

NORTHERN PASS ADVISORY COMMITTEE (NPAC) REPORT OF FINDINGS & RECOMMENDATIONS

APPROVED BY NPAC: OCTOBER 3, 2011

SUBMITTED TO THE DEERFIELD BOARD OF SELECTMEN: OCTOBER 10, 2011

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INTRODUCTION

Background

The Northern Pass Transmission (NPT) proposal is this: to create a new connection between Hydro-Québec's hydroelectric resources and the New England "power pool" that supplies electricity to all customers in the region. The project involves a partnership between Hydro-Quebec and Connecticut-based Northeast Utilities, the parent company of Public Service of New Hampshire. (Northeast Utilities is also in the process of pursuing a merger with Massachusetts-based NStar.) Public Service of New Hampshire provides the rights of way (ROWS) needed for the project to be built.

The heart of this project is the construction of a direct current (DC) transmission line along the existing corridor owned by Public Service of New Hampshire. Much of this corridor has existing easements on it, although in some areas in the North Country a new right of way will need to be sought (40 miles between Groveton, NH and the Canadian border and a possible 8 mile section in the Concord area). Where the easements do exist, however, many will need to be widened in order for the new transmission towers to be built. This involves negotiating with property owners along the 180 miles of the proposed transmission route; the proposed route cuts through 31 New Hampshire communities.

At various points in the process, NPT and PSNH officials have stated their intent to cite *eminent domain* in order to gain the easements necessary; however, the argument as to whether eminent domain can be applied to a privately funded project, as opposed to a public infrastructure project, is currently being taken up in the New Hampshire Senate. The result of this debate—and the resulting legislation (e.g., HB 648)—will dictate how much of a voice property owners along the right of way will have in the process.

The project would also include the construction of a converter terminal in Franklin, NH to convert the electricity from direct current to alternating current (AC), as well as the construction of a new AC transmission line from the converter terminal to an existing substation in Deerfield, NH.

The NPT proposal is currently in the permitting stages and there are several steps to this process: the Presidential Permit (to cross the United States/Canadian Border) granted through the Department of Energy Permit, the NH Site Evaluation Committee's approval, and a Special Use Permit (through US Department of Agriculture) to cross through the White Mountain National Forest. At the writing of this report, the US Department of Energy was working on its Draft Environmental Impact Statement (EIS), a process that factors in scoping comments from the public and that has been delayed several times. This document is now expected to be complete in the Fall of 2012. Because of this, the project timeline has also been moved out with Year 1 operations now slated for 2015-16, pending approvals. See **[Project Timelines/Permitting Process](#)** at the end of this document for more detail.

Helpful Links/Resources

For more detailed information on the Northern Pass Transmission project, readers can access these websites:

www.northernpass.us

<http://responsibleenergyaction.com/>

<http://www.forestsociety.org/>

NPAC Mission/Members

In April 2011, a group of Deerfield citizens organized an informational session on the Northern Pass Transmission (NPT) Project, which was held at the Deerfield Community School. More than 100 people attended: Deerfield residents, elected officials, people from other affected communities, and the press.

At that time, there were a number of questions as to the impact of the project on the Town of Deerfield (as well as the State as a whole). Many questions were posed by property owners on the PSNH right of way, the proposed route for the transmission line, as well as others in town who expressed concern over property values, health and safety, and the effect on our overall “quality of life.” In response, the Deerfield Board of Selectmen formed an informational committee, asking residents who had an interest in the NPT project to volunteer.

On June 6, 2011, Erika Heilman and Erick Berglund presented a request to the BOS to view the informational committee as an “advisory committee.” This committee would work on behalf of the Select Board and the town to undertake a cost/benefit analysis of the project to determine if Deerfield would, on the whole, benefit from the project or if the costs would outweigh the benefits and the town would not benefit from NPT. Items to consider for the Cost/Benefit Analysis included:

Benefits: Local tax revenue gain for Deerfield

Costs: effects on property values (property tax revenue loss + loss of personal wealth), health and safety, viewsheds, quality of life considerations, etc.

The Northern Pass Advisory Committee (NPAC) was appointed by the Select Board in mid June and consists of the following volunteer members: Jeanne Menard, Steve Neily, Erick Berglund, Erika Heilman, Matthew Reed, Tom True, Kathy Shigo, Michael O’Neil and Nicole Ruderman. Erika Heilman is the chairperson for NPAC; the secretary is a rotating duty.

Each member came to the advisory committee with a particular reason for joining (see below). Regardless of initial position, each appointed member of NPAC pledged to consider the information presented to us on the project with an open mind and with an eye toward verifying facts and details as best we could at this stage of the project.

Matthew Reed joined the committee to represent JCR Construction’s land interest in Deerfield, which contains a significant portion of the current Northeast Utilities transmission right of way through Deerfield. For disclosure, Matthew Reed is an employee of JCR Construction who is a contractor for Northeast Utilities and conducts business with PSNH on a daily basis.

Tom True has been an active resident of Deerfield for 23 years and his house lies within 500’ of the proposed line. Tom has been a lifelong advocate of hydropower and is

mostly concerned about carbon footprint, views and taxes. He is a civil engineer, licensed in 6 states, and works for Coler & Colantonio, Inc, who is a consultant working on the Northern Pass Transmission Project. He is participating in this committee as a resident.

