)

Motion made by James Tierney and seconded by Robert Gauthier to accept article as read.

Discussion: James Tierney said that the owner was the Town and the users pay for it. He added that the town needed to contribute to it because they own it. No further discussion.

Voice vote. Article 24 passed as read.

Article 25: To see if the Town will vote to raise and appropriate the sum of \$10,000 dollars to be placed into the Municipal Office Capital Reserve Fund, previously established. This article will be passed over if Article 3 passes. (Recommended by the Selectmen 3-0) (Not Recommended by the Budget Committee 4-2-1)

Motion made by James Tierney and seconded by Mario Audit to accept article as read.

Discussion: Norman Cotter asked what this was. James Tierney said that this started a year ago and we are just adding to it. Alan Holmes said that saving was a good move. No further discussion.

Voice vote. Article 25 passed as read.

Article 26: To see if the Town will vote to raise and appropriate the sum of \$2,917.50 to purchase 3 million dollars of liability insurance for the purpose of reinstalling the diving boards at the town pool. (Inserted by petition of voters) (Recommended by the Selectmen 2-1) (Not Recommended by the Budget Committee 5-1-1)

Motion made by Samantha Canton and seconded by Robert Gauthier to accept article as read.

Motion made by Robert Gauthier and seconded by Samantha Canton to amend Article 26 to the dollar amount of \$2917.00 and the last sentence being "Funds to come from fund raising, grant applications and the pool user fees". Voice vote. Amendment accepted.

Philip Pinette asked if the fund raisers would happen even if this didn't go through. Robert Gauthier said that they wanted to raise the money and that there was no tax impact. Rae Hurlbutt asked if this was successful would it pay for a new diving board. Samantha Canton said that we already had the diving board. Nancy Merrow said that if we didn't meet the criteria why would we be allowed to put the diving boards back in. Samantha Canton stated that there was some confusion and that the dimensions were not accurate. She added that by the time things were ironed out the season was over but that this information had been researched. Uldric Bernard asked if this was the same insurance as the town and if the numbers were the same. Robert Gauthier answered that it was a different company that would be willing to insure it. Ron Caron asked if this was comparable. Robert Gauthier answered that the town has a liability insurance of \$5,000,000 but the highest they'd go was \$3,000,000. Madeline Hart asked if the depth what it is suppose to be. Robert Gauthier answered that all of the dimensions were given to the insurance company. He added that if it were 2 feet deeper the current insurance company would have covered it. Madeline Hart asked who it was who is going to cover. Robert Gauthier said it was going to be Geo. M. Stevens. James Morse asked if this meant we were going to have 2 policies. James Tierney said that it was so that it covered just the diving board. No further discussion.

Voice vote. Article 26 passed as amended.

Article 27: To see if the Town will vote to register and disseminate to all concerned its objection, opposition and commitment to stop the construction of any portion of the 1200 Megawatt High Voltage Direct Current Transmission Line in the Town of Northumberland as presently proposed by Northeast Utilities, NStar and Hydro-Quebec since such a huge scar constructed and erected through and above the Town's treasured residential and scenic private properties will cause inestimable damage to the orderly economic development of the Town economy, and the health and well-being of its residents; or to take any other action relative thereto. (Inserted by petition of voters)

Motion made by Michael Phillips and seconded by Richard Paradis to accept article as read.

Discussion: Uldric Bernard said that he felt that the gas line company was asking for an abatement and that the Northern Pass would be doing the same thing. David Auger asked what is proposed for an increase to our tax base with this. James Tierney said that there were numbers out there of 2.5 million per line and with 4 miles in Northumberland it would be about \$10,000,000. George

Sansoucy sent an article that said the 4 miles should be about 20,000,000. Amanda King said that his company and all of the brochures are not telling that the values of our own land will be going down. She said that no one wants to stare at a tower and that it will not lower our rates. Mrs. King added that the jobs are only temporary and it would be a long term loss. Michael Phillips said that everyone needed to read the fine print. Mr. Phillips added that there was a disclaimer about the devaluation of your land. He added that we needed to say that we don't want this. Mark Robinson asked if the selectmen could appose this. James Tierney said that you can't tell the selectmen that they can or can't appose it. He added that you can appose it personally but you can't compel a board. Kevin Lakin asked if the selectmen had to represent the town. James Tierney said that the town meeting would vote to one way but if the selectmen don't support it they have the authority to say no. Robert Gauthier said that one selectman works for the company and that personally he was against it after Amanda King asked him which he was. John Normand wants to move the question. Barry Colebank said that this has to be put in the town records. Norman Cotter asked why this article was here anyways. Kathy Wiles said that the selectmen should be representing the whole town. Barry Colebank said that sometimes you cannot tell Concord what to do. No further discussion.

Voice vote. Article 27 passed as read.

Article 28: To see if the Town will vote to adopt the provisions of RSA 72:37, the exemption for the blind, in the amount of \$15,000 dollars.

Motion made by James Tierney and seconded by Mario Audit to accept article as read.

Voice vote. Article 28 passed as read.

Article 29: To see if the Town will vote to instruct the Selectmen to appoint all other officers as required by law.

Motion made by Robert Gauthier and seconded Mario Audit to accept article as read.

Voice vote. Article 29 passed as read.

Article 30: To hear reports of agents, auditors, committees or other officers heretofore chosen and pass any vote relating thereto.

Motion made by Robert Gauthier and seconded by James Tierney to accept article as read.

Voice vote. Article 30 passed as read.

Article 31: To transact any other business that may be legally brought before said meeting.

Motion made by Mario Audit and seconded by James Tierney to accept article as read.

Mario Audit presented Rebecca Craggy with the Employee of the Year award.

Discussion: Uldric Bernard told the selectmen that this meeting was public and that the decisions are the will of the people and if they selectmen couldn't stand behind them they should get out of it because it was wrong. Norman Cotter said that the town reports were not delivered and he had to pick his up at the dump last Saturday. James Tierney said that they reports were delivered for free before and all that we have to do is to have them available as of March 1st. He added that anyone wishing to volunteer to deliver could do that. Norman Cotter said that he didn't even know that they were available. Lisa Grimes said that the selectmen should contact the school to see if the kids might want to deliver them. John Roberge thanked James Tierney for his time as selectman. No further discussion.

Voice vote. Article 31 passed as read.

Motion to adjourn was made by James Tierney and seconded by Michael Phillips. Motion passed unanimously by voice vote.

Meeting adjourned at 11:08 PM by Moderator Barry Colebank on 3/8/2011.

School election results:

Moderator-Write in Barry Colebank

Clerk-Write in Kathy Wiles

School Treasurer-Write in Melody Barney

School Board, 3 yr-David Auger (206) and David Hurlbutt (176)

School Board, 1 yr-Nancy Merrow (180)

Respectfully submitted,

Melinda“Min” Marshall Kennett

Town Clerk

Town of Northumberland