Stephen Neily is a property owner on Haynes Road in Deerfield and has lived here for over 10 years. A PSNH easement exists on his property and the Northern Pass project seeks to expand it in order to accommodate a proposed new 345kv transmission line. His family and home stand to be directly and negatively impacted by the Northern Pass transmission line. He joined the advisory committee as part of a comprehensive effort to advocate for his position as an affected landowner. His goal as a member of the committee is to maintain an open and direct line of communication as well as a continued exchange of information with the Deerfield Select Board.

Jeanne Menard, resident of 36 Mountain Road, managing member of the Menard Family Forest, which has an existing ROW on a conserved 233-acre parcel of woodland in Deerfield. Jeanne is owner/broker of the real estate company Parade Properties and is very concerned with the proposed project's impact on property values in town and the impact on Deerfield's rural character.

Erika Heilman lives on Meetinghouse Hill Road, about a mile as the crow flies from the PSNH ROW. She joined the committee because of her concern that the impact to individual property owners (both in tax revenue and personal wealth) could be affected negatively by the project. Erika came to the committee after requesting that the Select Board look at both the benefits and costs of the Northern Pass project for the town as a whole, in addition to properties on the ROW, with the specific concern that landowners not be charged with inadvertently subsidizing the private project.

Michael O'Neil has volunteered to serve on the Northern Pass committee because he is concerned about the negative impact the project will have on his property and the Town of Deerfield. The short term economic benefits, if any, will be more than offset by the negative effect on the rural character of Deerfield and the downside economic risk to the Town of Deerfield in the future due to public health issues and declining property values.

Erick Berglund Jr submits that Deerfield has been his home for 40 years. He has raised his family here. The PSNH ROW over which NP plans to pass runs over his property. He is concerned that the impact of NP on Deerfield and NH will be severely negative and far exceed the presumed benefits. He feels it is critical that Deerfield's governing body (Select Board) make a fully informed decision on behalf of the town to support or oppose NP. He wants to help in that endeavor.

Nicole Ruderman moved to Deerfield approximately 5 years ago from MA to move into the country and get away from the city and congestion. She has started her family here. The proposed PSNH Northern Pass project will run through properties in her neighborhood. She has seen large companies negatively influence the lives of private

citizens who were unaware of the impacts of these large projects. She wants to try to help the citizens of Deerfield understand the full cost/benefit of this Northern Pass project as well as what rights we have as citizens of this town to influence the exact design / outcome of the project. She wants to ensure that Deerfield's governing body (Select Board) make a fully informed decision on behalf of all the citizens of this town to support / oppose / provide town conditions to the Northern Pass Project.

Kathy Shigo joined the committee for several reasons. She and her husband live on Cate Road near the substation. It has negatively impacted their quality of life and has concerns about their health and safety. Aside from personal and local reasons, she has concerns that the project will negatively impact the White Mountain National Forest and tourism and feels no amount of additional tax revenue can replace that. She also has concerns about the use of eminent domain for corporate profit. Kathy is concerned that citizens be informed and involved on these issues.

NPAC Mission Statement: At its first meeting on June 27, 2011, NPAC adopted this mission statement after its first meeting:

An Advisory Board to gather and analyze information to present to the Deerfield Board of Selectmen so that they may best advocate for the Town of Deerfield and its residents regarding the Northern Pass Transmission proposal.

COST/BENEFIT ANALYSIS

I. BENEFITS

The obvious benefit to Deerfield of the NPT project is an increase to our local tax base (property value). Other benefits, such as lowered electricity rates, have yet to be confirmed, as it unclear what percentage of power generated from NPT will end up in New Hampshire proper. At this time, New Hampshire has an excess of power and exports the surplus. Jobs creation is also a potential benefit but there has been no evidence any local jobs will be added and/or sustained beyond the construction of the project. These specialized workers will likely be brought in for the construction phase.

NPAC, therefore, focused its analysis on the benefits of local property taxes. With regard to this analysis, a timeline shows key steps:

January 2011: PSNH/NPT officials appear before the Deerfield Board of Selectmen to present the potential tax benefits to the Town. The proposal states that Deerfield will benefit from this annual increase to its tax base.

7.3 miles of ROW x 2.5 million/mile (an industry standard rate) = \$371,000

June 2011: At the time NPAC began its analysis, NPT officials were presenting on their

website and in the press that Deerfield was to receive the following annual tax revenue:

\$1,800,000 (equal to \$96.2 million in assessed value,
20% of the town's total assessed value)

July 2011: The discrepancy between \$371,000 and \$1.8 million annual tax revenue to Deerfield gave NPAC cause for concern. By early July, members of the committee began contacting officials at NPT to inquire why the gap was so large between these two sources of information. Both results were sourced back to an economic study undertaken by Dr. Lisa Shapiro, commissioned by NPT. NPAC requested the full report by Dr. Shapiro so we could properly verify the calculations: the assessed values, broken down line by line, as well as the tax rates applied to them. Our repeated requests to view the full study went unaddressed, only that Dr. Shapiro's study was not intended to look at the detail per town but a broad look at the total project. We were told the figures used to calculate the \$1.8 million were not readily available nor in a format towns would find useful.

August 2011: By early August, without any verification behind the \$1.8 million figure, NPAC concluded that the most prudent course of action was to count on the \$371,000 annual tax payment and to discount the \$1.8 million since no source documentation was available. At this juncture, NPT officials presented new information to the Town of Deerfield: the actual proposed benefit would be \$718,000 based on a new calculation that resulted in adjusting the \$96.2 million in assessed value downward to \$35.3 million, a 60% reduction (see figure below from NPT website):



Breakdown of Estimated Northern Pass Project Investments in Deerfield			
	ORIGINAL PROJECTION January 2011	UPDATED PROJECTION August 2011	NOTES
345kV Line	\$30.5M	\$21.9M	Reflects updated preliminary structure costs
Substation	\$46.4M	\$10.9M	Reflects removal of Franklin AC Substation costs mistakenly allocated to Deerfield
115kV Line Relocations	\$19.3M	\$2.5M	Corrects assignment of preliminary allocation of costs
Total	\$96.2M	\$35.3M	

Note – All preliminary project cost estimates above have been created by multiplying the Direct Cost by 1.65 to generate a fully loaded "final" project cost associated with these areas.

NPAC also received these revised projections and recommends to the Board of Selectmen that they work with these as a baseline for new tax revenue when the project is operational (projected as 2015-16).

Summary of Benefits Analysis:

For NPT Project: Tax Revenue, 1st year Operational, 2015-2016

Assessed Value	Tax Revenue	Source/Date
\$18.25 million	\$371,000	NPT presentation to BOS, Jan 31, 2011
\$35.3 million	\$718,000 ²	Revised numbers by NPT, announced August 8, 2011

² represents a revision of estimated \$1.8 million annual taxes published on www.northernpass.us, a 60% decrease in their estimate; according to NPT officials, these revised figures are also subject to change as the project undergoes additional refinement and engineering; amount will decline after Year 1 due to depreciation of asset value, specifics to be determined.

NPAC believes that if it had not inquired persistently about the \$1.8 million annual revenue from NPT, it is unlikely this significantly revised figure would have been disclosed. In light of this, NPAC recommends continued due diligence around figures, specifically:

- to quantify depreciation beyond year 1
- to determine whether assessed value of 2.5M for reallocation of 115kV lines applies beyond year 1
- to verify that valuation on sub-station component is additive with current PSNH values
- to confirm that PSNH is the flow-through entity for tax payments (as PSNH is already a large taxpayer in town and may seek remedy for their total bill)
- to confirm that these are based on actual assessments of property and not simply a formula of total value of the project divided by 31 towns.

The stated benefit of \$718,000 in property tax revenue for Year 1, declining thereafter due to depreciation of asset values, must now be used as a baseline to compare against Costs.

II. COSTS

A. Local Property Values: Local Tax Base + Personal Wealth

Several studies found in the literature are funded by the electric utility industry. One such study was submitted on May 27, 2011 by Brian Underwood entitled Impact on Value of High Voltage Transmission Lines looks broadly across the market spectrum to determine impact on market value. No land sales or development parcels were reviewed however 4 residential properties from Deerfield and 4 from Littleton were identified. The report concludes that “there is no market evidence in either Deerfield or Littleton that would indicate diminution of property value due to high voltage transmission lines.” The preliminary study report falls short on two major counts. The first is that to establish market value today, a typical residential sale requires a minimum of 6 sold properties to compare. These 6 properties then are used to determine the value of 1 residence, not used to determine the value and effect on a whole town. The second objection is that on page 3, the report states “In all cases, the sales were arm’s length transactions.” One of the properties cited in the Deerfield analysis was not an arm’s length sale, which means that a discount from fair market value may have occurred if one family member buys the property from another family member.

Russell Thibeault quotes James Chalmers in Appraisal Literature Review: Impact of HVTL’s on Real Estate Values: A Review of Appraisal Literature: “It is fair to presume that the direction of the effect (on property values) would in most circumstances be negative, but the existence of a measureable effect and the magnitude of such an effect can only be determined by empirical analysis of actual market transactions.”

Site-specific analysis is needed with far more data than the preliminary reports have produced. The reason for this is that the loss of property value can be demonstrated as far more dramatic. Chalmers supports this and states “For a particular the impact of power lines on its appearance, on the quality of its views and on its overall appeal are a nuanced decision that can only be made on a case-by case basis.”

Kurt C. Kielisch, in his report on Valuation Guidelines for Properties with Electric Transmission Lines states that “the addition of a pending 345kV line was the principal reason for the buyer’s lower offer.” It seems imperative to also consider sales data that reflects sales that took place while a project was being proposed to match value changes that Deerfield might experience as a result of the introduction of a new higher tower or closer lines to existing residences or proposed residences in planned subdivisions. The slow real estate market is further impacted by “prudent avoidance”, a term used to describe people hesitancy to make a purchase when there is a perceived threat to the investment. Kielisch’s report concludes “It can be stated with a high degree of certainty that there is a significant negative effect ranging from -10% to - 30% of property value due to the presence of the high voltage electric transmission line. The actual loss depends on factors of land use, location of the power line and its size.”

NPAC posed many questions that still remain unanswered, but information regarding proposed tower heights and existing right of way expansions, when available, will need to be considered on not only bisected and abutting properties but also properties that will be in view of the HVTL’s. In the introduction section of the Visual

Simulations from the NP Transmission Project, published by Northern Pass in May 2011 it states that the majority of existing structures are 45-75 feet. They are largely not visible as they are below tree line. On page 7 of this same publication, the report simulates a tower of 130 feet as viewed from the historic Town Hall in the center of Deerfield. The capitol dome in Concord is 149 feet high. The reaction to this dramatic impact as it relates to value has to be put on hold until the actual engineering for the project is released.

There is a Report of Northern Pass Transmission LLC before the Federal Energy Regulatory Commission as it relates to the Project Cost and Feasibility Expansion (Docket No EL09-20-000). On page 6 of this report there is discussion given to preferred location for the southern terminus of this project and reasons for Deerfield vs. Scobie Pond Londonderry. The report states that "high towers were likely to draw strong public opposition". Options to avoid impact are brushed off due to expense but Deerfield's losses would be considerable. Impact on conservation easements and land trust areas were also considered as were the number of residential homes that would be impacted. The NP advisory committee also raises similar concerns and wishes to ensure the value of the conserved lands are not threatened by this project as well as property owners values diminished.

Not to be overlooked is the connection Deerfield has with other communities along the HVTL and the impact statewide this project may have. Deerfield may not claim a pristine landscape as a regional asset however we may recognize that the project could irrevocable compromise other regions landscapes to a greater degree, in particular the North Country. The Dannis Report is one such study from Dalton, NH which was an independent appraisal done by White Mountain Appraisal, Inc at a landowners expense. In this appraisal, it is concluded that a 135 acre tract of land would lose 63% of its' value, a 32 acre tract of mostly field land would have a 84% loss of value and a 12.5 acre historic house and lot, 91% loss in value.

The Dannis Report is a great example of the importance of looking case by case to determine the project's impact on property value. Each property is deserving of as much detailed consideration as another. Value of the whole property should be considered and not just the land portion within the easement when determining impact of the proposed NP. It should not be assumed that properties under conservation or current use would have minimal impact of value by Northern Pass. Instead, review the reasons for the conservation easement and future uses of the properties in current use, such as residential development and take those reasons into consideration when determine value impact.

Another issue that is of statewide concern is the hotly debated HB648, which would prohibit the use of eminent domain to take land for the project. Representatives, senators, and state official testified to the point of NP and their concern about loss of property values. This point is raised to further emphasize it is not just the citizens of Deerfield that are concerned about this project; it is a State of NH concern.

In conclusion, because of the literature cited, and when case-by-case scenarios are reviewed vs. the broad brush reports, there is great concern that NPT will cause a reduction to property values. The Board of Selectman must be as prepared as private residents to know how this project affects the value of our Town-owned lands in order to be proactive and ready to negotiate, if needed.

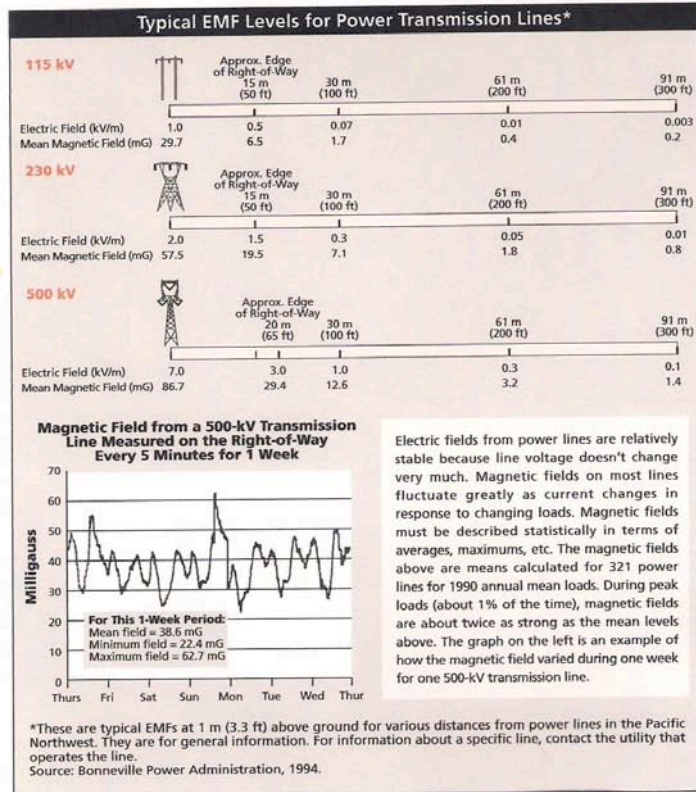
B. Health & Safety

The Northern Pass project proposed by PSNH and Hydro Quebec would construct a new 345kV transmission line through Deerfield. While our town is currently host to several 115kV transmission lines, this new line would represent a significant increase in voltage and the accompanying electro-magnetic fields.

While many studies around transmission lines and health risks have been conducted, the results have been inconclusive. EMF exposures and risks are difficult to study for a number of reasons. Some studies have shown a statistical significance of childhood leukemia, while others have concluded that no correlations can be made. What remains is scientific suspicion and enough evidence to warrant concern.

Though EMF exposures and their effects may be difficult to study, they are easily measured. Electro-magnetic fields are measured in units called milligauss. Attached is a chart published by National Institute of Environmental Health Sciences (NIEHS). It details the average EMF exposures in common environments. Average exposures range from 0.6 to 2.7.

Also attached is a chart (NIEHS) detailing typical EMF levels for transmission lines ranging from 115kV to 500kV. With points of reference being 230kV and 500kV, we can assume that the levels associated with the proposed 345kV line would fall between those. The average magnetic field exposure at a distance of 65 feet from the lines would register between 19.5 and 29.4 mG.



EMF Exposures in Common Environments

Magnetic fields measured in milligauss (mG)

Environment	Median* exposure	Top 5th percentile	Environment	Median* exposure	Top 5th percentile
OFFICE BUILDING			MACHINE SHOP		
Support staff	0.6	3.7	Machinist	0.4	6.0
Professional	0.5	2.6	Welder	1.1	24.6
Maintenance	0.6	3.8	Engineer	1.0	5.1
Visitor	0.6	2.1	Assembler	0.5	6.4
SCHOOL			Office staff	0.7	4.7
Teacher	0.6	3.3	GROCERY STORE		
Student	0.5	2.9	Cashier	2.7	11.9
Custodian	1.0	4.9	Butcher	2.4	12.8
Administrative staff	1.3	6.9	Office staff	2.1	7.1
HOSPITAL			Customer	1.1	7.7
Patient	0.6	3.6			
Medical staff	0.8	5.6			
Visitor	0.6	2.4			
Maintenance	0.6	5.9			

*The median of four measurements. For this table, the median is the average of the two middle measurements.
 Source: National Institute for Occupational Safety and Health.

A number of residential properties in Deerfield lie well within 65 feet of the proposed Northern Pass route. The proximity of these lines to homes and families, when combined with the inconclusive but suspected health risks would suggest that prudent avoidance be practiced in order to safeguard the public. The Precautionary Principle is also relevant here, defined as *avoidance of unnecessary exposure to power lines as long as there is scientific suspicion about their harmful side effects. The precautionary principle states that if an action or policy has a suspected risk of causing harm to the public or the environment; in the absence of scientific consensus that the action or policy is harmful, the burden of proof that it is not harmful falls on those taking the action.* (McLaren)

Concern over health issues relating to transmission lines has taken the form of legislation in several states and countries. Attached is a listing of policy examples in effect elsewhere.

*International and State Policies Relating to EMF Regulation**

World Health Organization - Endorses Prudent Avoidance.

American College of Physicians - EMF levels reduced significantly 300'-500' from a transmission line.

Spain - Prohibition of power lines near residential areas and schools.

Sweden - No houses within 330' of HV lines. First country to adopt Prudent Avoidance. No schools near power lines.

United Kingdom - Homes to be built more than 450' from overhead power lines or lines are to be buried.

Australia - Prudent Avoidance. Routing of power lines away from schools.

Italy - Regulations limiting power lines near schools where people spend more than four hours a day.

Connecticut - Where feasible, lines will be buried or a wide buffer-zone created in residential areas or near schools.

California - Boundary zone of 250' for 345kV lines.

Washington - Prudent Avoidance. Restriction of power lines exceeding 115kV to industrial areas only.

Rhode Island and Wisconsin - Moratorium on lines over 60kV.

Colorado - Prudent Avoidance.

Illinois - Prudent Avoidance. Denied 345kV line through downtown Chicago.

Oregon - Prudent Avoidance.

Utah - Prudent Avoidance.

* See Sources at the end of this document.

C. Other Impacts

Implementation of the Northern Pass 345 kV HVTL through Deerfield will have significant impacts that will impose tangible and intangible costs on the Town and on Deerfield residents. A discussion of the impacts producing intangible costs follows.

Other Impacts – What They Are

Other Impacts producing intangible costs to Deerfield and its residents is comprised of two groups. One is Community Attitudes and Feelings. The other is Environmental Attributes. The components of these two groups are as follows:

Community Attitudes and Feelings

- rural character
- quality of life
- visual appearance
- small town community feel
- quietude
- privacy
- views or view shed

Environmental Attributes

- protected drinking water
- quality of lakes and streams
- wetlands
- open space
- wildlife habitat

Determining Cost Value of Other Impacts

It is difficult to place a specific dollar value on these community attitudes/feelings and environmental attributes as their total value (rural character, small town feel, privacy, open space, wildlife habitat, etc) represents the sum of each resident's feelings regarding the loss or diminishment of each quality.

Deerfield residents in toto place a very high value on these qualities. This is well documented in the results of the survey of Deerfield residents conducted in December 2006 by the UNH Survey Center for the Deerfield Planning Board to assess attitudes about the Town and future planning. Seventeen hundred and seventy-five (1775) surveys were mailed and there were four hundred sixty-six (466) responses. This constituted a solid and credible response rate of 26 percent. The following survey responses solidify the conclusion that Deerfield residents place a high value on these qualities:

Attitudes about Deerfield

- **When asked all the reasons Deerfield adults moved there, 70 percent said because of the quality of life, 56 percent said location, 49 percent said the visual appearance, 16 percent said affordable housing, 12 percent said recreation, 9 percent said for a job or employment, 8 percent said the schools, 7 percent said tax structure, 6 percent said they were born there, and 13 percent gave some other reason.**
- **The plurality of Deerfield adults (46%) say what they like most about living in Deerfield is its rural character, 20 percent say the small town community feel, 16 percent say the quietness and privacy, 6 percent say the open space, 5 percent say the outdoor features and amenities, 3 percent say the location, 1 percent say quality of life, and 3 percent give some other description.**

General Planning

- **The vast majority of Deerfield residents (85%) indicated controlling property taxes as a very high priority (68%) or high priority (17%), followed by protecting drinking water supplies (83%), maintaining Deerfield's rural character (81%), protecting lakes and stream quality (76%), preserving open spaces (75%), protecting wildlife habitat (73%), slowing the town population growth (66%), protecting wetlands (66%), improving the educational system (56%), preserving historical sites and buildings (55%), minimizing traffic and noise (54%), protecting views (51%), improving the affordability of housing (37%), encouraging employment opportunities (35%), encouraging limited commercial development (34%), expanding existing businesses (31%), expanding recreational activities (17%) and encouraging residential development (3%).**
- **The majority of Deerfield residents are very concerned with many factors with regard to growth. Almost three quarters of residents (72%) are very concerned about the need to balance the Town budget against the tax rate, 63 percent say they are very concerned about the too rapid increase in school enrollment, 59 percent are very concerned about the loss of open space, 55 percent say they are very concerned about the too rapid increases in Town services, and 53 percent say they are very concerned about the existing character or flavor of the Town. Residents express less concern about an increased burden on emergency services (39% are very concerned), the future water needs of the Town (26%), and soil conditions and septic feasibility (25%).**

The Northern Pass HVTL will require rights-of-way (ROW) up to 300 feet and transmission line towers of 135 feet in height, replacing the current maximums of ROWs of 200 feet and tower heights of 75 feet. This will negatively impact scenic views and the highly valued natural qualities along the 7.3 mile ROW and adjacent lands from which the NPT HVTL is visible. Residents place a very high value on scenic views. In the UNH survey noted above, 49% of residents said they moved to Deerfield because of the

visual appearance and scenic views. Thus the cost of lost or diminished views is considered to be very high. Furthermore the State of NH does consider natural views as high value as well, in its rules for the determination of residential property assessments for local property taxes.

That Deerfield's Community Attitudes/Feelings and Environmental Attributes are of high value to Deerfield residents is further confirmed by the Master Plan adopted by the Planning Board and the Town. The Master Plan Vision statement sums this up well:

"The Town of Deerfield desires to maintain its character as a small, rural, but vibrant place with open space, natural beauty, and a strong sense of community. People live and move to Deerfield because of its rural and small town character, its quietness and privacy, its scenic qualities, and where a diversified mix of residents lives. All ages, economic abilities, education, professions and beliefs are valued and appreciated. These community qualities and values make our town a desirable and special place."

In conclusion, the costs of these Other Impacts of the implementation of the Northern Pass 345 kV HVTL through Deerfield are difficult to quantify. However, the committee concludes based on the research detailed above, that Community Attitudes/Feelings and Environmental Attributes are highly valued by Deerfield residents and their loss or reduction would be very costly to the Town.

CONCLUSION

What We Gain, What We Lose?

It was the express goal of NPAC to look at how the Town of Deerfield would come out on the whole if the NPT project were to move forward. It is fair to say the committee made more headway on the Benefits side of the table than the Costs, for the following reasons:

1. In order to calculate private property valuations, several things must be known, chief among them the heights of the towers along the 7.3 miles of the proposed right of way. For instance, a 135-foot tower might impact more houses/viewsheds than a 90-foot tower. Since the specific heights of the towers will not be engineered until after the Environmental Impact Statement is issued in 2012 (see Project Timeline/Permitting Process), very little can be done to assess properties on a town-wide basis at this time.
2. The costs as to other impacts, such as view sheds, the environment, and quality of life issues, are harder to put firm numbers to. In this regard, "value is in the eye of the beholder" and it is the view of NPAC that each townspeople places a different value on such items. Having said that, the ratified Deerfield Master Plan does show that townspeople weighed in heavily on valuing rural character, scenic views, and concern over growth. By extension, loss of these views and

rural character and other qualitative issues—as a result of a 7.3-mile swath of 100+ foot metal towers—would therefore need to be taken into consideration in the total view of the NPT project.

3. Likewise, the costs on health and safety—specifically, increased exposure to electromagnetic fields (EMFs)—are also difficult to quantify. As with many public health issues, the issue here is often that hindsight is 20/20. NPAC’s position on this is that since the data around exposure to EMFs from high-voltage transmission lines is inconclusive, our stance on it should be open while studies continue and legislation around it evolves. We also note that since many countries and states have taken the Prudent Avoidance approach, to protect residents and children in particular, NPAC considers this to be a wise, protective approach. We also feel that health and safety concerns should be considered in the cost column, if even to allow townspeople to voice concerns or lack thereof.

In Summary, on the Costs side...

At this early stage of the NPT proposal, the costs of the project to Deerfield are not quantifiable. Until the Department of Energy issues their Environmental Impact Statement, and subsequent engineering is done, specific costs cannot be gathered with any accuracy. NPAC submits that the NPT project is currently affecting property values in town and does feel there will be a cost to many property owners in town to a greater or lesser degree: a greater degree for those along the right of way and in the nearby vicinity to the line; a lesser degree to those in the surrounding town. NPAC highly recommends that the BOS take necessary steps to accurately assess any negative impact on our tax base going forward.

On the Benefits side...

It is important for Town officials and residents to visualize the value of an additional \$718,000 in the town budget each year (again, to be verified closer to the proposed project operation in 2015-16). The Town collects more than \$11 million in property tax per year, so we can see that this additional revenue is significant if not a substantial part of the budget.

NPAC also submits, as a point of background, that PSNH is currently providing Deerfield with the following annual tax revenue (independent of the Northern Pass Transmission Project). These assets are currently being reassessed to reflect the full-scale operations of the new substation:

PSNH, current holdings in Deerfield

Year	Assessed Value	Tax Revenue (annual)
2010 tax year (annual report)	\$39.3 million	\$799,866
2011 or 2012 tax year ¹	\$50-55 million ¹	\$1,017,500 - \$1,118,700 ¹

¹ depending on final date, valuation of substation, and current tax rate

In 2011-12, Deerfield's tax revenue from PSNH will increase by \$217,614 -- \$318,814.

These projected annual tax increases to Deerfield's revenue are independent of the Northern Pass Project. By the time the project is operational in year 1, Deerfield will have received an additional \$850,000 - \$1.2 million (range above x 4 tax years) in tax revenue from PSNH aside from NPT.

Costs & Benefits Together...

The annual projected tax revenue of \$718,000 currently represents half of the picture, a potential benefit until the losses of the project can be calculated in 2012 and beyond. That number will be diminished by any costs related to property values, health and safety, and quality of life assessments.

RECOMMENDED COURSE OF ACTION FOR BOARD OF SELECTMEN

In light of the cost/benefit analysis to date, NPAC strongly advises the BOS to undertake the following steps (items that affect budget underlined):

- Continue to pursue verification of new tax revenue estimates from PSNH (see Benefits sheet for detailed recommendations)
- Continued participation in Scoping Comments/EIS phase for DOE, asking for DOE to help with the independent cost/benefit analysis needed for our town
- NPAC highly recommends that the BOS take necessary steps to accurately assess any negative impact on our tax base going forward. Begin budgeting for 2012 and beyond for further independent assessment of costs in terms of town-wide property values (either through line item in budget or warrant article earmarking funds)
- NPAC recommends the BOS be aware of how any Town-owned land will be devalued should NPT move forward, so as to be compensated for any such loss
- Take part in a town-wide informational session to be held in the Fall
- Make an official ruling on the project as currently proposed, for or against based on townspeople's input
- Budget for in 2012 and beyond for town counsel's input to advocate for/take mitigation steps on behalf of the town around preserving tax revenue in future years as well as addressing other costs associated with NPT

In addition, we urge the BOS to consider:

- Conducting a townwide survey (can be conducted with the aid of UNH Survey Center through the mail or online)
- Showing Public Support of the passage of the Eminent Domain Bill (HB648) to support property owners/help them be fairly represented in process
- Circulating factual material—pros and cons—to Deerfield citizens through the Town Newsletter, election edition, particularly if warrant article is required (Nov deadline)

APPENDICES

I. APPENDIX I: Project Timeline

Federal & State Permitting Process:

Before the Northern Pass power line can be built, it must go through a permitting process. The process could take up to 3 years and there are a number of decisions/permits that must be granted before the project is approved. The first is a Presidential Permit. This permit is granted by the USDOE for any electric transmission project crossing international boundaries and the US Sec. of the State, US Sec of Energy, and US Sec. of the Interior are the approvers. As part of this Presidential Permit Process, there is an open scoping timeframe where people can write topics to submit into an Environmental Impact Statement (EIS). We are currently in the middle of the scoping phase and our town can submit suggestions/comments that we would like the EIS to cover. The EIS will likely take another 18 mos.

The second permit is the White Mountain National Forest Special Use Permit from the US Department of Agriculture (USDA). This must be granted because the Northern Pass Project proposes to construct transmission lines through 10 miles of the White Mountain National Forest. The USDA will use the EIS to make its decision.

The third through fifth requirements are State of NH permits and include a Site Evaluation Committee (SEC) certificate, a Public Utilities Commission contract decision, and Governor Lynch and the NH State Legislature may have to address eminent domain or other issues. The state will also use the draft EIS to base its decisions.

Date	Subject	Description
12/2010	USDOE Permit	Northern Pass application filed at the USDOE for the Presidential Permit for an Electric Transmission project crossing international boundaries.
6/14/2011	USDOE Permit	Written Scoping Comments initially due to the USDOE for suggestions/comments/topics for the Environmental Impact Statement to cover as part of the Presidential Permit process.
8/3/2011		Northern Pass Construction Plan delayed for new route proposal north of Groveton.
8/12/2011		Marie T. Van Luling, Northeast Utilities Vice President, assumes PR leadership role in the Northern Pass Project.
12/2011		Estimated time for new proposed route.
Early 2012	USDOE Permit	Estimated - USDOE public comment deadline for suggestions for the EIS = 45 days after the new proposed route is announced.
1 st Qtr/2013	USDOE Permit	Estimated completion time of the EIS for the USDOE Presidential permit.
2013	USDA Permit	USDA White Mountain National Forest Special Use Permit. Will use the EIS to make its decision.
2013	NH Permit	State of NH Site Evaluation Committee certificate. Will use the EIS to make its decision.
2013	NH Permit	State of NH Public Utilities Contract. Will use the EIS to make its decision.
2014 – 2016		Northern Pass Construction (Expected)
2016		Northern Pass Expected delivery of service.

SB2 & Town Process:

Below are dates involving the town of Deerfield in the Northern Pass Project.

Date	Description
8/15/2011	Deerfield Board meeting – Northern Pass Committee presenting preliminary results.
9/2011	Final Report submitted by the Northern Pass Committee to the Board of Selectmen.
fall/2011	Proposed Informational meeting for the town given by the

	Northern Pass Committee.
11/14/2011	Deadline for a warrant article that would be submitted by the Board of Selectmen and deliberated on at the 2012 town meeting.
1/10/2012	Deadline for a petitioned warrant article to put on the ballot by the citizens of the town for entry into Deerfield Board of Selectmen deliberative session.
2/4/2012	Deerfield Board of Selectmen deliberative session.

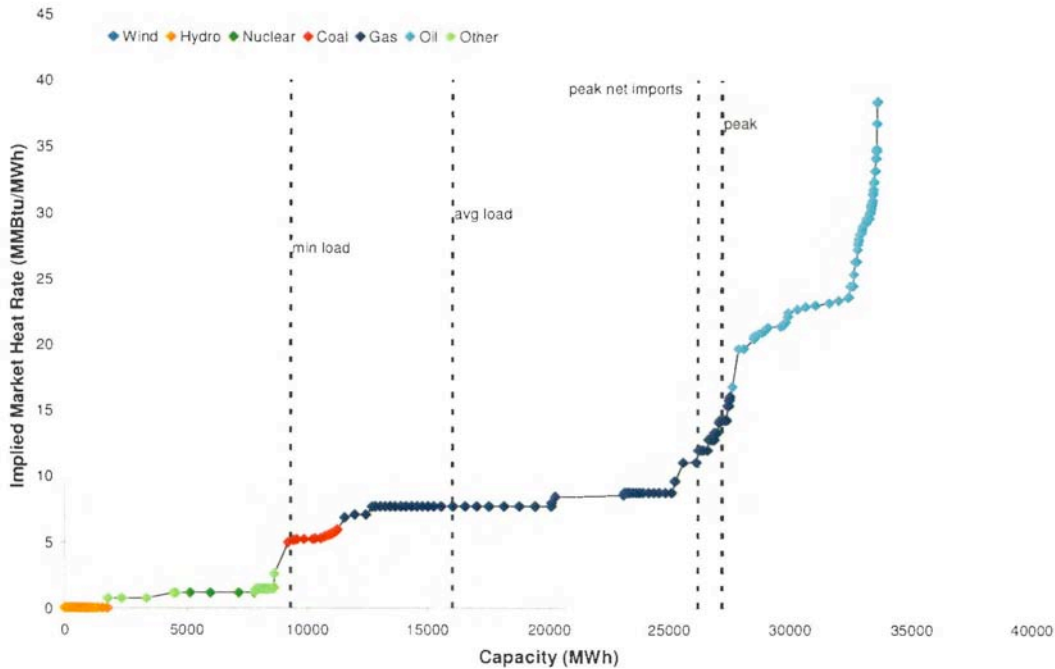
II. APPENDIX II. NEW ENGLAND ELECTRICTY GENERATION: A Brief Overview

The high voltage interstate transmission network is managed by a non-profit corporation called ISO-New England. Their coverage area includes the traditional New England states of New Hampshire, Maine, Vermont, Rhode Island, Massachusetts and Connecticut. Its primary purpose is to ensure there is always a reliable supply of electricity to the grid, monitoring of the wholesale marketplace, and regional planning for future electricity requirements. In 2010, ISO New England released a 10-year Regional System Plan indicating the New England market was reliant on high priced electricity generation and there was an opportunity for a supplier to bring a lower cost product to the New England electric market. This has resulted in numerous companies racing to plan, engineer, gain approval and build new transmission circuits into the New England market, an example being the Northern Pass Project.

How the Market Works

Wholesale pricing of electricity is determined by an auction type market overseen by ISO-New England with the last generation resource utilized setting the market rate. The hierarchy cost of electricity generation from lowest to highest is Wind/Solar, Hydro, Nuclear, Coal, Gas, Oil and Wood. A simple example of the typical daily market price setting is if the region required 7,000 Megawatts of power, a Wind facility would bid 0 cents to provide 1000 MW, a Hydro facility would bid \$.01 per MW to provide 1000 MW, Nuclear \$.02 for 1000 MW, Coal \$.03, Gas \$.04, Oil \$.05 and Wood \$.06. The wood fired generation plant sets the market rate at \$.06 per a Megawatt for that day as they are the last bidder to supply the required electricity to the grid. The result is all the plants receive \$.06 per a MW that day, even if they bid less, such as the wind generating plant at \$.00. The concern for ISO-New England in their study was Gas and Oil set the market rate for the auction 60% of the time, thus causing high rates for the market and as a result, consumers. This presents an opportunity for new suppliers to bring a lower cost product such as wind, solar or hydro to the market and profit while eliminating higher cost producers.

Figure 3: ISO-NE Supply Curve, Summer 2010



The 2010 Regional System Plan (RSP) concluded that New England presently and for the forecasted future has enough supply of electricity to meet demand and reserve requirements. However, it was indicated this supply of electricity is dependent on natural gas and oil as a fuel for over 40% of the generating facilities. This dependence will only increase as environmental concerns cause aging oil and coal plants to be converted to gas plants or shut down. As a lot of New England residents are converting to natural gas for heat and appliances, the increase in demand will possibly lead to large price fluctuations in a natural resource the region also depends on for electric generation. Additional supply that is currently available from Quebec Hydro cannot be imported from Canada at the present time as the current transmission lines are at capacity. ISO New England's study concluded reliability of the system would be increased if our supply of electricity generation was diversified to include more renewable and lower cost sources.

Why PSNH Customers Will See a Minimal Rate Decrease in NH From the Northern Pass

According to the study conducted by Charles River Associates on behalf of the Northern Pass Project, the electric distribution utilities in New England own and operate only a small percentage of the region's generating capacity. However, PSNH is regulated by the state of NH as a "supplier of last resort" and is mandated to keep their generating facilities operational at all the times. This is to provide reliability to the system, so when a resident uses a light switch in NH under normal circumstances, the light is guaranteed to turn on. However, the cost of this regulation is high due to the fact PSNH generating facilities primarily utilize coal, oil, gas and wood. So even if the market rate is set below

what is profitable for PSNH plants to run and similar privately held facilities would shut down to minimize losses, PSNH is mandated by regulations to continue operations. Retail consumers will only see savings when PSNH customer electricity demand exceeds what PSNH can supply internally. PSNH will then have the opportunity to buy the required amount from the wholesale market at a cheaper rate than their own electric generation. To see an increase in savings, deregulation of the company would be required.

Resources

Charles River Associates Northern Pass Study December 7, 2010, pages 8-12.

ISO-New England web site : www.iso-ne.com

ISO New England Regional System Plan 2010, Pages 1-24

Sources: Power Lines and Health Effects

Dr. Campbell McLaren, MD, FACEP

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